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**EXAM1***01-Mar-00*

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**QID:** 0008 **Rev:** 000 **Rev Date:** 2/3/00 **RO Select:** Yes **SRO Select:** No **Points:** 1.00**Lic Level:** RS **Difficulty:** 2 **Taxonomy:** K **Source:** New **Originator:** Hatman**10CFR55\_41:** NA **10CFR55\_43:** 43.5**Section:** 2.4 **Type:** Generic **System Title:** Emergency Procedures/Plan**System Number**  **K/A:** 2.4.26 **RO Imp:** 3.0 **SRO Imp:** 3.5 **Tier:** 3 **Group:** 4**Description:** Knowledge of facility protection requirements including fire brigade and portable fire fighting equipment usage.

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**Question:**

Given the following:

- \* A small fire has started due to burning insulation inside breaker cubicle 2B52-A4.
- \* Power to the breaker cannot be interrupted.

Which one (1) of the following should be used to extinguish the fire?

- A. Foam generating extinguisher.
- B. Class "A" Pressurized water extinguisher.
- C. Class "C" CO2 Extinguisher.
- D. Stream-type fire hose nozzle..

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**Answer:**

- C. Class "C" CO2 Extinguisher.

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**Notes:**

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**References:**

Pre-fire plan, Volume 2B, Rev 2, 2040-JJ-4  
ANO-S-LP-FP-C0006, Fighting Electrical Fires, Lesson Plan & Handouts

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0009 **Rev:** 000 **Rev Date:** 2/3/00 **RO Select:** Yes **SRO Select:** No **Points:** 1.00**Lic Level:** RS **Difficulty:** 2 **Taxonomy:** K **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:****Section:** 3.1 **Type:** Plant Systems **System Title:** Control Rod Drive System**System Number** 001 **K/A:** K4.03 **RO Imp:** 3.5 **SRO Imp:** 3.8 **Tier:** 2 **Group:** 1**Description:** Knowledge of CRDS design feature(s) and/or interlock(s) which provide for rod control logic.

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**Question:**

The following conditions exist:

Unit 2 is at 50% power.

Power escalation in progress.

Which one of the following CEDM components is the FIRST component to be energized when the CBOR places the CEA control switch to WITHDRAW?

- A. Lift Coil.
  - B. Upper Gripper Coil.
  - C. Load Transfer Coil.
  - D. Lower Gripper Coil.
- 

**Answer:**

- A. Lift Coil.
- 

**Notes:**

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**References:**

STM 2-02, Rev 5, Page 17

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0013 **Rev:** 001 **Rev Date:** 2/3/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** C **Source:** New **Originator:** Hatman**10CFR55\_41:** NA **10CFR55\_43:** 43.5**Section:** 4.2 **Type:** Generic APE **System Title:** Dropped Control Rod**System Number** 003 **K/A:** AK1.04 **RO Imp:** 3.1 **SRO Imp:** 3.7 **Tier:** 1 **Group:** 2**Description:** Knowledge of the operational implications of the effects of power level and control position on flux as they apply to Dropped Control Rods.

---

**Question:**

The plant is operating at full power when a fully withdrawn control rod drops into its fully inserted position. Which one of the following describes the effect that a delay in recovering the rod will have on the potential for core damage as a result of the recovery of the rod?

- A. Any delay will not appreciably affect the potential for damage over the next eight (8) hours.
- B. Changes in xenon concentration will make rod recovery more hazardous over the next eight (8) hours.
- C. Changes in xenon concentration will make rod recovery less hazardous over the next eight (8) hours.
- D. Changes in fuel burnup will make rod recovery more hazardous over the next eight (8) hours.

---

**Answer:**

- B. Changes in xenon concentration will make rod recovery more hazardous over the next eight (8) hours.

---

**Notes:**

When the rod drops it produces a flux depression around it. Xenon precursor production essentially stops. However, a local xenon peak arises which further suppresses flux and precursor production. If the rod is withdrawn after too much delay, whatever xenon is present around the rod will rapidly burnup and there will be a xenon free region around the now withdrawn rod in a core that is borated for 100% equilibrium xenon. This will produce a large power peak.

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**References:**

Procedure 2203.003, Rev 14-01-00, Steps 8, 27, 28 in Technical Guideline  
Technical Specification 3.1.3.1 Bases.

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**Historical Comments:**

02/25/00 - NRC Comment - D is the result of Xenon presence.  
02/28/00 - ANO Comment - Agreed with NRC comment and revised D by deleting "fuel temperature and" from the distractor.

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**QID:** 0014 **Rev:** 000 **Rev Date:** 2/3/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 2 **Taxonomy:** K **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.5 & 10 **10CFR55\_43:** NA**Section:** 4.2 **Type:** Generic APE **System Title:** Loss of Residual Heat Removal System**System Number** 025 **K/A:** AK3.01 **RO Imp:** 3.1 **SRO Imp:** 3.4 **Tier:** 1 **Group:** 2**Description:** Knowledge of the reasons for shifting to alternate flowpath as they apply to Loss of Residual Heat Removal System.

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**Question:**

OP 2104.004, Shutdown Cooling Ops, prohibits the use of Containment Spray (CS) pumps for shutdown cooling unless RCS Pressure is less than 50 psia. Which one (1) of the following is the reason this condition is required?

- A. To ensure that RCS Inventory is NOT lost.
  - B. To ensure that insoluble gasses do NOT collect in the CS pump.
  - C. To ensure that CS pump cavitation does NOT occur.
  - D. To ensure adequate flow rate exists for core cooling.
- 

**Answer:**

- A. To ensure that RCS Inventory is NOT lost.
- 

**Notes:**

The suction relief valve will lift at greater than 50 psig causing a loss of RCS inventory.

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**References:**

- 1. 2104.004, Rev 027-00-0, Step 5.2
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**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0017 **Rev:** 000 **Rev Date:** 2/3/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 2 **Taxonomy:** K **Source:** New **Originator:** Hatman**10CFR55\_41:** NA **10CFR55\_43:** 43.5**Section:** 4.1 **Type:** Generic EPE **System Title:** Large Break LOCA**System Number** 011 **K/A:** EA2.08 **RO Imp:** 3.4 **SRO Imp:** 3.9 **Tier:** 1 **Group:** 2**Description:** Ability to determine or interpret conditions necessary for recovery when accident reaches stable phase as they apply to Large Break LOCA.

---

---

**Question:**

Given the following:

- \* A large Break LOCA has occurred.
- \* Containment Spray has actuated.
- \* Operators are evaluating if Containment Spray can be secured according to 2202.003, Loss of Coolant Accident.

Which one (1) of the following is the MAXIMUM containment pressure below which containment spray may be secured?

- A. 24.0 psia.
  - B. 22.0 psia.
  - C. 20.3 psia.
  - D. 18.3 psia.
- 

**Answer:**

- B. 22.0 psia.
- 

**Notes:**

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**References:**

1. 2202.003, Rev 4, Step 18
- 

**Historical Comments:**

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**QID:** 0032 **Rev:** 000 **Rev Date:** 2/3/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** Ap **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.8 & 10 **10CFR55\_43:** NA**Section:** 4.2 **Type:** Generic APE **System Title:** Steam Line Rupture**System Number** 040 **K/A:** AK1.06 **RO Imp:** 3.7 **SRO Imp:** 3.8 **Tier:** 1 **Group:** 1**Description:** Knowledge of the operational implications of high-energy steam break considerations.

---

**Question:**

Given the following plant conditions:

- \* A Steam Line Break exists upstream of the "B" S/G MSIV.
- \* Main Steam Isolation has automatically actuated.

Which one (1) of the following could result if a steaming flowpath from the unaffected steam generator is not established following dryout of the affected steam generator?

- A. A void formation in the Reactor Vessel Upper Head.
  - B. An increase in core exit temperatures resulting in an interruption of natural circulation.
  - C. A rapid increase in Tcold of the unaffected loop resulting in an interruption in natural circulation.
  - D. A rapid repressurization of the RCS and subsequent pressurized thermal shock.
- 

**Answer:**

- D. A rapid repressurization of the RCS and subsequent pressurized thermal shock.
- 

**Notes:**

Answer "A" is possibly a true statement but is not the reason for establishing post cooldown conditions.  
Answer "B" is true for CETs and will interrupt natural circulation, but is not an expected core response.  
Answer "C" is true but is not the reason for maintaining post cooldown conditions.

---

**References:**

Procedure 2202.005, Rev 004-00-0, Step 18, Page 10  
Tech Guidelines for 2202.006, Rev 004-00-0, Step 18, Page 31 of 88.  
CEN-152, Rev 4, Bases, Pages B7-31

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**Historical Comments:**

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**QID:** 0051 **Rev:** 000 **Rev Date:** 2/3/00 **RO Select:** Yes **SRO Select:** No **Points:** 1.00**Lic Level:** RS **Difficulty:** 2 **Taxonomy:** K **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.2 - 9 **10CFR55\_43:** NA**Section:** 3.2 **Type:** Plant Systems **System Title:** Pressurizer Level Control System**System Number** 011 **K/A:** K1.05 **RO Imp:** 3.4 **SRO Imp:** 3.5 **Tier:** 2 **Group:** 2**Description:** Knowledge of the physical connections and/or cause-effect relationships between the Pressurizer Level Control System and the Reactor Regulating System.

---

**Question:**

Which one (1) of the following is used by the Pressurizer Level Controller to generate the pressurizer level curve (programmed level)?

- A. RCS Delta T.
- B. RCS Tavg.
- C. Tref.
- D. Reactor Power.

---

**Answer:**

- B. RCS Tavg.

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**Notes:**

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**References:**

2102.004, Rev 026-04-0, Attachment E  
STM 2-3-1 Rev 2 Chg 1, Page 23, Section 3.2.7

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0057 **Rev:** 000 **Rev Date:** 2/3/00 **RO Select:** Yes **SRO Select:** No **Points:** 1.00**Lic Level:** RS **Difficulty:** 2 **Taxonomy:** K **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.2 - 9 **10CFR55\_43:** NA**Section:** 3.4 **Type:** Plant Systems **System Title:** Reactor Coolant Pump System**System Number** 003 **K/A:** K1.03 **RO Imp:** 3.3 **SRO Imp:** 3.6 **Tier:** 2 **Group:** 1**Description:** Knowledge of the physical connections and/or cause-effect relationship between the RCPs and the RCP Seal System.

---

---

**Question:**

Which one (1) of the following circulates water through the Reactor Coolant Pump (RCP) Seal Cooler?

- A. RCP Auxiliary Impeller.
- B. RCP Main Impeller.
- C. RCP Recirc Impeller.
- D. Delta P between RCP and Volume Control Tank (VCT).

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**Answer:**

- C. RCP Recirc Impeller.

---

**Notes:**

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**References:**

STM 2-3-2, Rev 3, Page 2 & 3, Section 1.5

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**Historical Comments:**



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**EXAM1**01-Mar-00

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**QID:** 0058 **Rev:** 000 **Rev Date:** 2/3/00 **RO Select:** No **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** K **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:** NA**Section:** 3.4 **Type:** Plant Systems **System Title:** Reactor Coolant Pump System**System Number** 003 **K/A:** A3.05 **RO Imp:** 2.7 **SRO Imp:** 2.6 **Tier:** 2 **Group:** 1**Description:** Ability to monitor automatic operation of the RCPs including RCP lube oil and bearing lift pumps.

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---

**Question:**

Which one (1) of the following will cause an AUTOMATIC start of an RCP Lift Pump?

- A. Low oil lift system pressure.
- B. Low oil lift system flow is sensed.
- C. A start of the RCP is attempted.
- D. The RCP breaker trips.

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**Answer:**

- D. The RCP breaker trips.

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**Notes:**

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**References:**STM 2-3-2 Rev 3, Page 10, Section 1.7.1

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**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0068 **Rev:** 000 **Rev Date:** 2/3/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** An **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:** NA**Section:** 3.4 **Type:** Plant System **System Title:** Emergency Feedwater System**System Number** 061 **K/A:** A3.03 **RO Imp:** 3.9 **SRO Imp:** 3.9 **Tier:** 2 **Group:** 1**Description:** Ability to monitor automatic operation of EFW including EFW SG level control on automatic start.

---

**Question:**

Which of the following Steam Generator level bands will be maintained fifteen (15) minutes post trip for the following conditions:

- \* Plant was operating at full rated power.
- \* Emergency Feedwater Pump 2P7B Out of Service for maintenance.
- \* All systems operate properly.
- \* Loss of Offsite Power (LOOP) occurs.

- A. 58 - 62% Narrow Range.
- B. 240 - 260 inches Wide Range.
- C. 23 - 26% Narrow Range.
- D. 90 - 120 inches Wide Range.

---

**Answer:**

- C. 23 - 26% Narrow Range.

---

**Notes:**

SG level will be maintained approximately 60% for a normal Reactor Trip in 15 minutes. With a LOOP, EFW will maintain level with the ESFAS interposing relays.

---

**References:**

1. 2106.006 Rev 049-01-0, Step 6.1.4
2. Technical Specifications Table 2.2-1, Amendment 196, Page 2-5
3. STM 2-19-2, Rev 5 Chg 1, Sect 2.3.3
4. STM 2-19-2, Rev 5 Chg 1, Table 7.1

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**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0080 **Rev:** 000 **Rev Date:** 2/3/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** C **Source:** New **Originator:** Hatman**10CFR55\_41:** NA **10CFR55\_43:** 43.5**Section:** 4.2 **Type:** Generic APE **System Title:** Loss of Condenser Vacuum**System Number** 051 **K/A:** AA2.02 **RO Imp:** 3.9 **SRO Imp:** 4.1 **Tier:** 1 **Group:** 1**Description:** Ability to determine and interpret conditions requiring reactor and/or turbine trip as they apply to Loss of Condenser Vacuum.

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**Question:**

During a loss of condenser vacuum event, the following annunciators are received:

- \* 2K03-E09 FWP Turb "A" Vacuum Lo
- \* 2K03-E12 FWP Turb "B" Vacuum Lo

Prior to these alarms which of the below listed alarms should have been received first?

- A. 2K03-D3 Vacuum Pump 2C5ATrip.
  - B. 2K02-A14 SDBCS Emergency Off.
  - C. 2K03-A3 2E11A Pressure Hi.
  - D. 2K03-A8 2P1A Feed Pump Trip.
- 

**Answer:**

- C. 2K03-A3 2E11A Pressure Hi
- 

**Notes:**

The vacuum pumps will automatically start. SDBCS emergency off is manually initiated or caused by a loss of power. The SDBCS condenser interlock will annunciate, but is not an option. 2P1A trip will come in later.

---

**References:**

1. 2203.012B, Rev 21, Annunciator 2K02-A14
  2. 2203.012C, Rev 20, Annunciators 2K03-A3, 2K03-D3, 2K03-A8
- 

**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0082 **Rev:** 001 **Rev Date:** 2/3/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 4 **Taxonomy:** An **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.5 & 10 **10CFR55\_43:** NA**Section:** 4.1 **Type:** CE Generic EPE **System Title:** Loss of Feedwater**System Number** E06 **K/A:** EK3.2 **RO Imp:** 3.2 **SRO Imp:** 3.7 **Tier:** 1 **Group:** 2**Description:** Knowledge for the reasons for normal, abnormal and emergency operating procedures associated with Loss of Feedwater.

---

**Question:**

Which of the following actions should be performed for the following conditions?

- \* Plant operating at full power conditions.
- \* Emergency Feedwater Pump 2P7A Out Of Service for Maintenance.
- \* A Loss of Offsite Power occurs.
- \* A lockout occurs on 2DG1 when it auto starts.
- \* After ten (10) minutes 4160V ESF Bus 2A3 is energized from the AACG Diesel Generator.

- A. Start EFW Pump 2P7B, override and throttle open 2CV-1025-1 and 2CV-1075-1.
  - B. Start EFW Pump 2P7B, override and throttle open 2CV-1036-1 and 2CV-1038-1.
  - C. Start EFW Pump 2P7B and maximize EFW flow to both Steam Generators.
  - D. Reset EFAS signals to allow EFW to automatically feed both Steam Generators.
- 

**Answer:**

- A. Start EFW Pump 2P7B, override and throttle open 2CV-1025-1 and 2CV-1075-1.
- 

**Notes:**

2CV-1025-1 and 2CV-1075-1 can be throttled and 2CV-1036-1 and 2CV-1038-1 are either full open or full closed. Flow must be maintained < 150 gpm for 5 minutes

---

**References:**

1. 2202.006 Rev 004-00-0, Step 11, Page 4 of 33.
- 

**Historical Comments:**

Rev 001 - 02/03/00 - Added -1 to valve numbers to address comments from test reviewers.

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**EXAM1***01-Mar-00*

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**QID:** 0083 **Rev:** 000 **Rev Date:** 2/3/00 **RO Select:** Yes **SRO Select:** No **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** Ap **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.5 & 10 **10CFR55\_43:** NA**Section:** 4.2 **Type:** Generic APE **System Title:** Pressurizer Level Control Malfunction**System Number** 028 **K/A:** AK3.05 **RO Imp:** 3.7 **SRO Imp:** 4.1 **Tier:** 1 **Group:** 3**Description:** Knowledge of reasons for actions contained in AOP for PZR level malfunctions.

---

**Question:**

Given the following plant conditions:

- \* Pressurizer Level Control Channel Selector is positioned to "B" channel.
- \* Pressurizer Low Level Heater Cutout Channel Selector is positioned to BOTH.
- \* All Pressurizer Heaters are on for Boron Equalization.

Which of the following describes the status of the Pressurizer Heaters if Pressurizer Level Channel A fails low?

- A. All Pressurizer Heaters remain energized.
  - B. All Pressurizer Heaters will de-energize.
  - C. All Backup Heater de-energize, all Proportional Heater remain energized.
  - D. All Pressurizer Heater de-energize except Train B powered heaters.
- 

**Answer:**

- B. All Pressurizer Heaters will de-energize.
- 

**Notes:**

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**References:**

1. 2203.028, Rev 005-00-0, Step 6.0, Page 8 of 10
  2. STM 2-3-1, Rev 2 Ch 1, Section 3.2.2
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**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0085 **Rev:** 000 **Rev Date:** 2/3/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 4 **Taxonomy:** C **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:** NA**Section:** 4.2 **Type:** Generic APE **System Title:** Loss of RCS Flow**System Number** 017 **K/A:** AA1.21 **RO Imp:** 4.4 **SRO Imp:** 4.5 **Tier:** 1 **Group:** 1**Description:** Ability to operate and/or monitor development of natural circulation.

---

**Question:**

Given the following plant conditions:

- \* A Loss of Offsite Power has occurred.
- \* Reactor is in Mode 3
- \* RCS pressure is 1900 psia and slowly rising.
- \* Tcold is 550F and constant.
- \* Average CET temperature is 597 degrees F.
- \* Steam Generator "A" & "B" levels are 15% NR and slowly rising.
- \* Thot is 585F and slowly lowering.

All of the following conditions meet the criteria for single phase natural circulation in accordance with OP 2202.007, Loss of Offsite Power with the exception of:

- A. Tcold Temperature trend.
  - B. Thot Temperature trend.
  - C. Subcooled Margin.
  - D. Thot - CET differential temperature.
- 

**Answer:**

- D. Thot - CET differential temperature.
- 

**Notes:**

The delta T between Thot and CETs is > 10 degrees F. The subcooled margin must be determined from the steam tables, but is adequate.

---

**References:**

1. 2202.007, Rev 004-00-0, Step 23, Page 16 of 58.
  2. CEN-152, Rev 04, Loss of Offsite Power/Force Circulation Bases, Pages B9-26, 27, 28
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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0086 **Rev:** 000 **Rev Date:** 2/3/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** C **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.5 & 10 **10CFR55\_43:** NA**Section:** 4.2 **Type:** Generic APE **System Title:** Dropped Control Rod**System Number** 003 **K/A:** AK3.04 **RO Imp:** 3.8 **SRO Imp:** 4.1 **Tier:** 1 **Group:** 2**Description:** Knowledge of the reasons for the action contained in AOP for dropped control rod.

---

**Question:**

Following a CEA or CEDMCS malfunction in which the CEA was misaligned greater than 19 inches, the abnormal procedure directs you to hold reactor power constant for \_\_\_\_\_ after CEA alignment to \_\_\_\_\_.

- A. 0.5 hours, minimize xenon redistribution.
- B. 1 hour, minimize radial peaking.
- C. 2 hours, prevent pellet-clad interaction.
- D. 4 hours, allow isotopic iodine analysis.

---

**Answer:**

- C. 2 hours, prevent pellet-clad interaction.

---

**Notes:**

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**References:**

2203.003 Basis Document, Rev 014-01-0, Step 29, Page 34 of 44.

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0088 **Rev:** 000 **Rev Date:** 2/3/00 **RO Select:** Yes **SRO Select:** No **Points:** 1.00**Lic Level:** RS **Difficulty:** 2 **Taxonomy:** C **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:** NA**Section:** 3.4 **Type:** Plant System **System Title:** Steam Dump and Bypass Control System**System Number** 041 **K/A:** K4.17 **RO Imp:** 3.7 **SRO Imp:** 3.9 **Tier:** 2 **Group:** 3**Description:** Knowledge of SDS design feature(s) and/or interlock(s) related to a reactor trip.

---

**Question:**

Steam Bypass Valve 2CV-0302 receives a quick open block for a:

- A. Turbine Power to Load Unbalance..
  - B. Turbine Setback with a Feed Pump trip.
  - C. Reactor trip with Tave less than or equal to 552F.
  - D. Reactor trip with Tave less than or equal to 545F.
- 

**Answer:**

- C. Reactor trip with Tave less than or equal to 552F.
- 

**Notes:**

A PLUB will cause a quick open signal to occur and won't block 2CV-0302. Turbine setback for a feed pump trip was removed. With Tave < 552 degrees F the quick open is blocked.

---

**References:**

1. 2105.008, Rev 013-01-0, Section 3.0, Page 3 of 11.
  2. STM 2-23, Rev 4, Section 2.3.6.1,
- 

**Historical Comments:**



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**EXAM1***01-Mar-00*

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**QID:** 0100 **Rev:** 000 **Rev Date:** 2/3/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 2 **Taxonomy:** C **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.2 - 9 **10CFR55\_43:** NA**Section:** 3.3 **Type:** Plant Systems **System Title:** Pressurizer Pressure Control System**System Number** 010 **K/A:** K1.08 **RO Imp:** 3.2 **SRO Imp:** 3.5 **Tier:** 2 **Group:** 2**Description:** Knowledge of the physical connections and/or cause-effect relationships between the Pressurizer Pressure Control System and the Pressurizer Level Control System.

---

**Question:**

The purpose of energizing the Pressurizer Backup Heaters when the Pressurizer level rises above Programmed Level during an insurge is:

- A. To raise Pressurizer pressure to saturation.
- B. To raise Pressurizer steam space temperature.
- C. To return Pressurizer pressure to setpoint.
- D. To return Pressurizer water temperature to saturated conditions.

---

**Answer:**

- D. To return Pressurizer water temperature to saturated conditions.

---

**Notes:**

The pressurizer steam space should stay at saturation conditions. The water phase temperature will lower below saturation so the heaters are turned on to raise water phase temperature.

---

**References:**

STM 2-3-1, Rev 002 Chg 1, Section 2.2.4

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**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0108 **Rev:** 000 **Rev Date:** 2/3/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 2 **Taxonomy:** C **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:** NA**Section:** 3.7 **Type:** Plant Systems **System Title:** Nuclear Instrumentation System**System Number** 015 **K/A:** K4.06 **RO Imp:** 3.9 **SRO Imp:** 4.2 **Tier:** 2 **Group:** 1**Description:** Knowledge of Nuclear Instrumentation System design feature(s) and/or interlock(s) which provide for Reactor Trip Bypasses.

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**Question:**

Which of the following describes an automatic function of the 1E-4% bistable?

- A. Bypasses High Log power trip.
  - B. Bypasses High Steam Generator Level Trips.
  - C. Enables High Log Power Trip.
  - D. Enables High Steam Generator Level Trips.
- 

**Answer:**

- C. Enables High Log Power Trip.
- 

**Notes:**

The 1E-4% bistable will automatically remove the high log power trip bypass. The SG level trip bypass is automatically removed > 195 degrees F. The 1E-4% bistable enables the Hi Log Power Trip bypass - but must be manually inputted.

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**References:**

- 1. Technical Specification Table 3.3-1
  - 2. STM2-63, Rev 4, Sections 4.3.2 & 6.2.2.1
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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0112 **Rev:** 001 **Rev Date:** 2/3/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** Ap **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:** NA**Section:** 3.2 **Type:** Plant Systems **System Title:** Chemical and Volume Control System**System Number** 004 **K/A:** A4.05 **RO Imp:** 3.6 **SRO Imp:** 3.1 **Tier:** 2 **Group:** 1**Description:** Ability to manually operate and/or monitor in the control room the Letdown pressure and temperature control valves.

---

**Question:**

If 2PSV-4822, the Chemical and Volume Control System (CVCS) 600 psig relief valve, inadvertently lifts and sticks open, which of the following indications is expected?

- A. Back pressure regulating valve closes down.
- B. Hold Up Tank (2T12) rises rapidly.
- C. Letdown Flow Control Valve close down.
- D. Letdown Heat Exchanger temperature rises.

---

**Answer:**

- A. Back pressure regulating valve closes down.

---

**Notes:**

The backpressure valves will close since letdown flow is diverted through the relief. The holdup tank will rise slowly. Letdown flow is determined by Pressurizer level and will not be affected. Letdown heat exchanger temperature is determined by charging and letdown flow which are not affected.

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**References:**

1. STM 2-04, Rev 8, Sections 2.1.8 through 2.1.11
2. P&ID M2231 Sheet 1

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**Historical Comments:**

Rev 001 - 02/03/00 - Added "and sticks open" to stem to satisfy comments made by exam reviewers.

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**EXAM1**01-Mar-00

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**QID:** 0117 **Rev:** 000 **Rev Date:** 2/3/00 **RO Select:** No **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 4 **Taxonomy:** An **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:** NA**Section:** 3.1 **Type:** Plant Systems **System Title:** Control Rod Drive System**System Number** 001 **K/A:** K4.23 **RO Imp:** 3.4 **SRO Imp:** 3.8 **Tier:** 2 **Group:** 1**Description:** Knowledge of CRDS design feature(s) and/or interlock(s) which provide rod motion inhibit.

---

**Question:**

Which one (1) of the following describes the generation of a CEDMCS CEA Withdrawal Prohibit (CWP)?

- A. Initiated by the pulse counter CEA Position Indication System in response to a 2/4 pretrip condition on DNBR and prohibits ALL outward movement of regulating CEAs.
  - B. Initiated by the Plant Protection System (PPS) in response to a 2/4 pretrip condition on DNBR and prohibits ALL outward group movement of CEAs.
  - C. Initiated by the pulse counter CEA Position Indication System of the Plant Computer in response to Out of Sequence condition and prohibits ALL outward movement of CEAs.
  - D. Initiated by the Plant Protection System (PPS) in response to Out of Sequence condition and prohibits ALL outward group movement of CEAs.
- 

**Answer:**

- B. Initiated by the Plant Protection System (PPS) in response to a 2/4 pretrip condition on DNBR and prohibits ALL outward group movement of CEAs.
- 

**Notes:**

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**References:**

- 1. 2203.012J, Rev 027-04-0, Annunciator 2K10 Corrective Actions, 2K10-B1
  - 2. STM 2-02, Rev 5 Chg 1, CEDMCS, Section 8.2
- 

**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0119 **Rev:** 000 **Rev Date:** 2/3/00 **RO Select:** Yes **SRO Select:** No **Points:** 1.00**Lic Level:** RS **Difficulty:** 2 **Taxonomy:** K **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:** NA**Section:** 3.1 **Type:** Plant Systems **System Title:** Control Rod Drive System**System Number** 001 **K/A:** K4.03 **RO Imp:** 3.5 **SRO Imp:** 3.8 **Tier:** 2 **Group:** 1**Description:** Knowledge of CRDS design feature(s) and/or interlock(s) which provide rod control logic.

---

---

**Question:**

Which one of the following interlocks/permissives in CEDMCS is provided by the reed switch position transmitters (RSPT)?

- A. Lower Group Stop.
  - B. Upper Electrical Limit.
  - C. Upper Control Limit.
  - D. Upper Group Stop.
- 

**Answer:**

- B. Upper Electrical Limit.
- 

**Notes:**

The Lower Group Stop and Upper Group Stop are provided by the CEDMCS pulse Counter. The Upper Control Limit was removed when Group P was converted to full length CEAs.

---

**References:**

STM 2-02, Rev 5 Chg 1, CEDMCS, Section 3.7

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0120 **Rev:** 000 **Rev Date:** 2/4/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 2 **Taxonomy:** K **Source:** New **Originator:** Hatman**10CFR55\_41:** NA **10CFR55\_43:** NA**Section:** 2.1 **Type:** Generic **System Title:** Conduct of Operations**System Number**  **K/A:** 2.1.21 **RO Imp:** 3.1 **SRO Imp:** 3.2 **Tier:** 3 **Group:** 1**Description:** Ability to obtain and verify controlled procedure copy.

---

---

**Question:**

Reverification of a field controlled copy of a procedure is required to be performed every \_\_\_\_\_.

- A. 1 day.
- B. 7 days.
- C. 14 days.
- D. 30 days.

---

**Answer:**

- B. 7 days.

---

**Notes:**

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**References:**

1000.006, Rev 047-04-0 , Procedure Control, Step 12.8

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**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0122 **Rev:** 000 **Rev Date:** 2/4/00 **RO Select:** Yes **SRO Select:** No **Points:** 1.00**Lic Level:** R **Difficulty:** 3 **Taxonomy:** C **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.10 **10CFR55\_43:** NA**Section:** 2.1 **Type:** Generic **System Title:** Conduct of Operations**System Number** **K/A:** 2.1.29 **RO Imp:** 3.4 **SRO Imp:** 3.3 **Tier:** 3 **Group:** 1**Description:** Knowledge of how to conduct and verify valve lineups.

---

---

**Question:**

Pressurizer Spray Valve manual bypass 2RC-8A was repacked. The valve lineup is being performed. As independent verifier how would you check this valve's position?

- A. Visually observe the initial verifier throttling the valve to the correct position.
  - B. Move the valve slightly in the closed direction and then return it to its original position.
  - C. Inspect the last valve lineup sheet for verification signature and compare recorded valve position with the required position.
  - D. Compare stem or indicator position with the remote position indication position.
- 

**Answer:**

- A. Visually observe the positioner throttling the valve to the correct position.
- 

**Notes:**

This is a throttled open valve and verifier must observe the initial position operation.

---

**References:**

1015.035, Valve Operations, Rev 007-05-0, Step 11.3

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0126 **Rev:** 000 **Rev Date:** 2/4/00 **RO Select:** Yes **SRO Select:** No **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** Ap **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.5 **10CFR55\_43:** NA**Section:** 3.7 **Type:** Plant Systems **System Title:** Nuclear Instrumentation System**System Number** 015 **K/A:** K5.10 **RO Imp:** 2.9 **SRO Imp:** 3.2 **Tier:** 2 **Group:** 1**Description:** Knowledge of the Operational implications of the following concepts as they apply to the Nuclear Instrumentation System and Detector Operation.

---

**Question:**

Which ONE of the following describes the Excore Nuclear Instrumentation Safety Log Channel response as power is increased from the source range to full power.

- A. At about 1E-6% (Log Safety Channel), the NI input shifts from two detectors to one detector and the recorder on Panel 2C03 drops 1-2 decades.
- B. At about 1E-6% (Log Safety Channel), the NIs shift from log count rate to the Campbelling Circuit and the Panel 2C03 log channel meter indications drop 1-2 decades.
- C. At about 2E-2% (Log Safety Channel), the NIs shift from a count rate circuit to the Campbelling Circuit and there is no other noticeable indication changes.
- D. At about 2E-2% (Log Safety Channels), the NIs shift from the Campbelling Circuit to the Count Rate Circuit and there is no other noticeable indication changes.

---

**Answer:**

- C. At about 2E-2% (Log Safety Channel), the NIs shift from a count rate circuit to the Campbelling Circuit and there is no other noticeable indication change.

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**Notes:**

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**References:**

STM 2-67-1, Excore Nuclear Instrumentation, Rev 02, Section 4.3.3

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**Historical Comments:**



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**EXAM1**01-Mar-00

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**QID:** 0132 **Rev:** 000 **Rev Date:** 2/4/00 **RO Select:** No **SRO Select:** Yes **Points:** 1.00**Lic Level:** S **Difficulty:** 3 **Taxonomy:** Ap **Source:** New **Originator:** Hatman**10CFR55\_41:** NA **10CFR55\_43:** 43.5**Section:** 4.4 **Type:** CE Generic EPE **System Title:** Reactor Trip Recovery**System Number** E02 **K/A:** EA2.1 **RO Imp:** 2.7 **SRO Imp:** 3.7 **Tier:** 1 **Group:** 2**Description:** Ability to determine and interpret facility conditions and selection of appropriate procedures during abnormal and emergency operations (Reactor Trip Recovery).

---

**Question:**

As CRS, you are monitoring the safety function status checklist of OP 2202.002, "Reactor Trip Recovery". If RCS Pressure is 1890 psia and lowering, you should:

- A. Restore the safety function using the continuing actions.
- B. Return to the diagnostic actions and rediagnose.
- C. Go to "Safety Function Recovery Procedure".
- D. Refer to the pressure control decision tree.

---

**Answer:**

- B. Return to the diagnostics actions and rediagnose.

---

**Notes:**

The continuing action step will not restore pressure control but the contingency column may restore control. ANO did not use the Safety Function Recovery option but has the operator re-diagnose. The pressure control decision tree is utilized in the functional recovery procedure.

---

**References:**

1. 2202.002, Reactor Trip Recovery, Rev 002-00-0, Exit Conditions
2. 2202.002, Reactor Trip Recovery, Rev 002-00-0, Safety Function Status Checks (SFSC).
3. 1015.021, ANO-2 EOP/AOP User Guide, Rev 004-01-0, Step 5.9.6

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**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0142 **Rev:** 000 **Rev Date:** 2/4/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 2 **Taxonomy:** An **Source:** New **Originator:** Hatman**10CFR55\_41:** NA **10CFR55\_43:** 43.5**Section:** 4.2 **Type:** Generic APE **System Title:** Reactor Coolant Pump Malfunctions**System Number** 015 **K/A:** AA2.08 **RO Imp:** 3.4 **SRO Imp:** 3.5 **Tier:** 1 **Group:** 1**Description:** Ability to determine/interpret when to secure RCPs on high bearing temperature as per Reactor Coolant Pump Malfunctions.

---

**Question:**

During normal power operations, Reactor Coolant Pump 2P32B Upper Oil Reservoir level begins to drop. Annunciators 2K11-F3, RCP "B" UPPER/LOWER OIL RSVR LEVEL LO" and 2K11-B3, RCP "B" UPPER THRUST BEARING METAL TEMPERATURE HI are actuated. Thrust Bearing temperature is rising. Which one (1) of the following operator actions is required?

- A. Monitor RCP 2P32B for vibration.
  - B. Continue to monitor thrust bearing temperature.
  - C. Trip the reactor and stop ALL RCPs.
  - D. Trip the reactor and stop RCP 2P32B.
- 

**Answer:**

- D. Trip the reactor and stop RCP 2P32B.
- 

**Notes:**

Only the affected RCP must be secured.

---

**References:**

2203.012K, Rev 029-00-0, Annunciator 2K11 Corrective Actions  
2203.025, RCP Emergencies, Rev 8, Step 8.0

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:**  **Rev:**  **Rev Date:**  **RO Select:**  **SRO Select:**  **Points:** **Lic Level:**  **Difficulty:**  **Taxonomy:**  **Source:**  **Originator:** **10CFR55\_41:**  **10CFR55\_43:** **Section:**  **Type:**  **System Title:** **System Number**  **K/A:**  **RO Imp:**  **SRO Imp:**  **Tier:**  **Group:** **Description:** 

---

**Question:**

Which one (1) of the following is the MAXIMUM period that a standard Radiation Work Permit (RWP) may be approved per procedure?

- A. One week.
  - B. One month.
  - C. One quarter.
  - D. One year.
- 

**Answer:**

- D. One year.
- 

**Notes:**

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**References:**

1012.019, Radiological Work Permits, Rev 006-02-0, Step 4.1.1

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**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0147 **Rev:** 000 **Rev Date:** 2/4/00 **RO Select:** No **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** An **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.5 **10CFR55\_43:** NA**Section:** 3.7 **Type:** Plant Systems **System Title:** Nuclear Instrumentation System**System Number** 015 **K/A:** A1.01 **RO Imp:** 3.5 **SRO Imp:** 3.8 **Tier:** 2 **Group:** 1**Description:** Ability to predict/monitor changes in parameters (to prevent exceeding design limits) associated with operating the Nuclear Instrumentation System (NIS) controls including NIS calibration by heat balance.

---

**Question:**

The linear safety channel instruments have been set in accordance with the most recent Secondary calorimetric heat balance calibration. When the heat balance was performed, an error existed in the instrument used to measure feed flow. Actual feed flow was higher than measured feed flow. This will affect the degree of conservatism of the high linear power trip setpoint in which one (1) of the following ways?

- A. It is unaffected.
- B. It becomes more conservative (trips at a lower power).
- C. It becomes less conservative (trips at a higher power).
- D. It depends upon flux shape and core life and cannot be predicted from this data.

---

**Answer:**

- C. It becomes less conservative (trips at a higher power).

---

**Notes:**

Since actual feed flow is higher than measured, the calorimetric will indicate a lower plant power than actually exists, therefore, it is non-conservative. Flux shape and core life are not inputs to secondary calorimetric calculations.

---

**References:**

Form 2103.016B, Rev 004-02-0, Secondary Calorimetric Power Calculation Sheet

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**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0163 **Rev:** 000 **Rev Date:** 2/4/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** Ap **Source:** New **Originator:** Hatman**10CFR55\_41:** NA **10CFR55\_43:** 43.5**Section:** 4.2 **Type:** Generic APE **System Title:** Continuous Rod Withdrawal**System Number** 001 **K/A:** AA2.05 **RO Imp:** 4.4 **SRO Imp:** 4.6 **Tier:** 1 **Group:** 2**Description:** Ability to determine and interpret uncontrolled rod withdrawal, from available indications.

---

**Question:**

The following plant conditions exist:

- \* No operator actions have been taken.
- \* Core life is near EOL.
- \* Power level is 80% and increasing.
- \* Tave is increasing.
- \* Containment pressure and temperature are normal.
- \* Pressurizer pressure is normal.
- \* All systems are in their normal mode.

Which of the following can cause these conditions?

- A. Partial loss of feedwater heating.
- B. Continuous rod withdrawal.
- C. Steam leak outside containment.
- D. Slow closure of an MSIV

---

**Answer:**

- B. Continuous rod withdrawal.
- 

**Notes:**

A loss of Feedwater heating will cause a power increase and an RCS temperature decrease. A steam leak will cause a power increase and RCS Temperature decrease. An MSIV closure will cause an RCS temperature increase and a power decrease.

---

**References:**

CEA Malfunction Bases Document, Rev 014-01-0, Steps 13, 14, 15

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**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0195 **Rev:** 001 **Rev Date:** 2/7/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** An **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.5 **10CFR55\_43:** 43.5**Section:** 3.5 **Type:** Plant System **System Title:** Prz Relief/Quench Tank**System Number** 007 **K/A:** A2.01 **RO Imp:** 3.9 **SRO Imp:** 4.2 **Tier:** 2 **Group:** 3**Description:** Ability to (a) predict the impacts of a stuck-open PORV or code safety on the PRT/QT; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of this malfunction.

---

**Question:**

Given the following plant conditions:

- \* A trip from full power occurred three (3) minutes ago.
- \* RCS Tave is 552F and stable.
- \* Pressurizer pressure is 1737 psig and decreasing rapidly.
- \* Pressurizer level is 28% and increasing rapidly.
- \* Containment pressure is 14.4 psia and stable.

Which ONE of the following events has occurred?

- A. Steam Generator Tube Leak.
- B. RCS Sample Line Rupture.
- C. Stuck open Pressurizer Safety Valve.
- D. Small steam line break inside containment.

---

**Answer:**

- C. Stuck open Pressurizer Safety Valve.

---

**Notes:**

This condition is indicative of a Reactor Vessel head bubble which will cause a rapid increase in Pressurizer level. Since RCS pressure is above HPSI shutoff head, the only way pressurizer level can increase rapidly is due to a head bubble which is indicative of a stuck open safety valve.

---

**References:**

1. 2202.001, Standard Post Trip Actions, Rev 004-00-0, Diagnostic Actions Chart
2. 2202.009, Functional Recovery, Rev 004-01-0, Pressure Control Continuing Actions.
3. 2202.010, Standard Attachments, Rev 005-01-0, Attachment 34.

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**Historical Comments:**

Rev 001- 02/04/00 - Added "three (3) minutes ago" to trip condition in stem of question to address comments made by exam reviewers.

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**EXAM1***01-Mar-00*

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**QID:** 0196 **Rev:** 0 **Rev Date:** 2/4/00 **RO Select:** Yes **SRO Select:** No **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** An **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.5 **10CFR55\_43:** 45.7**Section:** 3.2 **Type:** Plant System **System Title:** Reactor Coolant System**System Number** 002 **K/A:** K5.09 **RO Imp:** 3.7 **SRO Imp:** 4.2 **Tier:** 2 **Group:** 2**Description:** Knowledge of the operational implications of the relationship of pressure and temperature for water saturation and subcooling conditions as they apply to the RCS.

---

**Question:**

Given the following conditions:

- \* Unit 2 operating at full licensed power.
- \* Normal operating temperature and pressure.
- \* A steam leak develops on the "A" Main Steam line outside containment.
- \* A one (1) gpm RCS leak develops on the "A" Hot Leg.
- \* Containment pressure is at atmospheric.

Which of the following statements correctly describes the condition of the steam exiting each leak?

- A. The primary side steam is saturated, the secondary steam is saturated.
- B. The secondary steam is superheated, the primary steam is saturated.
- C. The primary steam is superheated, the secondary steam is superheated.
- D. The secondary steam is saturated, the primary steam is superheated.

---

**Answer:**

- B. The secondary steam is superheated, the primary steam is saturated.

---

**Notes:**

The examinee will be required to know both primary and secondary temperatures and pressures. Using the steam tables, determine the condition of the leaking fluid.

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**References:**

Steam Tables and Mollier Diagram.

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**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0197 **Rev:** 0 **Rev Date:** 2/4/00 **RO Select:** No **SRO Select:** Yes **Points:** 1.00**Lic Level:** S **Difficulty:** 3 **Taxonomy:** An **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.5 **10CFR55\_43:** 43.5**Section:** 3.8 **Type:** Plant Systems **System Title:** Spent Fuel Pool Cooling System**System Number** 033 **K/A:** A2.03 **RO Imp:** 3.1 **SRO Imp:** 3.5 **Tier:** 2 **Group:** 2**Description:** Ability to (a) predict the impacts of abnormal level or loss of water level on the Spent Fuel Cooling System; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations.

---

---

**Question:**

Given the following:

- \* Plant is in Mode 6 refueling condition.
- \* Spent Fuel Pool Purification Pump 2P66 is aligned to Spent Fuel Pool with suction aligned to lower level.
- \* 2P66 discharge line break occurs.

Fuel Pool water level will decrease to:

- A. nine (9) feet above the top of the fuel assemblies.
  - B. approximately 401 ft elevation.
  - C. the bottom of the skimmer suction.
  - D. approximately 398 ft elevation.
- 

**Answer:**

- B. approximately 401 ft. elevation.
- 

**Notes:**

Normal elevation for pool level is 401'6". The examinee must realize that siphon breaker is down stream of the suction selection valves and determine how far water level will be drained.

---

**References:**

Fuel Pool Systems, 2104.006, Rev 018-00-0, Section 3.0 & Step 5.3.

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**Historical Comments:**



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**EXAM1**01-Mar-00

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**QID:** 0198 **Rev:** 0 **Rev Date:** 2/4/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 2 **Taxonomy:** K **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:** 45.7**Section:** 3.7 **Type:** Instrumentation **System Title:** Reactor Protection System**System Number** 012 **K/A:** A2.05 **RO Imp:** 3.1 **SRO Imp:** 3.2 **Tier:** 2 **Group:** 2**Description:** Ability to (a) predict the impacts of faulty or erratic operation of detectors and function generators on the RPS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations.

---

**Question:**

Given the following conditions:

- \* Plant operating at Full Rated Power
- \* 2PI-1041-1, SG "A" Pressure Transmitter fails HIGH

Which of the following actions should be taken:

- A. Bypass Trip #11, "A" SG Pressure Low on PPS Channel "A".
  - B. Bypass Trip #11, "A" SG Pressure Low AND Trip #19, SG-1 Delta P High on PPS Channel A.
  - C. Bypass Trip #11, "A" SG Pressure Low AND Trips #19 & 20, SG-1 & SG-2 Delta P High on PPS Channel A.
  - D. Bypass Trip #11, "A" SG Pressure Low AND CSAS on PPS Channel A.
- 

**Answer:**

- C. Bypass Trip #11, "A" SG Pressure Low AND Trips #19 & 20, SG-1 & SG-2 Delta P High on PPS Channel A.
- 

**Notes:**

This requires the examinee to determine all parameters a failed instrument will affect. The #11 trip is obvious so all answers contain this.

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**References:**

Technical Specifications, Table 3.3-1, Action 2, Item 4.

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**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0199 **Rev:** 001 **Rev Date:** 2/4/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 4 **Taxonomy:** Ev **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:** 45.7**Section:** 4.4 **Type:** Generic APE **System Title:** Excess RCS Leakage**System Number** A16 **K/A:** AK2.2 **RO Imp:** 3.0 **SRO Imp:** 3.3 **Tier:** 1 **Group:** 3**Description:** Knowledge of the interrelations between the Excess RCS Leakage and the facilities heat removal systems, including primary coolant, emergency coolant, the decay heat removal systems, and relations between the proper operation of these systems to the operation of the facility.

---

**Question:**

Given the following plant conditions:

- \* Pressurizer Level has decreased by 10% in 10 minutes.
- \* Loop II CCW Surge Tank has increased by 57% in 10 minutes.
- \* Loop II CCW Radiation Monitor is in high alarm.
- \* Reactor has been manually tripped.
- \* All RCPs are secured.
- \* EOP/AOP Actions completed for cooldown to Shutdown Cooling Entry Conditions.

Which of the following statements describe the status of RCS leakage?

- A. Directed to Reactor Drain Tank.
  - B. Directed to Quench Tank.
  - C. Directed to Volume Control Tank.
  - D. Directed to Containment floor drains.
- 

**Answer:**

- D. Directed to Containment floor drains.
- 

**Notes:**

The Examinee must determine the RCS Leakrate to evaluate the governing procedure. The examinee then must determine that CCW to Containment is isolated prior to initiating SDC. Once CCW is isolated, then the CCW System will attempt to reach RCS pressure conditions and the CCW relief will lift and the RCS will be directed to the Containment floor drains.

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**References:**Excess RCS Leakage, 2203.016, Rev 008-03-0, Attachment A, Step 9

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**Historical Comments:**

Rev 001 - 02/04/00 - Changed stem of question from "status of RCP Controlled Bleedoff Flow" to "status of RCS Leakage" due to comments from Exam reviewers.

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**EXAM1**01-Mar-00

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**QID:** 0200 **Rev:** 000 **Rev Date:** 2/4/00 **RO Select:** Yes **SRO Select:** No **Points:** 1.00**Lic Level:** RS **Difficulty:** 4 **Taxonomy:** An **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:****Section:** 3.7 **Type:** Instrumentation **System Title:** Nuclear Instrumentation System**System Number** 015 **K/A:** K4.10 **RO Imp:** 3.2 **SRO Imp:** 3.5 **Tier:** 2 **Group:** 1**Description:** Knowledge of NIS design feature(s) and/or interlock(s) providing for redundant sources of information on power level.

---

---

**Question:**

The following plant conditions exist:

- \* Unit 2 is holding at 20% power following a refueling outage.
- \* Moderator Temperature Coefficient (MTC) is  $+0.3E-4$  delta k/k/degree F.
- \* The CBOT increases Steam Generator Blowdown flow from 20 gpm to 100 gpm on both SGs.

Which of the following statements describes the immediate plant response to this evolution? (Assume no operator actions)

- A. Reactor power increases, letdown flow increases, feedwater flow increases.
  - B. Reactor power decreases, letdown flow increases, feedwater flow decreases.
  - C. Reactor power increases, letdown flow decreases, feedwater flow decreases.
  - D. Reactor power decreases, letdown flow decreases, feedwater flow increases.
- 

**Answer:**

- D. Reactor power decreases, letdown flow decreases, feedwater flow increases.
- 

**Notes:**

Reactor power decreases due to positive MTC. This also causes RCS temperature to decrease which results in higher density water, thereby causing Pressurizer level to shrink and letdown flow will decrease. Feed water flow will increase because blowdown flow increased.

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**References:**

Reactor Theory Lesson Plan, ANO-S-LP-RO-RXT10, Rev 1.

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**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0201 **Rev:** 0 **Rev Date:** 2/4/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 4 **Taxonomy:** An **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.5,10 **10CFR55\_43:** 45.6,13**Section:** 4.1 **Type:** Generic EOP **System Title:** Loss of Offsite and Onsite Power**System Number** 055 **K/A:** EK3.02 **RO Imp:** 4.3 **SRO Imp:** 4.6 **Tier:** 1 **Group:** 1**Description:** Knowledge of the reason for actions contained in EOP for Loss of Offsite and Onsite Power as they apply to the Station Blackout EOP.

---

**Question:**

The following plant conditions exist:

- \* Loss of Offsite Power has occurred from full power.
- \* AACDG is Out of Service.
- \* 4160 VAC ESF Bus 2A3 has lockout.
- \* #2EDG has failed.
- \* Twenty (20) minutes later a loss of Green D.C. occurs.

Which of the following actions should be performed for these conditions?

- A. Locally throttle EFW Valves 2CV-1026-2 and 2CV-1076-2.
  - B. Locally start and manually control EFW Pump 2P7A.
  - C. Re-open MSIVs and feed SGs with Main Feedwater Pump.
  - D. Cross-connect Red and Green Train DC Buses.
- 

**Answer:**

- B. Locally start and manually control EFW Pump 2P7A.
- 

**Notes:**

The "A" EFW pump will overspeed trip when the Loss of DC occurs because a loss of power to the governor will cause the control valve to fail full open. The candidate must determine that no other feed source is available, AACDG out of service and loss of 2A3 removes #1EDG from service and #2EDG failure. The only feed source is 2P7A. The option to cross-tie red and green DC may cause a Loss of All DC. The only method to restore 2P7A to service is locally controlling the governor valve.

---

**References:**

1. Blackout EOP, 2202.008, Rev 004-00-0, Section 1, Step 7.C.6
  2. EFW System Operation, 2106.006, Rev 049-04-0, Exhibit 3, Manual Control of 2P7A
- 

**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0202 **Rev:** 000 **Rev Date:** 2/4/00 **RO Select:** No **SRO Select:** Yes **Points:** 1.00**Lic Level:** S **Difficulty:** 4 **Taxonomy:** Ap **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.5,10 **10CFR55\_43:** 45.6,13**Section:** 4.2 **Type:** Generic AOP **System Title:** Emergency Boration**System Number** 024 **K/A:** AK3.02 **RO Imp:** 4.2 **SRO Imp:** 4.4 **Tier:** 1 **Group:** 1**Description:** Knowledge of the reasons for actions contained in EOP as they apply to Emergency Boration.

---

**Question:**

Given the following plant conditions:

- \* Reactor Trip from full power.
- \* CEAs 31 and 32 remain at 149" withdrawn.
- \* Charging header is ruptured.
- \* Ten (10) minutes after Reactor Trip, Reactor Power 3E-1% and stable.

Which of the following actions is required for the given conditions?

- A. Actuate SIAS and open High Point Vents.
  - B. Actuate SIAS and depressurize with Auxiliary Spray.
  - C. Start one HPSI Pump and depressurize with Main Spray.
  - D. Start both HPSI Pumps and open High Point Vents.
- 

**Answer:**

- C. Start one HPSI Pump and depressurize with Main Spray.
- 

**Notes:**

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**References:**

1. Standard Post Trip Actions, 2202.001, Rev 004-00-0, Diagnostic Actions
  2. Functional Recovery Procedure, 2202.009, Rev 004-01-0, RC-3, Step 4.A, B
- 

**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0203 **Rev:** 000 **Rev Date:** 2/4/00 **RO Select:** No **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** Ap **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.5,10 **10CFR55\_43:** 45.6,13**Section:** 4.2 **Type:** Generic AOP **System Title:** Loss of Instrument Air**System Number** 065 **K/A:** AK3.08 **RO Imp:** 3.7 **SRO Imp:** 3.9 **Tier:** 1 **Group:** 3**Description:** Knowledge of the reasons for actions contained in AOP for Loss of Instrument Air.

---

**Question:**

Given the following plant conditions:

- \* Plant operating at full power.
- \* Instrument Air pressure reading 62 psig and slowing lowering.

Which of the following actions should be performed for the given conditions?

- A. Pin Main FW Regulating valves in the "AS IS" position.
  - B. Pin Main Steam Isolation Valves in the "OPEN" position.
  - C. Isolate Chilled Water to Containment Coolers.
  - D. Align Service Water Returns to the Emergency Cooling Pond.
- 

**Answer:**

- D. Align Service Water Returns to the Emergency Cooling Pond.
- 

**Notes:**

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**References:**

1. Loss of Instrument Air AOP, Rev 007-00-0, Step 11.B
  2. Loss of Instrument Air AOP Bases Document, 2203.021, Rev 007-00-0, Step 11.
- 

**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0204 **Rev:** 000 **Rev Date:** 2/4/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 2 **Taxonomy:** C **Source:** New **Originator:** Hatman**10CFR55\_41:**  **10CFR55\_43:** **Section:** 3.5 **Type:** Cntmt Integrity **System Title:** Hydrogen Recombiner & Purge Control Syste**System Number** 028 **K/A:** A2.02 **RO Imp:** 3.5 **SRO Imp:** 3.9 **Tier:** 2 **Group:** 3**Description:** Ability to (a) predict the impacts of the following malfunctions or operations on the HRPS; and (b) based on those predictions, use procedures to correct, control or mitigate the consequences of those malfunctions or operations: LOCA condition and related concern over hydrogen.

---

**Question:**

The following plant conditions exist:

- \* A large break LOCA has occurred on Unit 2.
- \* EOP 2202.003, Loss of Coolant Accident is being implemented.
- \* Hydrogen Analyzers initially indicate 0.7%.
- \* Hydrogen concentration has increased another 2.2% since the initial reading.
- \* No equipment is out of service.

Which of the following actions are required to satisfy the Containment Combustible Gas Control safety function?

- A. Ensure both Hydrogen Recombiners are in service.
- B. Ensure the Hydrogen Purge System in service.
- C. Ensure both Hydrogen Recombiners and Hydrogen Purge System in service.
- D. Ensure both Hydrogen Purge System and Containment Spray in service.

---

**Answer:**

- A. Ensure both Hydrogen Recombiners in service.

---

**Notes:**

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**References:**

1. Loss of Coolant Accident, 2202.003, Rev 004-00-0, Section 1, Step 20.
2. Loss of Coolant Accident Tech Guidelines, 2202.003, Rev 004-00-0, Section 1, Step 20.
3. Containment Hydrogen Control Operations, 2104.044, Rev 025-02-0, Step 5.2.

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**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0206 **Rev:** 000 **Rev Date:** 2/4/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** Ap **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:****Section:** 3.4 **Type:** RCS Heat Remov **System Title:** Residual Heat Removal System**System Number** 005 **K/A:** K2.01 **RO Imp:** 3.0 **SRO Imp:** 3.2 **Tier:** 2 **Group:** 3**Description:** Knowledge of bus power supplies to the SDC pumps.

---

**Question:**

Given the following plant conditions:

- \* Mode 5 operation
- \* LPSI Pump 2P60A in service on Shutdown Cooling.
- \* RCS Pressure is 180 psia.
- \* #2EDG is Out Of Service for maintenance.
- \* Lockout occurs on 4160VAC ESF bus 2A3.
- \* Loss of Offsite Power (LOOP) occurs.

Which of the following actions should be performed for the given conditions to restore SDC flow?

- A. Place #1EDG on 2A4 and start LPSI Pump 2P60B.
  - B. Place AACDG on 2A4 and start LPSI Pump 2P60B.
  - C. Place AACDG on 2A4 and start Containment Spray Pump 2P35B.
  - D. Place AACDG on 2H1 and start Reactor Coolant Pump 2P32A.
- 

**Answer:**

- B. Place AACDG on 2A4 and start LPSI Pump 2P60B.
- 

**Notes:**

The #1EDG cannot be placed on 2A4 due to the lockout on 2A3. The Containment Spray pump cannot be started because RCS Pressure is greater than the suction relief setpoint. The AACDG cannot be placed on 2H-1 because of voltage limitations.

---

**References:**

1. Lower Mode Functional Recovery, 2202.011, Rev 001-01-0, MVAC-2, Step 2.E Contingency 4
  2. Shutdown Cooling System, 2104.004, Rev 027-00-0, Step 5.2.
- 

**Historical Comments:**



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**EXAM1***01-Mar-00*

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**QID:** 0207 **Rev:** 000 **Rev Date:** 2/4/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 2 **Taxonomy:** C **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.8, 10 **10CFR55\_43:** 45.3**Section:** 4.1 **Type:** Generic EOP **System Title:** Reactor Trip**System Number** 007 **K/A:** EK1.06 **RO Imp:** 3.7 **SRO Imp:** 4.1 **Tier:** 1 **Group:** 2**Description:** Knowledge of the operational implications of the relationship of emergency feedwater flow to SG and decay heat removal following a reactor trip.

---

**Question:**

Which of the following conditions meet safety function criteria to ensure an adequate heat sink for RCS Heat Removal in the Standard Post Trip Actions (SPTA)?

- A. SG levels > 70" and Tc stable or decreasing.
- B. SG levels > 150" and Tc stable or decreasing.
- C. SG levels > 70" and EFW flow > 500 gpm.
- D. SG levels > 150" and EFW flow > 400 gpm.

---

**Answer:**

- C. SG levels > 70" and EFW flow > 500 gpm.

---

**Notes:**

The SG levels must be greater than 70" or once through cooling must be initiated. Tc stable or decreasing will not satisfy heat removal but EFW flow must be > 485 gpm.

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**References:**

1. Standard Post Trip Actions, 2202.001, Rev 004-00-0, Step 8.A Contingency A.1
2. SPTA Tech Guidelines, 2202.001, Rev 004-00-0, Step 8

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**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0208 **Rev:** 000 **Rev Date:** 2/4/00 **RO Select:** Yes **SRO Select:** No **Points:** 1.00**Lic Level:** RS **Difficulty:** 4 **Taxonomy:** An **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.5 **10CFR55\_43:** 43.5**Section:** 3.2 **Type:** Plant System **System Title:** Chemical & Volume Control System**System Number** 004 **K/A:** A2.22 **RO Imp:** 3.2 **SRO Imp:** 3.1 **Tier:** 2 **Group:** 1**Description:** Ability to (a) predict the impacts of mismatch of letdown and charging flows on the CVCS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions.

---

**Question:**

Which of the following conditions will result in a Loss of Letdown System flow?

- A. Temperature of 150F leaving the Letdown Heat Exchanger.
  - B. VCT Outlet Valve (2CV-4873-1) fails closed.
  - C. Loss of Instrument Air to Letdown Rad Monitor Isolation Valve (2CV-4804).
  - D. Letdown flow of 120 gpm with only one charging pump running.
- 

**Answer:**

- B. VCT Outlet Valve (2CV-4873-1) fails closed.
- 

**Notes:**

With VCT outlet closed the CCP will trip on low suction pressure. This will cause Regenerative Heat Exchanger temperature to rise and isolate Letdown System by closing 2CV-4820-2 at 470F.

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**References:**

Chemical and Volume Control, 2104.002, Rev 038-00-0, Section 6.2

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**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0209 **Rev:** 000 **Rev Date:** 2/4/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** C **Source:** New **Originator:** Hatman**10CFR55\_41:**  **10CFR55\_43:** 43.5**Section:** 2.0 **Type:** Generic **System Title:** Emergency Procedures/Plan**System Number** 016 **K/A:** 2.4.48 **RO Imp:** 3.5 **SRO Imp:** 3.8 **Tier:** 2 **Group:** 2**Description:** Ability to interpret control room indications to verify the status of operation of system, and understand how operator actions and directives affect plant and system conditions.

---

**Question:**

The plant has just tripped from 100% power. What effect will a rise in containment temperature (i.e. from 80F to 250F) have on the Steam Generator Narrow Range level instruments?

- A. Actual level will be higher than indicated level due to voiding in the variable leg.
  - B. Actual level will be higher than indicated level due to reference leg temperature increase.
  - C. Indicated level will be higher than actual level due to voiding in the variable leg.
  - D. Indicated level will be higher than actual level due to reference leg temperature increase.
- 

**Answer:**

- D. Indicated level will be higher than actual level due to reference leg temperature increase.
- 

**Notes:**

Since the variable leg is at Containment temperature, then a rise in Containment temperature will reduce the density in the reference leg. A reduction in reference leg density will cause the d/p on the transmitter to go down resulting in indicated level reading higher than actual level.

---

**References:**

1. Functional Recovery Procedure, 2202.009, Rev 004-01-0, HR-1 Step 19.A
  2. EOP Setpoint Document, Calculation 90-E-00116-01, Page 5 Setpoints C.6, C.8
  3. ANO-S-LP-RO-CMP02, Sensors/Detectors, Page 32 of 191.
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**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0210 **Rev:** 000 **Rev Date:** 2/4/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 2 **Taxonomy:** K **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:** 45.7**Section:** 3.2 **Type:** Plant System **System Title:** Reactor Coolant System**System Number** 002 **K/A:** K6.02 **RO Imp:** 3.6 **SRO Imp:** 3.8 **Tier:** 2 **Group:** 2**Description:** Knowledge of the effect of an RCP start on RCS Components.

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**Question:**

Which of the following is the reason for NOT starting the fourth Reactor Coolant Pump (RCP) until Reactor Coolant System (RCS) temperature is greater than 500 degrees Fahrenheit?

- A. To prevent exceeding RCS heatup rate limits.
  - B. To prevent excessive RCP starting currents.
  - C. To prevent excessive Steam Generator stresses.
  - D. To prevent core uplift.
- 

**Answer:**

- D. To prevent core uplift.
- 

**Notes:**

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**References:**

1. STM 2-3-2, RCP & RCP Vibration Monitoring System, Rev 3, Section 1.8.1.2
  2. EOP Setpoint Document, Calculation 90-E-0116-01, Setpoint B.5, Page 43
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**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0211 **Rev:** 000 **Rev Date:** 2/4/00 **RO Select:** Yes **SRO Select:** No **Points:** 1.00**Lic Level:** R **Difficulty:** 2 **Taxonomy:** C **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.5 **10CFR55\_43:** 45.7**Section:** 3.1 **Type:** Plant Systems **System Title:** Chemical & Volume Control System**System Number** 004 **K/A:** K5.15 **RO Imp:** 3.3 **SRO Imp:** 3.5 **Tier:** 2 **Group:** 1**Description:** Knowledge of the operational implications of boron and control rod reactivity effects as they apply to the CVCS.

---

**Question:**

The plant is at 75% power when a new Letdown Demineralizer is placed in service. Which of the following will occur if the boron saturation of this demineralizer is incomplete?

- A. T-ave will increase.
- B. Reactor power will decrease.
- C. Lithium concentration will go up.
- D. Demineralizer resin channeling will occur.

---

**Answer:**

- A. T-ave will increase.

---

**Notes:**

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**References:**

1. Chemical and Volume Control, 2104.002, Rev 038-00-0, Section 5.0
2. STM 2-04, CVCS System, Rev 8, Section 2.1.15
3. STM 2-04, CVCS System, Section 3.1.1

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**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0212 **Rev:** 000 **Rev Date:** 2/4/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 4 **Taxonomy:** Ap **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:****Section:** 3.3 **Type:** Plant Systems **System Title:** Pressurizer Pressure Control System**System Number** 010 **K/A:** A4.02 **RO Imp:** 3.6 **SRO Imp:** 3.4 **Tier:** 2 **Group:** 2**Description:** Ability to manually operate and/or monitor in the control room Pzr heaters.

---

**Question:**

Given the following plant conditions:

- \* Plant trip occurred ten (10) minutes ago from full power.
- \* Pressurizer pressure is 2100 psia and slowly rising
- \* Pressurizer level lowered to 25% and is now 32% and rising.
- \* Both Steam Generator pressures are 1000 psia and steady.
- \* All systems are in automatic and have actuated as required.

Which of the following is the correct condition for the Pressurizer Heaters at this time?  
(ASSUME NO OPERATOR ACTION)

- A. Backup heaters are OFF and proportional heaters are ON.
  - B. Proportional heaters are OFF and backup heaters are ON.
  - C. All pressurizer heaters are ON.
  - D. All pressurizer heaters are OFF.
- 

**Answer:**

- B. Proportional heaters are OFF and backup heaters are ON.
- 

**Notes:**

The low level heater cutout occurs at 29% pressurizer level de-energizing all heaters. The backup heater will automatically restore when pressurizer level increases above 29%, but the proportional heaters must be manually restored. All heaters will receive a full on automatic signal when the breaker is closed due to a 100 psi deviation from setpoint.

---

**References:**

1. Pressurizer Operations, 2103.005, Rev 21-02-0, Section 3.0 & 6.5
  2. Pressurizer Pressure and Level Control STM, STM 2-3-1, Rev 2, Sections 2.2.4 & 2.2.5
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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0213 **Rev:** 000 **Rev Date:** 2/4/00 **RO Select:** No **SRO Select:** Yes **Points:** 1.00**Lic Level:** S **Difficulty:** 3 **Taxonomy:** An **Source:** New **Originator:** Hatman**10CFR55\_41:**  **10CFR55\_43:** 43.5**Section:** 4.2 **Type:** Generic AOP **System Title:** Loss of Offsite Power**System Number** 056 **K/A:** AA2.56 **RO Imp:** 3.6 **SRO Imp:** 3.7 **Tier:** 1 **Group:** 3**Description:** Ability to determine and interpret the affects on Tave as they apply to the Loss of Offsite Power.

---

**Question:**

Given the following plant conditions:

- \* Plant was operating at 100% power.
- \* A loss of 161 KV and the Auto Transformer has occurred.
- \* All systems functioned as designed.
- \* No operator actions have been taken.

How are the SGs maintaining RCS heat removal?

- A. EFW supplying SGs; steaming out Main Steam Safety Valves.
  - B. EFW supplying SGs; steaming through Moisture Separator Reheaters.
  - C. MFW supplying SGs; steaming out Main Steam Safety Valves.
  - D. MFW supplying SGs; steaming using the SDBCS.
- 

**Answer:**

- B. EFW supplying SGs; steaming through Moisture Separator Reheaters.
- 

**Notes:**

The power supply to 2CV-0400 and 2CV-0460 is from MCCs powered from 2A1 and 2A2 buses which are de-energized. These valves are open at 100% power and since they are still open main steam will have a flow path to the condenser through the drain tanks and the tank dump valves to the condenser.

---

**References:**

1. Standard Post Trip Actions, 2202.001, Rev 004-00-0, Step 8.E
  2. Loss of Offsite Power, 2202.007, Rev 004-00-0, Step 5.A.
  3. Loss of Offsite Power Tech Guide, 2202.007, Rev 004-00-0, Step 5.
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**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0214 **Rev:** 000 **Rev Date:** 2/4/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 2 **Taxonomy:** K **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:****Section:** 3.6 **Type:** Plant Systems **System Title:** Emergency Diesel Generator**System Number** 064 **K/A:** K4.02 **RO Imp:** 3.9 **SRO Imp:** 4.2 **Tier:** 2 **Group:** 2**Description:** Knowledge of EDG system design feature(s) and/or interlock(s) which provide trips for EDG while operating (normal or emergency).

---

**Question:**

Plant conditions are as follows:

- \* A Loss of Offsite Power has occurred.
- \* Pressurizer pressure is 1430 psia.
- \* #1 Emergency Diesel Generator (#1EDG) has just tripped.

Which of the following trips caused the Loss of #1EDG?

- A. High crankcase pressure.
- B. High jacket water cooling temperature.
- C. Loss of excitation.
- D. Generator phase differential current.

---

**Answer:**

- D. Generator phase differential current.

---

**Notes:**

SIAS actuates at 1717.4 psia. SIAS bypasses the EDG Loss of Excitation trip. High crankcase pressure may cause engine damage but will not trip the EDG. High Jacket Water Temperature is an alarm function only.

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**References:**

1. Emergency Diesel Generator Operations, 2104.036, Rev 043-00-0, Section 3.0.

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**Historical Comments:**



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**EXAM1***01-Mar-00*

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**QID:** 0215 **Rev:** 000 **Rev Date:** 2/4/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** K **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.5 **10CFR55\_43:****Section:** 3.8 **Type:** Plant Systems **System Title:** Fire Protection System**System Number** 086 **K/A:** K5.03 **RO Imp:** 3.1 **SRO Imp:** 3.4 **Tier:** 2 **Group:** 2**Description:** Knowledge of the operational implication of the effects of water spray on electrical components as they apply to the Fire Protection System

---

**Question:**

A fire has been detected in the Unit 2 Containment Building. As the Fire Brigade Leader working with the Fire Department, you are asked what type of automatic water suppression system is used in the immediate vicinity of the Containment Upper and Lower South Cable Spreading Areas.

Which of the following is the correct response?

- A. A deluge water spray sprinkler.
  - B. A wet pipe sprinkler.
  - C. Automatic pre-action sprinkler.
  - D. No suppression system is located in the area.
- 

**Answer:**

- C. Automatic pre-action sprinkler.
- 

**Notes:**

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**References:**

1. Annunciator 2K11 Corrective Action, 2203.012K, Rev 029-00-0, 2K11-B9.
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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0216 **Rev:** 000 **Rev Date:** 2/4/00 **RO Select:** No **SRO Select:** Yes **Points:** 1.00**Lic Level:** S **Difficulty:** 2 **Taxonomy:** K **Source:** New **Originator:** Hatman**10CFR55\_41:**  **10CFR55\_43:** 43.2**Section:** 2.2 **Type:** Generic **System Title:** Equipment Control**System Number**  **K/A:** 2.2.25 **RO Imp:** 2.5 **SRO Imp:** 3.7 **Tier:** 3 **Group:** 1**Description:** Knowledge of bases in technical specifications for limiting conditions for operations and safety limits.

---

**Question:**

Which of the following Reactor Protection System (RPS) Trips is for equipment protection only?

- A. Pressurizer Pressure Low.
- B. Pressurizer Pressure High.
- C. Steam Generator Level Low.
- D. Steam Generator Level High.

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**Answer:**

- D. Steam Generator Level High.

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**Notes:**

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**References:**

Technical Specification Bases, Page B 2-7.

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**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0217 **Rev:** 001 **Rev Date:** 2/6/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 4 **Taxonomy:** An **Source:** New **Originator:** Hatman**10CFR55\_41:**  **10CFR55\_43:** 43.5**Section:** 2.0 **Type:** Generic K/A **System Title:** Reactor Coolant System**System Number** 002 **K/A:** 2.1.7 **RO Imp:** 3.7 **SRO Imp:** 4.4 **Tier:** 2 **Group:** 2**Description:** Ability to evaluate plant performance and make operational judgements based on operating characteristics, reactor behavior, and instrument interpretation.

---

**Question:**

A plant downpower is in progress with the following conditions:

- \* Tref is 565F and dropping.
- \* Tave is 570F and steady.
- \* Boration is in progress at 20 gpm.
- \* Main turbine is being unloaded at 30 MW/min.

Select the following statement which is true regarding this downpower:

- A. Turbine unloading rate is excessive for the boration rate, as evidenced by the steady Tave indication.
- B. Turbine unloading rate is excessive for the boration rate, as evidenced by the dropping Tref indication.
- C. Boration rate is excessive for the turbine load rate, as evidenced by the dropping Tref indication.
- D. Boration rate is excessive for the turbine load rate, as evidenced by the steady Tave indication.

---

**Answer:**

- A. Turbine unloading rate is excessive for the boration rate, as evidenced by the steady Tave indication.

---

**Notes:**

Tref is the 1st stage pressure correlated to Tave so if Tref is below Tave then turbine power is lower than Reactor power. This means turbine unloading rate reduction was excessive.

---

**References:**

2102.004, Power Operation, Rev 026-04-0, Step 11.7 and Form 2102.004C

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**Historical Comments:**

Rev 001 - 02/06/00 - Changed "turbine loading" rate to "turbine unloading" rate on selection A & B per comments from exam reviewers.

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**EXAM1***01-Mar-00*

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**QID:** 0218 **Rev:** 000 **Rev Date:** 2/6/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** Ap **Source:** New **Originator:** Hatman**10CFR55\_41:** 4.17 **10CFR55\_43:****Section:** 3.1 **Type:** Reactivity Contro **System Title:** Rod Position Indication System**System Number** 014 **K/A:** K4.06 **RO Imp:** 3.4 **SRO Imp:** 3.7 **Tier:** 2 **Group:** 2**Description:** Knowledge of RPIS design feature(s) and/or interlock(s) which provide for individual and group misalignment.

---

**Question:**

You are withdrawing Reg Group 6 CEAs when one CEA in the group stops moving while the rest continue to withdraw. Which of the following conditions will prevent any further group withdrawal when reached?

- A. 4.9 inch misalignment detected by CPC target CEAs.
- B. 5.0 inch misalignment detected by CEACs.
- C. When CPC Target CEA generates a CWP.
- D. When PMS pulse counter generates a CWP.

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**Answer:**

- B. 5.0 inch misalignment detected by CEACs.

---

**Notes:**

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**References:**

1. 2203.012J, Annunciator 2K10 Corrective Actions, Rev 027-04-0, 2K10-B1.
2. STM 2-02, CEDMCS, Rev 5 Chg 1, Section 8.2
3. STM 2-065-1, Core Protection Calculator System, Rev 6, Section 2.5.

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0219 **Rev:** 000 **Rev Date:** 2/6/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** Ap **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.2 to 41.9 **10CFR55\_43:** **Section:** 3.8 **Type:** Plant Service Syst **System Title:** Containment Purge System**System Number** 029 **K/A:** K1.03 **RO Imp:** 3.6 **SRO Imp:** 3.8 **Tier:** 2 **Group:** 2**Description:** Knowledge of the physical connections and/or cause-effect relationship between the Containment Purge System and Engineered Safeguards.

---

**Question:**

Containment Purge will be automatically secured on all of the following EXCEPT:

- A. Hi-Hi alarm signal on Radwaste Area Disch 2VEF-8A/B Process Rad Monitor 2RITS-8542.
- B. Hi-Hi alarm signal on Containment Purge Disch 2VEF-15 Process Rad Monitor 2RITS-8233.
- C. Hi Containment Pressure of 18.3 psia.
- D. Pressurizer Pressure of 420 psia and variable setpoint of 450 psia.

---

**Answer:**

- A. Hi-Hi alarm signal on Radwaste Area Disch 2VEF-8A/B Process Rad Monitor 2RITS-8542.

---

**Notes:**

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**References:**

- 1. STM 2-9, Containment Cooling and Pugre Systems, Rev 3, Sections 7.3, 7.5, 7.6.
- 2. STM 2-62, Radiation Monitoring System, Rev 4, Sections 2.2.7.2, 2.2.7.3

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**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0220 **Rev:** 000 **Rev Date:** 2/6/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** An **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.5 **10CFR55\_43:****Section:** 3.4 **Type:** RCS Heat Remov **System Title:** Main and Reheat Steam System**System Number** 039 **K/A:** K5.08 **RO Imp:** 3.6 **SRO Imp:** 3.6 **Tier:** 2 **Group:** 2**Description:** Knowledge of the operational implications and effects of steam removal on reactivity as it applies to the Main and Reheat Steam System.

---

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**Question:**

The plant is operating at 100% when the CBOR notices Tcold dropping and Reactor Power rising. Which of the following would give these indications?

- A. Atmospheric Dump Valve 2CV-1001 failed open.
  - B. EH supply to the Main Turbine #4 control valve is blocked.
  - C. Emergency Feedwater Pump 2P-7A tripped on overspeed.
  - D. Atmospheric Dump Valve 2CV-0305 failed open.
- 

**Answer:**

- D. Atmospheric Dump Valve 2CV-0305 failed open.
- 

**Notes:**

2CV-1001 has a normally closed MOV isolation so a failure of this valve would have no consequences as long as IA is available. EH loss to #4 Control Valve would cause power to decrease. 2P7A trip would cause Tc to rise

---

**References:**

- 1. STM 2-15, Steam Generators & Main Steam System, Rev 4, Sections 3.5, 3.11
  - 2. STM 2-23, SDBCS, Rev 4, Section 4.0
- 

**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0221 **Rev:** 000 **Rev Date:** 2/6/00 **RO Select:** Yes **SRO Select:** No **Points:** 1.00**Lic Level:** R **Difficulty:** 3 **Taxonomy:** Ap **Source:** New **Originator:** Hatman**10CFR55\_41:**  **10CFR55\_43:** 43.5**Section:** 4.1 **Type:** Generic EOP **System Title:** Small Break LOCA**System Number** 009 **K/A:** EA2.33 **RO Imp:** 3.3 **SRO Imp:** 3.8 **Tier:** 1 **Group:** 2**Description:** Ability to determine or interpret RCS water inventory balance and Tech Spec limits as they apply to a small break LOCA.

---

---

**Question:**

Given the following plant conditions:

- \* Loop II CCW Surge Tank Level increased from 40% to 55% in 10 minutes.
- \* Pressurizer Level is 60% and stable.
- \* VCT level decreased from 77% to 73% in 10 minutes.

What is the Reactor Coolant System Leakage Rate for these conditions?

- A. 4 GPM.
  - B. 14 GPM.
  - C. 44 GPM.
  - D. 64 GPM.
- 

**Answer:**

- B. 14 GPM.
- 

**Notes:**

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**References:**OP 2305.002, RCS Leak Detection, Rev 012-01-0, Exhibit 1

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**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0222 **Rev:** 000 **Rev Date:** 2/6/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 2 **Taxonomy:** K **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:****Section:** 3.6 **Type:** Plant Systems **System Title:** D.C. Electrical Distribution**System Number** 063 **K/A:** K3.02 **RO Imp:** 3.5 **SRO Imp:** 3.7 **Tier:** 2 **Group:** 2**Description:** Knowledge of the effect that a loss or malfunction of the DC electrical system will have on components using DC control power.

---

---

**Question:**

Which of the following set of Reactor Trip Circuit Breakers will open as a direct result of de-energizing 2D35 Battery Eliminator?

- A. Breakers 2 and 6.
  - B. Breakers 4 and 8.
  - C. Breakers 3 and 7.
  - D. Breakers 1 and 5.
- 

**Answer:**

- C. Breakers 3 and 7.
- 

**Notes:**

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**References:**

1. STM 2-32-5, 125 VDC Electrical Distribution, Rev 3 Section 2.3.2
  2. STM 2-02, CEDMCS, Rev 5 Chg 1, Section 5.3.1.
- 

**Historical Comments:**



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**EXAM1**01-Mar-00

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**QID:** 0223 **Rev:** 000 **Rev Date:** 2/6/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** C **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.10 **10CFR55\_43:** 43.2**Section:** 2.4 **Type:** Generic K/A **System Title:** Emergency Procedures/Plan**System Number**  **K/A:** 2.4.4 **RO Imp:** 4.0 **SRO Imp:** 4.3 **Tier:** 3 **Group:** 4**Description:** Ability to recognize abnormal indications for system operating parameters which are entry-level conditions for emergency and abnormal operating procedures.

---

**Question:**

Given the following plant conditions:

- \* 2203.016, Excess RCS Leakage procedure has been entered due to excessive RCS leakage.
- \* RCS Tave is 573F and steady.
- \* Charging Pump 2P36C is Out of Service.
- \* Charging Pumps 2P36A and 2P36B are running.
- \* Letdown is secured to determine location of RCS Leak.
- \* RCS Leakage is calculated to be 90 gpm.

Which of the following is the appropriate action to be performed in accordance with 2203.016?

- A. Maintain RCS conditions stable to prevent loss of pressurizer level while attempting to locate the leak.
  - B. Commence a normal plant shutdown and be in Mode 3 within six (6) hours.
  - C. Commence a rapid plant shutdown and be in Mode 3 within one (1) hour.
  - D. Perform a manual reactor trip and go to 2202.001, Standard Post Trip Actions
- 

**Answer:**

- D. Perform a manual reactor trip and go to 2202.001, Standard Post Trip Actions
- 

**Notes:**

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**References:**2203.016, Excess RCS Leakage, Rev 008-03-0, Step 4.0

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0224 **Rev:** 000 **Rev Date:** 2/6/00 **RO Select:** No **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** Ap **Source:** New **Originator:** Hatman**10CFR55\_41:**  **10CFR55\_43:** 43.5**Section:** 4.1 **Type:** Generic EOP **System Title:** Steam Generator Tube Rupture**System Number** 038 **K/A:** EA2.02 **RO Imp:** 4.5 **SRO Imp:** 4.8 **Tier:** 1 **Group:** 2**Description:** Ability to determine or interpret the existence of a SG Tube Rupture and its potential consequences.

---

**Question:**

After a Reactor Trip the following parameter values and trends are noted:

- \* Pressurizer Level is 0%.
- \* RCS Pressure is 1500 psia and lowering.
- \* RCS Tcold is 530F and slowly trending down.
- \* Containment pressure is 14.3 psia and steady.
- \* Containment Average Temperature is 105F and lowering.
- \* Main Steam Line Radiation Monitor 2RITS-1007 is in alarm and trending up.
- \* "A" Steam Generator Level is 20% and dropping slowly.
- \* "B" Steam Generator Level is 5% and dropping slowly.

Assuming that all other equipment responded as designed, determine the events in progress.

- A. Main Steam Line Break and Loss of Coolant Accident inside Containment.
  - B. Main Steam Line Break outside Containment and isolated LOCA in Letdown.
  - C. Steam Generator Tube Rupture and isolated LOCA in the Letdown System.
  - D. Main Steam Line Break outside Containment and Steam Generator Tube Rupture.
- 

**Answer:**

- D. Main Steam Line Break outside Containment and Steam Generator Tube Rupture.
- 

**Notes:**

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**References:**

2202.001, Standard Post Trip Action, Rev 004-00-0, Diagnostic Actions

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0225 **Rev:** 000 **Rev Date:** 2/6/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 4 **Taxonomy:** Ap **Source:** New **Originator:** Hatman**10CFR55\_41:**  **10CFR55\_43:** 43.5**Section:** 4.2 **Type:** Generic AOP **System Title:** Loss of DC Power**System Number** 058 **K/A:** AA2.03 **RO Imp:** 3.5 **SRO Imp:** 3.9 **Tier:** 1 **Group:** 2**Description:** Ability to determine and interpret DC loads lost; impact on ability to operate and monitor plant systems as they apply to Loss of DC Power.

---

**Question:**

Given the following plant conditions:

- \* 480 VAC ESF Bus 2B5 overcurrent trip.
- \* Loss of Offsite Power (LOOP).
- \* Loss of DC Bus 2D02.

Which of the following actions should be performed for the given conditions?

- A. Tie AACG to 4160 VAC Bus 2A1 and feed SGs with Auxiliary Feedwater Pump 2P75.
- B. Tie AACG to 4160 VAC Bus 2A1 and feed SGs with Main Feedwater Pumps.
- C. Cross-tie 4160 VAC ESF Bus 2A3 to 2A4 and feed with Emergency Feedwater Pump 2P7A.
- D. Cross-tie 4160 VAC ESF Bus 2A3 to 2A4 and feed with Emergency Feedwater Pump 2P7B.

---

**Answer:**

- A. Tie AACG to 4160 VAC Bus 2A1 and feed SGs with Auxiliary Feedwater Pump 2P75.

---

**Notes:**

2P7B can be started, but the MOVs do not have power. 2P7A can be started, but will overspeed since 2D02 is control power for governor and will fail to full open position. Main feedwater can be used but it is not the first EOP option.

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**References:**

2202.006, Loss of Feedwater AOP, Rev 004-00-0, Steps 11, 12 & 13.

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0226 **Rev:** 001 **Rev Date:** 2/6/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 4 **Taxonomy:** C **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.5, 41.10 **10CFR55\_43:****Section:** 4.2 **Type:** Generic AOP **System Title:** High Reactor Coolant Activity**System Number** 076 **K/A:** AK3.06 **RO Imp:** 3.2 **SRO Imp:** 3.8 **Tier:** 1 **Group:** 1**Description:** Knowledge of the actions contained in EOP for high reactor coolant activity.

---

**Question:**

Given the following plant conditions:

- \* Full Power Opeations.
- \* RCS Gross Activity is 3.3 microcuries/gram.
- \* RCS Iodine Activity is 12 microcuries/gram.
- \* Auxiliary Building Area Radiation Monitors are reading 0.4 R/Hr.
- \* Letdown System is isolated.

Which of the following actions should be performed for the given conditions?

- A. Immediately trip the Reactor.
  - B. Restore Letdown System to service and place demineralizers in service.
  - C. Secure all Reactor Coolant Pumps.
  - D. Isolate Controlled Bleedoff from RCPs.
- 

**Answer:**

- D. Isolate Controlled Bleedoff from RCPs.
- 

**Notes:**

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**References:**

2203.020, High Activity In RCS, Rev 007, Step 8.F

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**Historical Comments:**

Rev 001 - 02/06/00 - Added "Full Power Operations" to stem to address comments made by exam reviewers.

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**EXAM1**01-Mar-00

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**QID:** 0227 **Rev:** 000 **Rev Date:** 2/6/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** C **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.8, 41.10 **10CFR55\_43:** **Section:** 4.1 **Type:** Generic EOP **System Title:** Inadequate Core Cooling**System Number** 074 **K/A:** EK1.02 **RO Imp:** 4.6 **SRO Imp:** 4.8 **Tier:** 1 **Group:** 1**Description:** Knowledge of the operational implications and potential consequences of uncovering the core as they apply to Inadequate Core Cooling.

---

**Question:**

The following plant conditions exist:

- \* Large Loss of Coolant Accident has occurred.
- \* All Reactor Coolant Pumps are secured.
- \* No Safety Injection Flow is available.
- \* Reactor Coolant in the core region is at saturated conditions.

SELECT the expected response of the Excore Nuclear Instrumentation System Startup Channels as the coolant in the core region is initially boiled off.

- A. As level in the core drops the level in the down comer drops causing count rate to rise.
- B. As level in the core drops the level in the down comer rises causing count rate to lower.
- C. As level in the core drops there are fewer neutron generated causing count rate to lower.
- D. As level in the core drops there are more neutrons generated causing count rate to rise.

---

**Answer:**

- A. As level in the core drops the level in the down comer drops causing count rate to rise.

---

**Notes:**

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**References:**

TUOI AA51006-009, Source Range Monitor Response to Degraded Core Conditions, Rev 001.

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0228 **Rev:** 000 **Rev Date:** 2/6/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 2 **Taxonomy:** K **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.5, 4.10 **10CFR55\_43:** **Section:** 4.1 **Type:** Generic AOP **System Title:** Loss of Component Cooling Water (CCW)**System Number** 026 **K/A:** AK3.03 **RO Imp:** 4.0 **SRO Imp:** 4.2 **Tier:** 1 **Group:** 1**Description:** Knowledge of the reasons for guidance actions contained in EOPs for Loss of CCW.

---

**Question:**

Procedure 2202.007, Loss of Offsite Power, directs the operator to verify Component Cooling Water (CCW) isolated to Containment. What is the reason for this action?

- A. To prevent thermal shocking the CEDM Coolers upon restart of the CCW Pumps.
  - B. To prevent water hammer in Containment Building piping upon restart of CCW Pumps.
  - C. To prevent thermal shocking the RCPs upon restart of CCW Pumps.
  - D. To prevent runout of the CCW Pumps upon restart.
- 

**Answer:**

- C. To prevent thermal shocking the RCPs upon restart of CCW Pumps.
- 

**Notes:**

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**References:**

1. 2202.007, Loss of Offsite Power, Rev 004-00-0, Step 25
  2. 2202.007, Loss of Offsite Power Tech Guidelines, Rev 004-00-0, Step 25.
  3. 2202.010, Standard Attachment 21, Restoration of CCW to RCPs, Rev 005-01-0.
- 

**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0229 **Rev:** 001 **Rev Date:** 2/6/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** Ap **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:****Section:** 4.4 **Type:** CE Generic AOP **System Title:** RCS Overcooling**System Number** A11 **K/A:** AK2.2 **RO Imp:** 3.2 **SRO Imp:** 3.4 **Tier:** 1 **Group:** 1**Description:** Knowledge of the interrelations between RCS Overcooling and facility's heat removal systems, including primary coolant, emergency coolant, the decay heat removal systems, and relations between the proper operation of these systems to the operation of the facility.

---

**Question:**

Plant conditions are as follows:

- \* RCS Pressure is 1100 psia and slowly lowering.
- \* CET Temperature is 465 degrees F and slowly lowering.
- \* Pressurizer Level is 0%.
- \* SG "A" pressure is 375 psia and level is 70 inches Wide Range.
- \* SG "B" pressure is 725 psia and level is 240 inches Wide Range.
- \* Containment Temperature is 200 degrees F.
- \* Containment Pressure is 27.5 psia.

Which of the following describes the correct actions for this event?

- A. When RCS pressure starts to increase, stabilize pressure by using Main or Aux Spray.
  - B. When CET temperature starts to rise, fully open SDBCS valve 2CV-0303.
  - C. Manually initiate EFAS to "A" SG and commence feeding in manual to restore level.
  - D. Open Aux Spray valve to lower RCS pressure and maximize HPSI flow to restore Pzr level.
- 

**Answer:**

- A. When RCS pressure starts to increase, stabilize pressure by using Main or Aux Spray.
- 

**Notes:**

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**References:**

1. 2202.005, Excess Steam Demand, Rev 004-00-0, Step 18.0
  2. 2202.010, Standard Attachments, Rev 005-00-0, Attachment 27.
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**Historical Comments:**

Rev 001 - 02/06/00 - Changed answer "A" from "using Pzr spray" to "using Main or Aux Spray" per comments from exam reviewers.

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**EXAM1***01-Mar-00*

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**QID:** 0230 **Rev:** 000 **Rev Date:** 2/6/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** Ap **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:****Section:** 24.2 **Type:** Generic APE **System Title:** Pressurizer Pressure Control System Malfunct**System Number** 027 **K/A:** 2.4.2 **RO Imp:** 3.9 **SRO Imp:** 4.1 **Tier:** 1 **Group:** 1**Description:** Knowledge of system setpoints, interlocks, and automatic actions associated with EOP entry conditions.

---

**Question:**

The plant is at 100% power when the output of the inservice Pressurizer Pressure controller, 2PIC-4826-A fails high. Which response describes why the reactor trips if no operator action is taken?

- A. Low pressure trip from the Core Protection Calculators (CPCs).
- B. Low pressure trip from the Plant Protection System (PPS).
- C. High pressure trip from the Core Protection Calculators (CPCs).
- D. High pressure trip from the Plant Protection System (PPS).

---

**Answer:**

- A. Low pressure trip from the Core Protection Calculators (CPCs).

---

**Notes:**

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**References:**

1. 2105.001, CPC/CEAC Operations, Rev 023-01-0, Step 6.1.4
2. STM 2-3-1, Pressurizer Pressure and Level Control, Rev 2 Chg 1, Sections 2.2.6
3. STM 2-65-1, Core Protection Calculator System, Rev 6, Section 2.10.5
4. Unit 2 Technical Specifications, Table 3.3-4, Amendment 138

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**Historical Comments:**



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**EXAM1***01-Mar-00*

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**QID:** 0231 **Rev:** 000 **Rev Date:** 2/6/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 4 **Taxonomy:** An **Source:** New **Originator:** Hatman**10CFR55\_41:**  **10CFR55\_43:** 43.5**Section:** 4.2 **Type:** Generic APE **System Title:** Emergency Boration**System Number** 024 **K/A:** AA2.01 **RO Imp:** 3.8 **SRO Imp:** 4.1 **Tier:** 1 **Group:** 1**Description:** Ability to determine and interpret whether boron flow and/or MOVs are malfunctioning from plant conditions as it applies to Emergency Boration.

---

**Question:**

The reactor has just tripped due to a Loss of 4160V ESF Bus 2A4. As the CBOR what are your required actions when you notice two (2) CEAs stuck out?

- A. Commence emergency boration via gravity feed valves.
- B. Commence emergency boration using Boric Acid Makeup Pump 2P39A and emergency boration valve.
- C. Commence emergency boration using Boric Acid Makeup Pump 2P39B and emergency boration valve.
- D. Commence emergency boration via RWT Outlet valve.

---

**Answer:**

- A. Commence emergency boration via gravity feed valves.

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**Notes:**

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**References:**

2202.010, Standard Attachments, Exhibit 1, Emergency Boration, Rev 005-01-0.

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**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0232 **Rev:** 000 **Rev Date:** 2/6/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** Ap **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:****Section:** 4.2 **Type:** Generic APE **System Title:** Control Room Evacuation**System Number** 068 **K/A:** K2.02 **RO Imp:** 3.7 **SRO Imp:** 3.9 **Tier:** 1 **Group:** 1**Description:** Knowledge of the interrelations between the Control Room Evacuation and Reactor trip system.

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---

**Question:**

A disgruntled and armed Security Guard enters the Unit 2 Control Room and directs all operations personnel to leave. Which of the following describes the method of reactivity control which should be employed?

- A. Auxiliary Operator will open Load Center 2B7 and 2B8 feeder breakers.
  - B. Waste Control Operator will open the MG Set output breakers locally.
  - C. CBOR will open Reactor Trip Circuit Breakers 1 through 8 locally.
  - D. CBOT will commence emergency boration locally.
- 

**Answer:**

- C. CBOR will open Reactor Trip Circuit Breakers 1 through 8 locally.
- 

**Notes:**

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**References:**

2203.030, Remote Shutdown Section 4, Rev 006-04-0.

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**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0233 **Rev:** 000 **Rev Date:** 2/6/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 4 **Taxonomy:** An **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.10 **10CFR55\_43:****Section:** 2.1 **Type:** Generic K/A **System Title:** Conduct Of Operations**System Number** **K/A:** 2.1.1 **RO Imp:** 3.7 **SRO Imp:** 3.8 **Tier:** 3 **Group:** 1**Description:** Knowledge of conduct of operations requirements.

---

**Question:**

Given the following plant conditions:

- \* Full power operation.
- \* Shutdown Bank B CEA 002 indicates 117 inches withdrawn.
- \* Shutdown Bank B CEA 017 indicates 123 inches withdrawn.
- \* I & C Maintenance in progress in CEDMCS Room.

Which of the following actions should be performed for the given conditions?

- A. Notify I & C to stop maintenance.
  - B. Trip the Reactor.
  - C. Notify the CRS to enter procedure 2203.003, CEA malfunction AOP.
  - D. Notify the SS to enter Tech Spec 3.1.3.1.e for misaligned CEA.
- 

**Answer:**

- B. Trip the Reactor.
- 

**Notes:**

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**References:**

1. 1015.001, Conduct of Operations, Rev 051-03-1, Step 6.4.3
  2. 2203.003, CEA Malfunction, Rev 014-01-0, Step 4.A
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**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0234 **Rev:** 001 **Rev Date:** 2/6/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 2 **Taxonomy:** K **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.8, 4.10 **10CFR55\_43:** **Section:** 4.2 **Type:** Generic APE **System Title:** Plant Fire On Site**System Number** 067 **K/A:** K1.02 **RO Imp:** 3.1 **SRO Imp:** 3.9 **Tier:** 1 **Group:** 1**Description:** Knowledge of the operational implications of fire fighting as they apply to Plant Fire on Site.

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---

**Question:**

The following plant conditions exist:

- \* A plane has crashed in the switchyard.
- \* Large fire exists.

Which of the following groups should be requested of assistance for the given conditions?

- A. London Fire Department.
  - B. Russellville Fire Department.
  - C. Federal Aviation Administration.
  - D. Little Rock Air Force Base.
- 

**Answer:**

- A. London Fire Department.
- 

**Notes:**

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**References:**

2203.034, Fire or Explosion, Rev 005-01-0, Step 15.0

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**Historical Comments:**

Rev 001 - 02-06-00 - Deleted "inextinguishable" from the stem of the question due to comments from exam reviewers.

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**EXAM1**01-Mar-00

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**QID:** 0235 **Rev:** 000 **Rev Date:** 2/6/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** C **Source:** New **Originator:** Hatman**10CFR55\_41:**  **10CFR55\_43:** **Section:** 2.2 **Type:** Generic K/A **System Title:** Equipment Control**System Number**  **K/A:** 2.2.30 **RO Imp:** 3.5 **SRO Imp:** 3.3 **Tier:** 3 **Group:** 2**Description:** Knowledge of RO duties in the control room during fuel handling such as alarms for fuel handling area, communication with fuel storage facility, systems operated from the control room in support of fueling operations and supporting instrumentation.

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**Question:**

Given the following plant conditions:

- \* Mode 6
- \* Core offload in progress.
- \* Annunciator 2K13-B8 , Fuel Handling Area Exhaust Fan Air Flow Lo actuates.
- \* Fuel Handling Exhaust Fan 2VEF-14A has tripped.

Which of the following should be performed for the given conditions?

- A. Start 2VSF-4, Spent Fuel Pool Supply Fan.
- B. Start 2VEF-15, Containment Purge Exhaust Fan.
- C. Start 2VEF-14B, Spent Fuel Pool Area Exhaust Fan.
- D. Start 2VSF-2, Containment Purge Supply Fan.

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**Answer:**

- C. Start 2VEF-14B, Spent Fuel Pool Area Exhaust Fan.

---

**Notes:**

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**References:**

1. Unit 2 Technical Specification 3.9.11, Fuel Handling Area Ventilation, Amendment 134.
2. 2203.012M, Annunciator 2K13 Corrective Action, Rev 013-01-0, 2K13-B8.
3. STM 2-47-1, Auxiliary Building Ventilation, Rev 2, Sections 2.1.1 & 2.1.2.

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0236 **Rev:** 000 **Rev Date:** 2/6/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 2 **Taxonomy:** K **Source:** New **Originator:** Hatman**10CFR55\_41:**  **10CFR55\_43:** 43.4**Section:** 2.3 **Type:** Generic K/A **System Title:** Radiation Control**System Number**  **K/A:** 2.3.10 **RO Imp:** 2.9 **SRO Imp:** 3.3 **Tier:** 3 **Group:** 3**Description:** Ability to perform procedures to reduce excessive levels of radiation and guard against personnel exposure.

---

**Question:**

Which of the following areas must be radiologically surveyed PRIOR to entry?

- A. Charging Pump Rooms.
- B. Containment Building.
- C. ESF Rooms on Elevation 317' of Auxiliary Building.
- D. Overhead (> 8 feet) of hallway on Elevation 335' of Auxiliary Building .

---

**Answer:**

- D. Overhead (> 8 feet) of hallway on Elevation 335' of Auxiliary Building .

---

**Notes:**

The Charging Pump and ESF rooms are normal areas for entry on a routine basis and are surveyed on a weekly basis. The containment building will be surveyed during the entry since it is a locked high radiation area and requires HP coverage. The overhead is not normally surveyed and so is an unknown quantity.

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**References:**

Radworker Practices Guidelines, Guideline No. 17, Working in Overhead Areas of Controlled Access.

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**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0237 **Rev:** 001 **Rev Date:** 2/6/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 2 **Taxonomy:** C **Source:** New **Originator:** Hatman**10CFR55\_41:**  **10CFR55\_43:** 43.5**Section:** 2.4 **Type:** Generic K/A **System Title:** Emergency Procedures/Plan**System Number**  **K/A:** 2.4.48 **RO Imp:** 3.5 **SRO Imp:** 3.8 **Tier:** 3 **Group:** 4**Description:** Ability to interpret control room indications to verify the status and operation of system, and understand how operator actions and directives affect plant and system conditions.

---

**Question:**

Volume Control Tank (VCT) Level Transmitter 2LT-4857 on 2C09 fails low. Select the effect of this failure on the Chemical and Volume Control System (CVCS)?

- A. A continuous automatic makeup demand signal would be present; high and low level alarms are disabled.
  - B. Automatic diversion of the VCT inlet valve on high level is disabled; Charging pump suction automatically aligns to the RWT and the VCT suction path isolates.
  - C. A continuous automatic makeup demand signal would be present; Charging pump suction automatically aligns to the Boric Acid Makeup Tanks and the VCT suction path isolates.
  - D. Automatic diversion of the VCT inlet valve on high level is disabled; high and low level alarms are disabled.
- 

**Answer:**

- A. A continuous automatic makeup demand signal would be present; high and low level alarms are disabled.
- 

**Notes:**

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**References:**

1. STM 2-04, Chemical and Volume Control System, Rev 8, Section 2.1.21.1
- 

**Historical Comments:**

Rev 001 - 02/06/00 - Added "on 2C09" to the question stem and changed answer from "B" to "A" per STM reference.

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**EXAM1***01-Mar-00*

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**QID:** 0238 **Rev:** 000 **Rev Date:** 2/6/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 2 **Taxonomy:** K **Source:** New **Originator:** Hatman**10CFR55\_41:**  **10CFR55\_43:** 43.4**Section:** 2.3 **Type:** Generic K/A **System Title:** Radiation Control**System Number**  **K/A:** 2.3.10 **RO Imp:** 2.9 **SRO Imp:** 3.3 **Tier:** 3 **Group:** 3**Description:** Ability to perform procedures to reduce excessive levels of radiation and guard against personnel exposure.

---

---

**Question:**

Which of the following should be removed first when wearing single Anti-C's and exiting a "Contamination Area"?

- A. Dosimetry.
- B. Rubber Gloves.
- C. Rubber Shoes.
- D. Hood.

---

**Answer:**

- C. Rubber Shoes.

---

**Notes:**

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**References:**

Radworker Practices Guidelines, Guideline No. 5

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**Historical Comments:**



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**EXAM1***01-Mar-00*

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**QID:**  **Rev:**  **Rev Date:**  **RO Select:**  **SRO Select:**  **Points:** **Lic Level:**  **Difficulty:**  **Taxonomy:**  **Source:**  **Originator:** **10CFR55\_41:**  **10CFR55\_43:** **Section:**  **Type:**  **System Title:** **System Number**  **K/A:**  **RO Imp:**  **SRO Imp:**  **Tier:**  **Group:** **Description:** 

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---

**Question:**

On a routine tour of Containment during an outage, you observe mechanics loitering next to the Reactor Drain Tank. You direct them to wait in a low dose area. Which of the following colored signs depicts the correct area?

- A. Blue.
- B. Green.
- C. Orange.
- D. White.

---

**Answer:**

- B. Green.
- 

**Notes:**

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**References:**

Radworker Practices Guidelines, Guideline No. 21, ALARA Guidelines for Rad Workers.

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0240 **Rev:** 000 **Rev Date:** 2/6/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** Ap **Source:** New **Originator:** Hatman**10CFR55\_41:**  **10CFR55\_43:** 43.4**Section:** 2.3 **Type:** Generic K/A **System Title:** Radiation Control**System Number**  **K/A:** 2.3.9 **RO Imp:** 2.5 **SRO Imp:** 3.4 **Tier:** 3 **Group:** 3**Description:** Knowledge of the process for performing a containment purge.

---

**Question:**

The following plant conditions exist:

- \* Mode 6.
- \* Refueling in progress.
- \* SPING 5 is inoperable.
- \* Containment Purge Exhaust Process monitor is inoperable.
- \* Containment Purge System is in service.

Which of the following actions should be performed for the given conditions?

- A. Grab samples taken once per 24 hours and analyzed within 48 hours.
  - B. Place charcoal and HEPA filters in service.
  - C. Suspend positive reactivity additions to the core.
  - D. Suspend all core alterations.
- 

**Answer:**

- D. Suspend all core alterations.
- 

**Notes:**

If SPING 5 is inoperable grab samples must be obtained every 12 hours and analyzed within 24 hours. The HEPA and charcoal filters are in service when Containment Integrity is established as it would be if core alterations in progress. Core Alterations include several evolutions other than fuel movement and as per Tech Spec - All Core alteration must be suspended.

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**References:**

2104.033, Containment Atmosphere Control, Rev 038-03-0, Step 5.3.

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0241 **Rev:** 000 **Rev Date:** 2/6/00 **RO Select:** Yes **SRO Select:** No **Points:** 1.00**Lic Level:** R **Difficulty:** 2 **Taxonomy:** K **Source:** New **Originator:** Hatman**10CFR55\_41:**  **10CFR55\_43:** **Section:** 2.2 **Type:** Generic K/A **System Title:** Equipment Control**System Number**  **K/A:** 2.2.1 **RO Imp:** 3.7 **SRO Imp:** 3.6 **Tier:** 3 **Group:** 2**Description:** Ability to perform pre-startup procedures for the facility, including operating those controls associated with plant equipment that could affect reactivity.

---

**Question:**

Which of the following statements correctly describes the position of 4160 VAC ESF Bus cross-tie breakers 2A-310 and 2A-410 prior to going from Mode 5 operation to Mode 4 operation?

- A. Racked down fully with control power energized.
- B. Racked up fully with control power energized.
- C. Racked down to approximately one (1) inch above the floor.
- D. Racked up to approximately one (1) inch from full up position.

---

**Answer:**

- B. Racked up fully with control power energized.

---

**Notes:**

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**References:**

1. 2102.001, Plant Pre-heatup and Pre-critical Checklist, Rev 047-02-0, Step 7.8.8.
2. 2107.002, ESF Electrical System Operation, Rev 014-00-0, Step 5.7 and Att. A.
3. STM 2-32-2, High Voltage Electrical Distribution, Rev 3, Section 5.6

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**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0242 **Rev:** 000 **Rev Date:** 2/6/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** C **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.10 **10CFR55\_43:****Section:** 2.2 **Type:** Generic K/A **System Title:** Equipment Control**System Number** **K/A:** 2.2.12 **RO Imp:** 3.0 **SRO Imp:** 3.4 **Tier:** 3 **Group:** 2**Description:** Knowledge of surveillance procedures.

---

**Question:**

Given the following plant conditions:

- \* Full power operations.
- \* Emergency Feedwater Pump 2P7B surveillance in progress.
- \* 2EFW-0706 is closed.
- \* 2EFW-6 is closed.
- \* 2SW-39A is open.

The surveillance procedure requires that an operator be stationed locally in communication with the Control Room to \_\_\_\_\_ if EFAS is actuated.

- A. Open 2EFW-0706.
  - B. Open 2EFW-6.
  - C. Close 2SW-39A.
  - D. Throttle 2SW-39A.
- 

**Answer:**

- B. Open 2EFW-6.
- 

**Notes:**

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**References:**2106.006, EFW System Operations, Rev 049-04-0, Supplement 2, Steps 1.12 & 2.12.

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0243 **Rev:** 000 **Rev Date:** 2/6/00 **RO Select:** No **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** C **Source:** New **Originator:** Hatman**10CFR55\_41:**  **10CFR55\_43:** 43.5**Section:** 2.4 **Type:** Generic K/A **System Title:** Emergency Procedures/Plan**System Number**  **K/A:** 2.4.21 **RO Imp:** 3.7 **SRO Imp:** 4.3 **Tier:** 3 **Group:** 4**Description:** Knowledge of the parameters and logic used to assess the status of inventory safety function.

---

**Question:**

Plant conditions following a Reactor Trip due to a loss of both 6900V Buses are:

- \* Pressurizer Level is 20% and rising.
- \* Pressurizer Pressure is 2000 psia and rising.
- \* CET temperature is 620 degrees F and stable.
- \* RVLMS indicates no levels void.

The RCS Inventory Safety Function is:

- A. Being maintained because RVLMS indicates plenum level >80%.
  - B. Being maintained because Pressurizer Level is >16% and rising.
  - C. NOT being maintained because RCS Margin To Saturation is <30 degrees F.
  - D. NOT being maintained because Pressurizer Level is less than setpoint.
- 

**Answer:**

- C. NOT being maintained because RCS Margin To Saturation is <30 degrees F.
- 

**Notes:**

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**References:**

2202.001, Standard Post Trip Actions, Rev 004-00-0, Step 5.B  
Steam Tables

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0244 **Rev:** 000 **Rev Date:** 2/6/00 **RO Select:** No **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 4 **Taxonomy:** An **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.10 **10CFR55\_43:** 43.5**Section:** 2.4 **Type:** Generic K/A **System Title:** Emergency Procedures/Plan**System Number**  **K/A:** 2.4.1 **RO Imp:** 4.3 **SRO Imp:** 4.6 **Tier:** 3 **Group:** 4**Description:** Knowledge of EOP entry conditions and immediate action steps.

---

**Question:**

The following plant conditions exist:

- \* Mode 5 operations.
- \* RCS Pressure is 150 psia.
- \* Pressurizer Level 40%.
- \* SGs in wet lay-up.
- \* "A" SDC Heat Exchanger and "A" LPSI Pump in service for SDC.
- \* "A" LPSI pump trips.

Which of the following actions should be taken?

- A. Place 2P60B in service on "A" SDC Heat Exchanger.
  - B. Repressurize RCS and start a Reactor Coolant Pump.
  - C. Place 2P35A in service on "A" SDC Heat Exchanger.
  - D. Place 2P35B in service on "B" SDC Heat Exchanger.
- 

**Answer:**

- A. Place 2P60B in service on "A" SDC Heat Exchanger.
- 

**Notes:**

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**References:**

2104.004, Shutdown Cooling System, Rev 027-00-0, Step 5.2  
2203.029, Loss of Shutdown Cooling, Rev 010-01-0, Step 16

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**Historical Comments:**

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**QID:** 0245 **Rev:** 000 **Rev Date:** 2/6/00 **RO Select:** No **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** C **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.10 **10CFR55\_43:** 43.2, 43.3**Section:** 2.1 **Type:** Generic K/A **System Title:** Conduct of Operations**System Number** **K/A:** 2.1.32 **RO Imp:** 3.4 **SRO Imp:** 3.8 **Tier:** 3 **Group:** 1**Description:** Ability to explain and apply all system limits and precautions.

---

**Question:**

While performing a reactor startup, critically is predicted by 1/M plot for Reg Group 6 at 30 inches withdrawn. Which one of the following actions must be taken as a result of this prediction?

- A. Fully insert all CEAs, return to Mode 3 and recalculate ECP and ECB.
  - B. Commence Emergency Boration, fully insert all CEAs, and verify boron concentration.
  - C. Fully insert all Reg Group CEAs, verify boron concentration, and recalculate ECB and ECP.
  - D. Commence Emergency Boration, return to Mode 3 and verify boron concentration.
- 

**Answer:**

- C. Fully insert all Reg Group CEAs, verify boron concentration, and recalculate ECB and ECP.
- 

**Notes:**

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**References:**

2102.016, Reactor Startup, Rev 006-00-0, Steps 5.6 and 8.14

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**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0246 **Rev:** 000 **Rev Date:** 2/6/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 5 **Taxonomy:** Ev **Source:** New **Originator:** Hatman**10CFR55\_41:**  **10CFR55\_43:** 43.5**Section:** 4.2 **Type:** Generic APE **System Title:** Steam Generator Tube Leak**System Number** 037 **K/A:** AA2.16 **RO Imp:** 4.1 **SRO Imp:** 4.3 **Tier:** 1 **Group:** 2**Description:** Ability to determine and interpret pressure at which to maintain RCS during SG cooldown during a Steam Generator Tube Leak.

---

---

**Question:**

Given the following plant conditions:

- \* RCS pressure is 1000 psia.
- \* "A" SG Main Steam Radiation Monitor 2RE-1007 reading 3.7 R/Hr.
- \* "B" SG Main Steam Radiation Monitor 2RE-1057 reading .48 R/Hr.
- \* RCS Tcold is 480 degrees F.
- \* RCS Thot is 482 degrees F.
- \* RCS cooldown being performed by steaming "B" SG to condenser using 2CV-0302.
- \* Attachment 10 of 2202.010, Standard Attachment completed.
- \* "A" and "C" Reactor Coolant Pumps running.

Which of the following actions should be taken?

- A. Reduce RCS pressure to maintain 25 to 50 degrees Margin to Saturation.
  - B. Reduce RCS pressure to within 50 psi of "A" SG pressure.
  - C. Reduce RCS pressure to within 50 psi of "B" SG pressure.
  - D. Allow RCS pressure to stay on HPSI float.
- 

**Answer:**

- B. Reduce RCS pressure to within 50 psi of "A" SG pressure.
- 

**Notes:**

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**References:**2202.004, Steam Generator Tube Rupture, Rev 004-00-0, Step 47.A

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0247 **Rev:** 000 **Rev Date:** 2/7/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 4 **Taxonomy:** An **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.5, 41.10 **10CFR55\_43:** **Section:** 4.2 **Type:** Generic APE **System Title:** Pressurizer Vapor Space Accident**System Number** 008 **K/A:** AA1.02 **RO Imp:** 4.1 **SRO Imp:** 3.9 **Tier:** 1 **Group:** 2**Description:** Ability to operate and/or monitor the HPSI Pump to control Pzr level/pressure with a Pressurizer Vapor Space Accident.

---

**Question:**

The following plant conditions are given:

- \* Twenty (20) minutes post trip from full power.
- \* Pressurizer Level indicates 100%.
- \* Pressurizer Pressure is 1400 psia.
- \* RVLMS level 6 wet.
- \* "A" SG pressure is 860 psia.
- \* "B" SG pressure is 870 psia.
- \* CET temperature indicates 580 degree F.
- \* Auxiliary Spray in service.

Which of the following actions should be performed for the given conditions?

- A. Restart RCPs to allow use of normal Pressurizer Spray.
  - B. Override HPSI.
  - C. Repressurize RCS to restore Margin to Saturation.
  - D. Depressurize RCS via Reactor Vessel Hi Point vents.
- 

**Answer:**

- C. Repressurize RCS to restore Margin to Saturation.
- 

**Notes:**

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**References:**

2202.003, Loss of Coolant Accident, Rev 004-00-0, Step 24  
2202.010, Standard Attachments, Rev 005-01-0, Attachment 9, Void Elimination.

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**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0248 **Rev:** 000 **Rev Date:** 2/7/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 4 **Taxonomy:** Ap **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:****Section:** 3.2 **Type:** Plant Systems **System Title:** Engineered Safety Features Actuation**System Number** 013 **K/A:** K3.01 **RO Imp:** 4.4 **SRO Imp:** 4.7 **Tier:** 2 **Group:** 1**Description:** Knowledge of the effect that a loss or malfunction of the ESFAS will have on the fuel.

---

**Question:**

Given the following plant conditions:

- \* 13 minutes post trip from full power.
- \* Pressurizer level is 0%.
- \* Pressurizer pressure is 1300 psia.
- \* Containment Radiation Monitors indicate 10 Rem/Hr.
- \* Steam Generator pressures are at 1000 psia.
- \* RAS is actuated on red train.

Which of the following actions will limit fuel damage for the given conditions?

- A. Override and open Containment Sump Isolation valves 2CV-5647-1 and 2CV-5649-1.
  - B. Override and close Containment Sump Isolation valves 2CV-5647-1 and 2CV-5649-1.
  - C. Use Auxiliary Spray to depressurize and dump Safety Injection Tanks (SITs).
  - D. Use Auxiliary Spray to depressurize and maximize HPSI Flow.
- 

**Answer:**

- B. Override and close Containment Sump Isolation valves 2CV-5647-1 and 2CV-5649-1.
- 

**Notes:**

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**References:**2203.040, Inadvertent RAS, Rev 003-01-0, Step 4.

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0249 **Rev:** 000 **Rev Date:** 2/7/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** K **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.5 **10CFR55\_43:** 43.5**Section:** 3.2 **Type:** Plant Systems **System Title:** Engineered Safety Features Actuation**System Number** 013 **K/A:** A2.06 **RO Imp:** 3.7 **SRO Imp:** 4.0 **Tier:** 2 **Group:** 1**Description:** Ability to (a) predict the impacts of inadvertent ESFAS actuation on the ESFAS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of Inadvertent ESFAS actuation.

---

**Question:**

Which of the following situations procedurally require overriding an ESF actuated component prior to reaching its actuated position?

- A. During a SGTR by overriding Service Water to Auxiliary Cooling Water.
- B. During an Inadvertent SIAS by overriding Service Water to Auxiliary Cooling Water.
- C. During an Inadvertent CIAS by overriding Letdown Isolation.
- D. During an Inadvertent MSIS by overriding Letdown Isolation.

---

**Answer:**

- B. During an Inadvertent SIAS by overriding Service Water to Auxiliary Cooling Water.

---

**Notes:**

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**References:**

2203.018, Inadvertent SIAS, Rev 003-01-0, Step 3.0.  
1015.001, Conduct of Operations, Rev 051-03-1, Step 19.2

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0250 **Rev:** 000 **Rev Date:** 2/7/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** K **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:****Section:** 3.9 **Type:** Plant Systems **System Title:** Liquid Radwaste System (LRS)**System Number** 068 **K/A:** K6.10 **RO Imp:** 2.5 **SRO Imp:** 2.9 **Tier:** 2 **Group:** 1**Description:** Knowledge of the effect of a loss or malfunction of radiation monitor will have on the Liquid Radwaste System.

---

**Question:**

The Liquid Radwaste Process Monitor 2RE-2330 is out of service. All of the following are required to be performed for a release of a Waste Condensate Tank (2T21) to the Circulating Water Flume EXCEPT:

- A. At least two independent verifications of the release flow rate is made every four hours during the tank release.
- B. At least two independent samples are analyzed.
- C. At least two technically qualified members of the facility staff independently verify the release rate computer input data.
- D. At least two technically qualified members of the facility staff independently verify the discharge valve lineup.

---

**Answer:**

- A. At least two independent verifications of the release flow rate is made every four hours during the tank release.

---

**Notes:**

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**References:**

Offsite Dose Calculation Manual, Section 2.1, Rev 13, PC-1

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**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0251 **Rev:** 000 **Rev Date:** 2/7/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** C **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:****Section:** 3.4 **Type:** Plant Systems **System Title:** Main Feedwater (MFW) System**System Number** 059 **K/A:** K3.03 **RO Imp:** 3.5 **SRO Imp:** 3.7 **Tier:** 2 **Group:** 1**Description:** Knowledge of the effect that a loss or malfunction of the MFW will have on SGs.

---

---

**Question:**

Determine the plant response for the following conditions:

- \* FWCS "A" Master Controller in Manual.
  - \* Plant Trip from full power occurs.
- A. SG "A" will continuously rise until HLO isolates feedwater.
- B. SG "A" will continuously rise until FW Blocks isolate feedwater.
- C. SG "A" will initially shrink then slowly rise until HLO isolates feedwater.
- D. SG "A" will initially shrink then slowly rise until FW blocks isolate feedwater
- 

**Answer:**

- C. SG "A" will initially shrink then slowly rise until HLO isolates feedwater.
- 

**Notes:**

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**References:**STM 2-69, Feedwater Control System, Rev 5, Sections 3.3 & 3.4

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0252 **Rev:** 000 **Rev Date:** 2/7/00 **RO Select:** No **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** C **Source:** New **Originator:** Hatman**10CFR55\_41:**  **10CFR55\_43:** 43.5**Section:** 2.1 **Type:** Generic K/A **System Title:** Conduct of Operations**System Number**  **K/A:** 2.1.17 **RO Imp:** 3.7 **SRO Imp:** 4.4 **Tier:** 3 **Group:** 1**Description:** Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation.

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**Question:**

Which of the following would prompt entry into the Severe Accident Management Guidelines (SAMG)?

- A. SGTR with concurrent steamline break on same SG.
- B. Partial core uncover with CETs indicating >1200 degrees F.
- C. Small break LOCA with vessel level at centerline of hot legs.
- D. Large break LOCA with all critical safety functions satisfied.

---

---

**Answer:**

- B. Partial core uncover with CETs indicating >1200 degrees F.

---

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**Notes:**

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**References:**

Unit 2 SAMG Guidelines - RCS Damage State Verification Section  
1903.065, Emergency Response Facility Technical Support Center (TSC), Rev 014-05-0, Step 4.8

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0253 **Rev:** 000 **Rev Date:** 2/7/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 4 **Taxonomy:** An **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:****Section:** 3.8 **Type:** Plant Systems **System Title:** Fuel Handling Equipment System**System Number** 034 **K/A:** A3.02 **RO Imp:** 2.5 **SRO Imp:** 3.1 **Tier:** 2 **Group:** 3**Description:** Ability to monitor automatic operation of the Fuel Handling System including travel limits.

---

**Question:**

Given the following plant conditions:

- \* Mode 6.
- \* Refueling in progress.
- \* Digital indexing indication shows coordinates consistent with core location L-4.
- \* Bridge and trolley pointers show core coordinates consistent with M-8.

Which of the following actions should be performed for the given conditions?

- A. Open breakers CB-M and CB-CP and reclose to reboot computer.
  - B. Open breakers CB-L and CB-Q and reclose to reboot X-Y encoder.
  - C. Continue refueling manually using bridge and trolley markers.
  - D. Secure refueling and get General Manager's approval prior to recommencing fuel movement.
- 

**Answer:**

- A. Open breakers CB-M and CB-CP and reclose to reboot computer.
- 

**Notes:**

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**References:**

2503.003, Operation of Fuel Handling Equipment, Rev 016-02-0, Step 5.7

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0254 **Rev:** 000 **Rev Date:** 2/7/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 2 **Taxonomy:** K **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:****Section:** 3.4 **Type:** Plant Systems **System Title:** Main Feedwater System**System Number** 059 **K/A:** A3.02 **RO Imp:** 2.9 **SRO Imp:** 3.1 **Tier:** 2 **Group:** 1**Description:** Ability to monitor automatic operation of the MFW, including programmed levels in the S/G.

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---

**Question:**

Standard Post Trip Actions requires Main Feedwater to be in Reactor Trip Override (RTO). Which of the following actions should be performed if RTO is not met?

- A. Trip remaining Condensate Pumps.
- B. Trip remaining Main Feed Pumps.
- C. Close MFW block valves.
- D. Close MSIVs.

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---

**Answer:**

- B. Trip remaining Main Feed Pumps.

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**Notes:**

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**References:**

2202.001, Standard Post Trip Actions, Rev 004-00-0, Step 8.B.

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**Historical Comments:**



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**EXAM1**01-Mar-00

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**QID:** 0255 **Rev:** 000 **Rev Date:** 2/7/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 4 **Taxonomy:** C **Source:** New **Originator:** Hatman**10CFR55\_41:** 4.2 to 4.9 **10CFR55\_43:****Section:** 3.8 **Type:** Plant Systems **System Title:** Component Cooling Water System**System Number** 008 **K/A:** 2.1.7 **RO Imp:** 3.7 **SRO Imp:** 4.4 **Tier:** 2 **Group:** 3**Description:** Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretations.

---

**Question:**

Given the following plant conditions:

- \* Ten (10) minutes post trip from full power.
- \* RCS pressure is 1600 psia and stable.
- \* Containment pressure is 18.7 psia and lowering.
- \* Restoration of CCW to Containment has commenced.
- \* Loop II CCW Surge Tank Level lowers to 9%.

Which of the following actions should be performed for the given conditions?

- A. Maintain RCP seal cooldown rates < 100 degrees F/Hr.
- B. Throttle 2CV-5255-1 open to increase Loop II CCW flow by 100 gpm.
- C. Trip remaining RCPs and isolate CCW to Containment.
- D. Trip remaining RCPs and actuate CIAS.

---

**Answer:**

- C. Trip remaining RCPs and isolate CCW to Containment.

---

**Notes:**

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**References:**2202.010, Standard Attachments, Rev 005-01-0, Att 21, Step 4.0

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0256 **Rev:** 000 **Rev Date:** 2/7/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 2 **Taxonomy:** K **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:****Section:** 3.5 **Type:** Plant Systems **System Title:** Containment Cooling System (CCS)**System Number** 022 **K/A:** A4.03 **RO Imp:** 3.2 **SRO Imp:** 3.2 **Tier:** 2 **Group:** 1**Description:** Ability to manually operate and/or monitor dampers in the Containment Cooling System.

---

**Question:**

Which of the following describes the reason heat removal capability of the Containment Coolers is enhanced following actuation of SIAS and CCAS?

- A. Containment Cooling Fans shift to high speed and the bypass dampers open.
  - B. Containment Cooling Fans shift to high speed and Service Water is aligned to cooling coils.
  - C. Chilled water is aligned to cooling coils and Service Water is isolated.
  - D. Service Water is aligned to cooling coils and bypass dampers are opened.
- 

**Answer:**

- D. Service Water is aligned to cooling coils and bypass dampers are opened.
- 

**Notes:**

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**References:**

- 1. 2202.003, Loss of Coolant Accident, Rev 004-00-0, Section 1, Step 11.
  - 2. STM 2-9, Containment Cooling And Purge Systems, Rev 3, Sections 2.1, 2.6, 2.7
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**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0257 **Rev:** 000 **Rev Date:** 2/7/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 4 **Taxonomy:** An **Source:** New **Originator:** Hatman**10CFR55\_41:**  **10CFR55\_43:** 43.5**Section:** 4.2 **Type:** Plant Systems **System Title:** Area Radiation Monitoring System**System Number** 061 **K/A:** AA2.01 **RO Imp:** 3.5 **SRO Imp:** 3.7 **Tier:** 1 **Group:** 2**Description:** Ability to determine and interpret the ARM panel displays as they apply to the Area Radiation Monitoring System.

---

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**Question:**

Given the following plant conditions:

- \* Five (5) minutes post trip from full power.
- \* RCS pressure is 1300 psia and stable.
- \* Pressurizer Level is 8% and rising slowly.
- \* CAMS readings are 2000 CPM particulate and 850 CPM gaseous.
- \* Containment Area Radiation Monitors read 60 to 90 mr/hr.
- \* Containment Wide Range Area Radiation Monitors read 11 R/hr and 9 R/hr.
- \* Containment Pressure is 27 psia.
- \* Containment Temperature is 245 degrees F.

Determine the event in progress for the given conditions:

- A. Tcold Small Break LOCA.
  - B. Thot Large Break LOCA.
  - C. Excess Steam Demand Event.
  - D. Pressurizer Steam Space Leak.
- 

**Answer:**

- C. Excess Steam Demand Event.
- 

**Notes:**

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**References:**NRC Information Notice 97-45, Environmental Qualification Deficiency for Cables and Containment Penetration Pigtails.

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**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0258 **Rev:** 000 **Rev Date:** 2/7/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** An **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.5 **10CFR55\_43:****Section:** 3.2 **Type:** Plant Systems **System Title:** Engineered Safety Features Actuation System**System Number** 013 **K/A:** K5.02 **RO Imp:** 2.9 **SRO Imp:** 3.3 **Tier:** 2 **Group:** 1**Description:** Knowledge of the operational implications of safety system logic and reliability as they apply to the ESFAS.

---

**Question:**

The plant is operating at 100% power. The Channel A Pressurizer Pressure Low trip bistable is bypassed due to the Safety Channel A pressure transmitter failing low. The Channel D PPS Functional Test is being performed as scheduled. Prior to inserting a low Pressurizer Pressure signal into Channel D, the RO depresses the trip channel bypass button for the Channel D Pressurizer Pressure Low trip bistable. The RO then notices his mistake. What is the results of this action if the RO stops at this point?

- A. Channel A and D are bypassed and trip logic is 1 out of 2.
- B. Channel A and D are bypassed and trip logic is 2 out of 2.
- C. Channel D does NOT bypass, Channel A is removed from bypass, a reactor trip and SIAS occurs.
- D. Channel D does NOT bypass, Channel A is removed from bypass, a reactor trip and SIAS do NOT occur.

---

**Answer:**

- D. Channel D does NOT bypass, Channel A is removed from bypass, a reactor trip and SIAS do NOT occur.

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**Notes:**

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**References:**STM 2-63, Reactor Protection System, Rev 4, Section 6.2.1

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0259 **Rev:** 000 **Rev Date:** 2/7/00 **RO Select:** No **SRO Select:** Yes **Points:** 1.00**Lic Level:** S **Difficulty:** 2 **Taxonomy:** K **Source:** New **Originator:** Hatman**10CFR55\_41:**  **10CFR55\_43:** 43.4**Section:** 2.3 **Type:** Generic K/A **System Title:** Radiation Control**System Number**  **K/A:** 2.3.4 **RO Imp:** 2.5 **SRO Imp:** 3.1 **Tier:** 3 **Group:** 3**Description:** Knowledge of radiation exposure limits and contamination control, including permissible levels in excess of those authorized.

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**Question:**

Which of the following bags are used inside containment to transport tools from Reactor Building Tool Room to a work location?

- A. White Mesh.
- B. Black Mesh.
- C. Yellow bordered bag.
- D. Red bordered bag.

---

**Answer:**

- B. Black Mesh.

---

**Notes:**

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**References:**

Entergy Radworker Practices Guidelines, Guideline #2

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0260 **Rev:** 000 **Rev Date:** 2/7/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 4 **Taxonomy:** An **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.2 to 41.9 **10CFR55\_43:** **Section:** 3.4 **Type:** Plant Systems **System Title:** Condensate System**System Number** 056 **K/A:** K1.03 **RO Imp:** 2.6 **SRO Imp:** 2.6 **Tier:** 2 **Group:** 1**Description:** Knowledge of the physical connections and/or cause-effect relationships between Condensate System and the Main Feedwater System.

---

**Question:**

Which of the following describes why 2CV-0742, Condensate X-Connect prior to MFP suction, is procedurally required to be open during MFP operations?

- A. Equalize Condensate flow.
- B. Prevent Condensate piping overpressurization.
- C. Equalize Main Feedwater flow.
- D. Ensure MFP NPSH maintained.

---

**Answer:**

- B. Prevent Condensate piping overpressurization.

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**Notes:**

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**References:**

NRC IE Notice 86-106 Supplement 1, Feedwater Line Break

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**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0261 **Rev:** 000 **Rev Date:** 2/7/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** C **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.5 **10CFR55\_43:****Section:** 3.4 **Type:** Plant Systems **System Title:** Main Turbine Generator**System Number** 045 **K/A:** A1.05 **RO Imp:** 3.8 **SRO Imp:** 4.1 **Tier:** 2 **Group:** 3**Description:** Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the MT/G system controls including expected response of primary plant parameters (temperature and pressure) following a T/G trip.

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---

**Question:**

Which of the following sets of parameters match plant response for a turbine trip from 50% Reactor Power?

- A. Reactor tripped, Tave approximately 540 degrees F.
  - B. Reactor tripped, Tave approximately 550 degrees F.
  - C. Reactor power approximately 50%, Tave approximately 550 degrees F.
  - D. Reactor power approximately 50%, Tave approximately 560 degrees F.
- 

**Answer:**

- D. Reactor power approximately 50%, Tave approximately 560 degrees F.
- 

**Notes:**

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**References:**

- 1. STM 2-23, Steam Dump and Bypass Control System, Rev 4, Section 2.3.
  - 2. 2102.004C, Tave Vs Tref, Rev 026-04-0
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**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0262 **Rev:** 000 **Rev Date:** 2/7/00 **RO Select:** Yes **SRO Select:** No **Points:** 1.00**Lic Level:** RS **Difficulty:** 2 **Taxonomy:** K **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:****Section:** 3.8 **Type:** Plant Systems **System Title:** Instrument Air System**System Number** 078 **K/A:** A4.01 **RO Imp:** 3.1 **SRO Imp:** 3.1 **Tier:** 2 **Group:** 3**Description:** Ability to manually operate and/or monitor pressure gages in the control room.

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**Question:**

Given the following plant conditions:

- \* Mode 5 operation.
- \* RCS temperature is 120 degrees F.
- \* RCS pressure is atmospheric.
- \* Annunciator 2K12-A8, Instr Air Press Hi/Lo is actuated.
- \* IA pressure on 2PIS-3013 on Panel 2C14 is 75 psig and lowering.

Which of the following actions should be performed for the given conditions?

- A. Immediately secure Shutdown Cooling.
  - B. Dispatch an operator to throttle 2CV-5091 to prevent pump runout.
  - C. Dispatch an operator to throttle 2CV-5093 to prevent pump runout.
  - D. Cross-connect IA with Unit 1.
- 

**Answer:**

- D. Cross-connect IA with Unit 1.
- 

**Notes:**

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**References:**

2203.021, Loss of Instrument Air, Rev 007-00-0, Step 2.  
2203.021, Loss of Instrument Air Tech Guidelines, Rev 06-04-1, Steps 2 & 8.

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**Historical Comments:**



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**EXAM1**01-Mar-00

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**QID:** 0263 **Rev:** 001 **Rev Date:** 2/7/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 4 **Taxonomy:** An **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.6 **10CFR55\_43:****Section:** 3.7 **Type:** Plant Systems **System Title:** In-core Temperature Monitor System**System Number** 017 **K/A:** A1.01 **RO Imp:** 3.7 **SRO Imp:** 3.9 **Tier:** 2 **Group:** 1**Description:** Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the ITM system controls including core exit temperatures.

---

**Question:**

The following plant conditions exist:

- \* Small Break LOCA in progress.
- \* RCPs 2P32B and 2P32C in service.
- \* Annunciator 2K11-C2, " A RCP Reverse Rotation" is actuated.
- \* Appropriate actions are taken.

Which of the following should be used to determine subcooled margin?

- A. SPDS.
  - B. CPCs.
  - C. Digital Indication 2XI-4612 on Panel 2C-336-3/4.
  - D. Chart Recorder 2XR-4612 on Panel 2C03.
- 

**Answer:**

- A. SPDS.
- 

**Notes:**

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**References:**

2203.013, Natural Circulation Operations, Rev 007-02-0, Step 3A.  
2203.013, Bases Document, Rev 007-02-0, Step 3.  
2203.012K, Annunciator 2K11 Corrective Actions, Rev 029-00-0, 2K11-C2

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**Historical Comments:**

Rev 001 - 02/07/00 - Added "Appropriate actions are taken" to stem of question per comments of exam reviewers.

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**EXAM1**01-Mar-00

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**QID:** 0264 **Rev:** 000 **Rev Date:** 2/7/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** C **Source:** New **Originator:** Hatman**10CFR55\_41:**  **10CFR55\_43:** 43.5**Section:** 2.4 **Type:** Generic K/A **System Title:** Steam Generator Tube Rupture**System Number** 038 **K/A:** 2.4.48 **RO Imp:** 3.5 **SRO Imp:** 3.8 **Tier:** 1 **Group:** 2**Description:** Ability to interpret control room indications to verify the status and operation of system, and understand how operator actions and directives affect plant and system conditions.

---

**Question:**

Given the following plant conditions:

- \* 20 minutes post trip from full power.
- \* RCS pressure 1200 psia.
- \* RCS Thot temperature 530 degree F.
- \* RVLMS Level 4 wet.
- \* "A" SG Level is 12% narrow range.
- \* "B" SG Level is 47% narrow range.
- \* Pressurizer Level is 34% and rising.

Which of the following actions must be performed to allow HPSI override?

- A. Restore Margin To Saturation to > 30 degrees F.
  - B. Restore SG Levels to > 50% Narrow Range.
  - C. Restore Pressurizer Level to 41%.
  - D. Restore RVLMS to Level 2 wet.
- 

**Answer:**

- D. Restore RVLMS to Level 2 wet.
- 

**Notes:**

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**References:**2202.004, Steam Generator Tube Rupture, Rev 004-00-0, Step 20.0.

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**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0265 **Rev:** 000 **Rev Date:** 2/7/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 2 **Taxonomy:** K **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:****Section:** 4.1 **Type:** Generic EOP **System Title:** Anticipated Transient Without Scram**System Number** 029 **K/A:** AK2.06 **RO Imp:** 2.9 **SRO Imp:** 3.1 **Tier:** 1 **Group:** 2**Description:** Knowledge of the interrelations between breakers, relays and disconnects and ATWS.

---

---

**Question:**

Given the following plant conditions:

- \* Plant operating at full power.
- \* DNBR indicates 1.1

Which of the following actions should be performed?

- A. Enter Loss of COLSS AOP.
  - B. Commence power reduction until DNBR > 1.25.
  - C. Depress PPS reset pushbuttons on Panel 2C03.
  - D. Depress DSS pushbutton on Panel 2C03.
- 

**Answer:**

- D. Depress DSS pushbutton on Panel 2C03.
- 

**Notes:**

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**References:**

1. 2202.001, Standard Post Trip Actions, Rev 004-00-0, Step 3.A.1.
  2. STM 2-63, Reactor Protection System, Rev 4, Section 4.3.4.
  3. 1015.001, Conduct of Operations, Rev 051-03-1, Section 19.1.1.
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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0266 **Rev:** 000 **Rev Date:** 2/9/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 4 **Taxonomy:** An **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:** **Section:** 4.2 **Type:** Generic AOPs **System Title:** Loss of Vital AC Electrical Inst Bus**System Number** 057 **K/A:** AA1.06 **RO Imp:** 3.5 **SRO Imp:** 3.5 **Tier:** 1 **Group:** 1**Description:** Ability to operate and/or monitor manual control of components for which automatic control is lost as they apply to Loss of Vital AC Instrument Bus.

---

**Question:**

Given the following plant conditions:

- \* 15 minutes post trip from Mode 3.
- \* "B" CCP running prior to trip.
- \* Startup Transformer #3 is locked out.
- \* #1 EDG is Out of Service.

Which of the following will restore RCS Pressure Control for the given conditions?

- A. Select "B" Pressurizer Level Control Channel.
- B. Select "B" Pressurizer Pressure Control Channel.
- C. Feed 2A1 from AACG.
- D. Crosstie 2Y1 and 2Y2.

---

**Answer:**

- D. Crosstie 2Y1 and 2Y2.

---

**Notes:**

Selecting "B" Pressurizer Level Control Channel will allow backup CCP's to run, but they are not required. Selecting "B" Pressurizer Pressure Control Channel will restore heaters only if the heater low level cutout is also selected to "B" channel only. Energizing non-vital bus 2A1 will not restore power to 120V power supply for "A" Pressurizer Pressure Control. Energizing 2Y1 from 2Y2 will allow Pressurizer heater control to be re-energized.

---

**References:**

1. 2202.007, Loss of Offsite Power, Rev 004-00-0, Step 10.A.
2. STM 2-3-1, Pressurizer Pressure and Level Control, Rev 2, Chg 1, Sections 2.2.4 & 2.4

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**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0267 **Rev:** 000 **Rev Date:** 2/7/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 4 **Taxonomy:** An **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:****Section:** 4.2 **Type:** Generic AOP **System Title:** Loss of Nuclear Service Water**System Number** 062 **K/A:** AA1.02 **RO Imp:** 3.2 **SRO Imp:** 3.3 **Tier:** 1 **Group:** 1**Description:** Ability to operate and/or monitor loads on the SWS in the control room as they apply to Loss of Nuclear Service Water.

---

---

**Question:**

Given the following plant conditions:

- \* 15 minutes post trip from full power operation.
- \* "A" Main Steam Radiation Monitor reads 2 R/Hr.
- \* RCS pressure is 1500 psia and stable.
- \* RCS temperature is 550 degrees F and stable.

Which of the following actions will minimize the off-site release for the given conditions?

- A. Restore CCW to RCPs.
  - B. Restore SW to ACW.
  - C. Isolate SG Blowdown.
  - D. Isolate RCS Letdown.
- 

**Answer:**

- B. Restore SW to ACW.
- 

**Notes:**

The Examinee must determine that a SGTR is in progress. If ACW cooling to the vacuum pumps is not restored then condenser vacuum will be lost and the RCS must be steamed to the atmosphere.

---

**References:**

1. 2202.004, Steam Generator Tube Rupture, Rev 004-00-0, Step 7.H.
  2. 2202.004, SGTR Tech Guidelines, Rev 04-00-0, Step 7.
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**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0268 **Rev:** 000 **Rev Date:** 2/7/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 4 **Taxonomy:** An **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:****Section:** 4.4 **Type:** Generic APE **System Title:** Natural Circulation Operations**System Number** A13 **K/A:** AA1.2 **RO Imp:** 3.1 **SRO Imp:** 3.6 **Tier:** 1 **Group:** 1**Description:** Ability to operate and/or monitor operating behavior characteristics of the facility as they apply to Natural Circulation Operations.

---

**Question:**

Given the following plant conditions:

- \* 15 minutes Post Reactor Trip.
- \* Containment Radiation Monitors indicate 2 Rem and rising very slowly.
- \* Volume Control Tank level decrease of 1% in eight (8) minutes.
- \* Containment Sump Level increase of 1% in fifteen (15) minutes.
- \* Loss of 6900V buses 2H1 and 2H2 has occurred.

Which of the following will minimize the possibility of a Reactor Head void formation for the given conditions?

- A. Maintain Margin To Saturation 30 to 35 degrees F.
  - B. Maintain Margin To Saturation > 50 degrees F.
  - C. Reduce RCS pressure to minimize RCS inventory loss.
  - D. Maximize RCS pressure to minimize void fraction.
- 

**Answer:**

- B. Maintain Margin To Saturation > 50 degrees F.
- 

**Notes:**

The examinee must calculate an RCS leakrate to determine the governing procedure. The procedures in effect are Excess RCS Leakage and Natural Circulation Cooldown concurrently, which requires MTS to be maintained > 50 degrees F.

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**References:**

2203.013, Natural Circulation Operations, Rev 007-02-0, Step 5.

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0269 **Rev:** 000 **Rev Date:** 2/7/00 **RO Select:** No **SRO Select:** Yes **Points:** 1.00**Lic Level:** S **Difficulty:** 2 **Taxonomy:** K **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.10 **10CFR55\_43:** 43.3**Section:** 2.2 **Type:** Generic **System Title:** Equipment Control**System Number** **K/A:** 2.2.11 **RO Imp:** 2.5 **SRO Imp:** 3.4 **Tier:** 3 **Group:** 2**Description:** Knowledge of the process for controlling temporary changes.

---

---

**Question:**

An emergency Temporary Alteration is installed on Saturday at 0300. PSC approval of this package is required. What is the maximum time for PSC approval required?

- A. Next full working day.
  - B. Within seven (7) days.
  - C. Within fourteen (14) days.
  - D. Within thirty (30) days.
- 

**Answer:**

- C. Within fourteen (14) days.
- 

**Notes:**

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**References:**

1000.028, Control of Temporary Alterations, Rev 022-03-0, Step 6.1.1.B.

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0270 **Rev:** 000 **Rev Date:** 2/7/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** C **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.2 to 41.9 **10CFR55\_43:** **Section:** 3.7 **Type:** Plant Systems **System Title:** Area Radiation Monitoring System**System Number** 072 **K/A:** K1.04 **RO Imp:** 3.3 **SRO Imp:** 3.5 **Tier:** 2 **Group:** 1**Description:** Knowledge of the physical connections and/or cause-effect relationships between the ARM system and Control Room Ventilation System.

---

**Question:**

The following conditions exist:

- \* Leakage of 400 gpm from Reactor Coolant System to Component Cooling Water System.
- \* Control Room Supply Radiation Monitor 2RITS-8750-1 in Hi Alarm.

Which of the following Unit 2 Doors must be closed?

- A. Shift Supervisor's Office (Door 450) and Unit 2 Control Room Foyer (Door 342).
- B. Coffee and Printer Room (Door 286) and Unit 2 Shift Supervisor's Office (Door 450).
- C. Shift Supervisor's Office to CRSA Area (Door 341) and Coffee and Printer Room (Door 286).
- D. Unit 2 Control Room Foyer (Door 342) and Coffee and Printer Room (Door 286).

---

**Answer:**

- A. Shift Supervisor's Office (Door 450) and Unit 2 Control Room Foyer (Door 342).

---

**Notes:**

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**References:**

2104.007, CR Emergency Air Conditioning and Ventilation, Rev 021-05-0, Steps 5.8 & 9.2.

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**Historical Comments:**



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**EXAM1***01-Mar-00*

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**QID:** 0271 **Rev:** 000 **Rev Date:** 2/7/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** Ap **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:****Section:** 4.2 **Type:** Generic APE **System Title:** Loss of Source Range Nuclear Instrumentatio**System Number** 032 **K/A:** AK2.01 **RO Imp:** 2.7 **SRO Imp:** 3.1 **Tier:** 1 **Group:** 2**Description:** Knowledge of the interrelations between the Loss of Source Range Nuclear Instrumentation and Power supplies, including proper switch positions.

---

**Question:**

The plant is in Mode 6 operation and Electrical Maintenance informs the Control Room that 2RS-1 Breaker 1 has inadvertently tripped and breaker is damaged. Maintenance states that control room panel 2C336-1 is de-energized and the following alarms are inoperable:

- \* 2K10-A4, Pzr Relief Valve Open.
- \* 2K10-A6, Containment Radiation Hi Alarm.
- \* 2K10-K4, Startup Channel 1 Trouble.

Which of the following actions is correct?

- A. Evacuate Containment since radiation levels are not monitored.
- B. Evacuate Containment since RCS leakage is in progress.
- C. Suspend all core alterations since RCS leakage is in progress.
- D. Suspend all core alterations since neutron flux monitoring unavailable.

---

**Answer:**

- D. Suspend all core alterations since neutron flux monitoring unavailable.

---

**Notes:**

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**References:**

2203.012J, Annunciator 2K10 Corrective Action, Rev 027-04-0, 2K10-K4.

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0272 **Rev:** 000 **Rev Date:** 2/7/00 **RO Select:** Yes **SRO Select:** No **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** C **Source:** New **Originator:** Hatman**10CFR55\_41:**  **10CFR55\_43:** 43.5**Section:** 4.2 **Type:** Generic APE **System Title:** Fuel Handling Incidents**System Number** 036 **K/A:** AA2.02 **RO Imp:** 3.4 **SRO Imp:** 4.1 **Tier:** 1 **Group:** 3**Description:** Ability to determine and interpret occurrence of a fuel handling incident as they apply to the Fuel Handling Incidents.

---

**Question:**

Given the following conditions:

- \* Plant operating in Mode 1.
- \* Dry fuel movement in progress.
- \* Loaded dry fuel cask is dropped seven (7) feet in train bay due to turbine building crane failure.

Which of the following procedures should be entered for the given conditions?

- A. 2102.004, Power Operations.
- B. 2203.008, Natural Emergencies.
- C. 2203.030, Remote Shutdown
- D. 2502.001, Refueling Shuffle

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**Answer:**

- D. 2502.001, Refueling Shuffle

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**Notes:**

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**References:**

2502.001, Refueling Shuffle, Rev 028-02-1, Attachment M (Refueling Accident)

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0273 **Rev:** 000 **Rev Date:** 2/7/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 2 **Taxonomy:** C **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.5, 41.10 **10CFR55\_43:** **Section:** 4.2 **Type:** Generic APE **System Title:** Accidental Liquid Radwaste Release**System Number** 059 **K/A:** AK3.01 **RO Imp:** 3.5 **SRO Imp:** 3.9 **Tier:** 1 **Group:** 2**Description:** Knowledge of the reasons for termination of a release of radioactive liquid as they apply to the Accidental Liquid Radwaste Release.

---

**Question:**

The following conditions exist:

- \* Plant operating at full power.
- \* Annunciator 2K11-C10, Process Liq Rad Hi/Lo is actuated.
- \* 2RITS-5202, Loop II CCW Return is in Hi alarm.
- \* Loop II CCW Surge Tank Level is 45%.
- \* Letdown is isolated.
- \* Pressurizer Level is 60%.

Which of the following actions should be performed for the given conditions?

- A. Locally shift CCW Pump Room drains to Auxiliary Building.
- B. Locally isolate ESF Pump Room floor drains.
- C. Lower Loop II CCW Surge Tank Level to 20%.
- D. Raise Loop II CCW Surge Tank Level to 70%.

---

**Answer:**

- A. Locally shift CCW Pump Room drains to Auxiliary Building.

---

**Notes:**

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**References:**

2203.016, Excess RCS Leakage, Rev 008-03-0, Attachment A (RCS to CCW Leak Isolation)

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0274 **Rev:** 000 **Rev Date:** 2/7/00 **RO Select:** Yes **SRO Select:** No **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** C **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:****Section:** 3.2 **Type:** Plant Systems **System Title:** Engineered Safety Features Actuation System**System Number** 013 **K/A:** K4.10 **RO Imp:** 3.3 **SRO Imp:** 3.7 **Tier:** 2 **Group:** 1**Description:** Knowledge of ESFAS design feature(s) and/or interlock(s) which provide for safeguards equipment control reset.

---

**Question:**

The following plant conditions exist:

- \* Ten (10) minutes post-trip from full power.
- \* SG "A" pressure is 680 psia.
- \* SG "B" pressure is 660 psia.
- \* SG "A" level is 6% narrow range.
- \* SG "B" level is 4% narrow range.

Which of the following actions must be performed to feed SG "A"?

- A. Manually actuate Emergency Feedwater Actuation System (EFAS).
- B. Manually start Emergency Feedwater Pump 2P7A.
- C. Take 2HS-1038-2 and 2HS-1025B-1 to EFAS override and commence manual feed.
- D. Take 2HS-1038-2 and 2HS-1025B-1 to MSIS override and commence manual feed.

---

**Answer:**

- D. Take 2HS-1038-2 and 2HS-1025B-1 to MSIS override and commence manual feed.

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**Notes:**

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**References:**

STM 2-19-2, EFW & AFW Systems, Rev 5 Chg 1, Section 2.3.3.1

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0275 **Rev:** 000 **Rev Date:** 2/7/00 **RO Select:** Yes **SRO Select:** No **Points:** 1.00**Lic Level:** R **Difficulty:** 2 **Taxonomy:** K **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:****Section:** 3.8 **Type:** Plant Systems **System Title:** Spent Fuel Cooling System**System Number** 033 **K/A:** K4.05 **RO Imp:** 3.1 **SRO Imp:** 3.3 **Tier:** 2 **Group:** 2**Description:** Knowledge of design feature(s) and/or interlocks which provide for adequate SDM (boron concentration).

---

**Question:**

Which of the following activities requires the highest boron concentration in the Spent Fuel Pool (SFP)?

- A. Storing new fuel in SFP prior to outage.
- B. When core off-load is in progress.
- C. When core reload is in progress.
- D. During dry fuel storage operations.

---

**Answer:**

- D. During dry fuel storage operations.

---

**Notes:**

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**References:**

2104.006, Fuel Pool Systems, Rev 018-00-0, Step 5.7.

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0276 **Rev:** 000 **Rev Date:** 2/7/00 **RO Select:** Yes **SRO Select:** No **Points:** 1.00**Lic Level:** R **Difficulty:** 4 **Taxonomy:** Ev **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.5 **10CFR55\_43:****Section:** 3.6 **Type:** Plant Systems **System Title:** AC Electrical Distribution System**System Number** 062 **K/A:** A1.01 **RO Imp:** 3.4 **SRO Imp:** 3.8 **Tier:** 2 **Group:** 2**Description:** Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the AC Distribution System controls including significance of DG load limits.

---

**Question:**

Given the following plant conditions:

- \* Twenty (20) minutes post trip from full power.
- \* Startup Transformer #3 is locked out.
- \* Alternate AC Diesel Generator (AACG) Out of Service.
- \* Steam Generator Tube Rupture in progress.
- \* #1 Emergency Diesel Generator (EDG) has failed.
- \* 4160 VAC ESF Bus 2A3 crosstied to 2A4.
- \* #2 Emergency Diesel Generator (EDG) is loaded to 3300 KW.
- \* Emergency Feedwater Pump 2P7A overspeed trip device is tripped and will not reset.

Which of the following action should be performed for the given conditions?

- A. Un-crosstie 2A3 and 2A4.
- B. Reduce #2EDG load to 3000 KW.
- C. Reduce #2EDG load to 2800 KW.
- D. Cross-tie 2B5 to 2B6.

---

**Answer:**

- C. Reduce #2EDG load to 2800 KW.

---

**Notes:**

"A" would be the correct answer if 2P7A was available, but since 2P7B is the only feed source then 2A3 must remain cross-tied to 2A4.

"B" is incorrect because 2A3 and 2A4 must remain cross-tied continuously and continuous maximum load for DG is 2850 KW.

"D" is incorrect because 2B5 is already being supplied from 2A3.

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**References:**

2104.036, Emergency Diesel Generator Operations, Rev 043-01-0, Step 5.8

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0277 **Rev:** 000 **Rev Date:** 2/7/00 **RO Select:** Yes **SRO Select:** No **Points:** 1.00**Lic Level:** R **Difficulty:** 3 **Taxonomy:** C **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.2 to 41.9 **10CFR55\_43:** **Section:** 3.7 **Type:** Plant Systems **System Title:** Process Radiation Monitoring System**System Number** 073 **K/A:** A1.01 **RO Imp:** 3.2 **SRO Imp:** 3.5 **Tier:** 2 **Group:** 2**Description:** Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the PRM system controls including radiation levels.

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**Question:**

Given the following plant conditions:

- \* Plant at full power.
- \* Letdown Gross Activity Monitor (2RITS-4806-A) reads 2E+5 CPM.
- \* Letdown I-131 Activity Monitor (2RITS-4806-B) reads 1E+5 CPM.

Which of the following events occurred for the given indications?

- A. RCS chemical shock.
  - B. RCS crud burst.
  - C. Letdown Demineralizer exhausted.
  - D. Failed Fuel.
- 

**Answer:**

- D. Failed Fuel.
- 

**Notes:**

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**References:**STM 2-62, Radiation Monitoring System, Rev 4, Section 2.2.1

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0278 **Rev:** 000 **Rev Date:** 2/7/00 **RO Select:** Yes **SRO Select:** No **Points:** 1.00**Lic Level:** R **Difficulty:** 4 **Taxonomy:** Ap **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:****Section:** 3.3 **Type:** Plant Systems **System Title:** Emergency Core Cooling System (ECCS)**System Number** 006 **K/A:** A3.08 **RO Imp:** 4.2 **SRO Imp:** 4.3 **Tier:** 2 **Group:** 2**Description:** Ability to monitor automatic operation of the ECCS, including automatic transfer of ECCS flowpaths.

---

**Question:**

Given the following plant conditions:

- \* Large Break LOCA in progress.
- \* Refueling Water Tank (RWT) level is 6% and lowering.

Which of the following over-rides will be removed for the given conditions?

- A. HPSI Injection MOV 2CV-5015-1 over-ridden closed.
- B. ACW Supply Isolation MOV 2CV-1425-1 over-ridden open.
- C. CAMS Supply Isolation Valve 2SV-8263-2 over-ridden open.
- D. CCW Supply Isolation Valve 2CV-5255-1 over-ridden open.

---

**Answer:**

- B. ACW Supply Isolation MOV 2CV-1425-1 over-ridden open.

---

**Notes:**

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**References:**

STM 2-42, Service Water and Auxiliary Cooling Water Systems, Rev 11 Chg 1, Section 4.0.

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**Historical Comments:**



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**EXAM1***01-Mar-00*

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**QID:** 0279 **Rev:** 000 **Rev Date:** 2/7/00 **RO Select:** Yes **SRO Select:** No **Points:** 1.00**Lic Level:** R **Difficulty:** 4 **Taxonomy:** C **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:****Section:** 3.5 **Type:** Plant Systems **System Title:** Containment Spray System**System Number** 026 **K/A:** A3.01 **RO Imp:** 4.3 **SRO Imp:** 4.5 **Tier:** 2 **Group:** 2**Description:** Ability to monitor automatic operation of CSS, including pump starts and correct MOV positioning.

---

**Question:**

Given the following plant conditions:

- \* Mode 5.
- \* LPSI Pump 2P60B in service through "A" SDC Heat Exchanger.
- \* All ESF component breakers available.

Which of the following will occur if the handswitch for Cntmt Spray Header Isolation 2CV-5612-1 is taken to the OPEN position on Control Room Panel 2C17?

- A. Cntmt Building will be sprayed down with water from Reactor Coolant System (RCS).
- B. Cntmt Building will be sprayed down with water from Refueling Water Tank (RWT).
- C. Pump interlock will defeat opening of Cntmt Spray Header Isolation 2CV-5612-1.
- D. LPSI Pump 2P60B will trip due to contact in Cntmt Spray Header 2CV-5612-1 MOV logic.

---

**Answer:**

- A. Cntmt Building will be sprayed down with water from Reactor Coolant System (RCS).

---

**Notes:**

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**References:**

STM 2-08, Containment Spray System, Rev 4, Section 3.6.1.

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**Historical Comments:**

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**QID:** 0280 **Rev:** 000 **Rev Date:** 2/7/00 **RO Select:** Yes **SRO Select:** No **Points:** 1.00**Lic Level:** R **Difficulty:** 4 **Taxonomy:** An **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:****Section:** 3.4 **Type:** Plant Systems **System Title:** Reactor Coolant Pump System**System Number** 003 **K/A:** K3.02 **RO Imp:** 3.5 **SRO Imp:** 3.8 **Tier:** 2 **Group:** 1**Description:** Knowledge of the effect that a loss or malfunction of RCPs will have on S/Gs.

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**Question:**

Given the following plant conditions:

- \* 70% Reactor Power.
- \* 2P32A Reactor Coolant Pump (RCP) shaft shear occurs.

Which of the following will cause an automatic trip of the Reactor to occur for the given conditions?

- A. Low Pressurizer Pressure.
  - B. High Pressurizer Pressure.
  - C. Reactor Core Exit Quality of zero (0).
  - D. Asymmetric Steam Generator Trip.
- 

**Answer:**

- D. Asymmetric Steam Generator Trip.
- 

**Notes:**

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**References:**

1. 2105.001, CPC/CEAC Operations, Rev 023-01-0, Step 6.1.8.
  2. STM 2-65-1, CPC System, Rev 6, Section 2.10.5.4.
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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0281 **Rev:** 000 **Rev Date:** 2/8/00 **RO Select:** Yes **SRO Select:** No **Points:** 1.00**Lic Level:** R **Difficulty:** 3 **Taxonomy:** C **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:****Section:** 3.5 **Type:** Plant Systems **System Title:** Containment Cooling System (CCS)**System Number** 022 **K/A:** K2.01 **RO Imp:** 3.0 **SRO Imp:** 3.1 **Tier:** 2 **Group:** 1**Description:** Knowledge of power supplies to Containment Cooling Fans.

---

**Question:**

Given the following plant conditions:

- \* Service Water Pump 2P4B inoperable.
- \* Containment Cooler 2VSF-1B inoperable.
- \* Startup Transformer #2 locked out.
- \* Loss of 500KV buses.
- \* Loss of Coolant Accident (LOCA) has occurred.
- \* Both Emergency Diesel Generators have failed.

Which of the following will minimize peak containment pressure for the given conditions?

- A. Place AACDG on 2A1 Bus.
  - B. Place AACDG on 2A2 Bus.
  - C. Place AACDG on 2A3 Bus.
  - D. Place AACDG on 2A4 Bus.
- 

**Answer:**

- D. Place AACDG on 2A4 Bus.
- 

**Notes:**

The examinee must know that chilled water to containment will isolate on CIAS making A & B wrong. 2VSF-1B is powered from 2A3 so powering 2A4 will allow two Containment Coolers and a Spray Pump available to operate.

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**References:**

2107.002, ESF Electrical System Operation, Rev 014-00-0, Attachment A, C & D.

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0282 **Rev:** 000 **Rev Date:** 2/8/00 **RO Select:** No **SRO Select:** Yes **Points:** 1.00**Lic Level:** S **Difficulty:** 4 **Taxonomy:** An **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:****Section:** 3.4 **Type:** Plant Systems **System Title:** Steam Generator Systems**System Number** 035 **K/A:** K3.01 **RO Imp:** 4.4 **SRO Imp:** 4.6 **Tier:** 2 **Group:** 2**Description:** Knowledge of the effect that a loss or malfunction of the S/Gs will have on the RCS.

---

**Question:**

Given the following plant conditions:

- \* Ten (10) minutes post trip from full power.
- \* Pressurizer Level is 5% and lowering.
- \* Pressurizer pressure is 1400 psia and lowering.
- \* Steam Generator Pressures are 550 psia and lowering.
- \* Steam Generator Levels are 150 inches wide range and lowering.

Which of the following actions should be performed for the given conditions?

- A. Isolate Instrument Air to MSIVs to close 2CV-1010-1 and 2CV-1060-2.
- B. Isolate Main Steam to EFW Pump 2P7A by closing 2CV-1000-1 and 2CV-1050-2.
- C. Remove HPSI Pump 2P89C from Pull-To-Lock and maximize RCS Makeup.
- D. Go to HR-3 for once through cooling.

---

**Answer:**

- B. Isolate Main Steam to EFW Pump 2P7A by closing 2CV-1000-1 and 2CV-1050-2.

---

**Notes:**

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**References:**

2202.005, Excess Steam Demand, Rev 004-00-0, Step 15.

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0283 **Rev:** 000 **Rev Date:** 2/8/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 4 **Taxonomy:** An **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:****Section:** 3.3 **Type:** Plant Systems **System Title:** Emergency Core Cooling System**System Number** 006 **K/A:** K2.04 **RO Imp:** 3.6 **SRO Imp:** 3.8 **Tier:** 2 **Group:** 2**Description:** Knowledge of bus power supplies to ESFAS operated valves.

---

**Question:**

Given the following plant conditions:

- \* Post trip from full power.
- \* Loss of 4160V ESF Bus 2A2 has occurred.
- \* Loss Of Coolant Accident (LOCA) in progress.
- \* #2 Emergency Diesel Generator (EDG) failure has occurred.
- \* Refueling Water Tank (RWT) Level is 6%.
- \* HPSI Pump 2P89C is Out of Service.
- \* HPSI Pump 2P89A Recirc Isolation Valve 2CV-5126-1 breaker trips.

Which of the following actions should be performed for the given conditions?

- A. Place HPSI Pump 2P89A in Pull-To-Lock.
- B. Cross-tie 2A3 and 2A4 and start HPSI Pump 2P89B.
- C. Cross-tie 2Y1 and 2Y2 and close ESF Header Recirc Isolation 2CV-5628-2.
- D. Cross-tie 2B5 and 2B6 and close ESF Header Recirc Isolation 2CV-5628-2.

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**Answer:**

- D. Cross-tie 2B5 and 2B6 and close ESF Header Recirc Isolation 2CV-5628-2.

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**Notes:**

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**References:**

2107.002, ESF Electrical System Operation, Rev 014-01-0, Attachment D.

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0284 **Rev:** 000 **Rev Date:** 2/8/00 **RO Select:** No **SRO Select:** Yes **Points:** 1.00**Lic Level:** S **Difficulty:** 2 **Taxonomy:** C **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.8 & 41.10 **10CFR55\_43:** **Section:** 4.4 **Type:** CE EOP/AOP **System Title:** Functional Recovery**System Number** E09 **K/A:** EK1.2 **RO Imp:** 3.2 **SRO Imp:** 4.0 **Tier:** 1 **Group:** 2**Description:** Knowledge of the operational implications of normal, abnormal and emergency operating procedures associated with Functional Recovery.

---

**Question:**

Given the following plant conditions:

- \* Ten (10) minutes post trip from full power.
- \* "A" Main Steam Line Rad Monitor reads 500 mr/hr.
- \* "A" SG Pressure is 690 psia.
- \* "B" SG Pressure is 880 psia.
- \* RCS Pressure is 1650 psia.
- \* Pressurizer Level is 15%.

Which of the following procedures should be entered for the given conditions?

- A. 2202.003, Loss of Coolant Accident.
- B. 2202.004, Steam Generator Tube Rupture.
- C. 2202.005, Excess Steam Demand.
- D. 2202.009, Functional Recovery

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**Answer:**

- D. 2202.009, Functional Recovery

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**Notes:**

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**References:**

2202.001, Standard Post Trip Actions, Diagnostic Actions.

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0285 **Rev:** 000 **Rev Date:** 2/8/00 **RO Select:** Yes **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 4 **Taxonomy:** An **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.5 & 41.10 **10CFR55\_43:** **Section:** 4.2 **Type:** Generic AOP **System Title:** Loss of Reactor Coolant Makeup**System Number** 022 **K/A:** AK3.02 **RO Imp:** 3.5 **SRO Imp:** 3.8 **Tier:** 1 **Group:** 2**Description:** Knowledge of the reasons for actions contained in SOPs and EOPs for RCPs, loss of makeup, loss of charging, and abnormal charging as they apply to the Loss of Reactor Coolant Makeup.

---

**Question:**

Given the following plant conditions:

- \* Reactor trip for full power.
- \* Three (3) CEAs remain fully withdrawn.
- \* Unisolable Charging Header rupture.
- \* Reactor power indicates 5E-1% and stable.

Which of the following actions should be performed for the given conditions?

- A. Perform an RCS cooldown to Shutdown Cooling System operating conditions.
  - B. De-energize MCCs 2B7 and 2B8 from Control Room.
  - C. Start one HPSI pump and open one HPSI Injection MOV and depressurize RCS to 1300 psia.
  - D. Manually actuate SIAS and depressurize RCS to 1300 psia.
- 

**Answer:**

- C. Start one HPSI pump and open one HPSI Injection MOV and depressurize RCS to 1300 psia.
- 

**Notes:**

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**References:**

2202.009, Functional Recovery, Rev 004-01-0, Step 11.A  
2202.009, Functional Recovery, Rev 004-01-0, Reactivity Control Decision Tree.  
2202.009, Functional Recovery, Rev 004-01-0, RC-3, Step 4.0.

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0286 **Rev:** 000 **Rev Date:** 2/8/00 **RO Select:** No **SRO Select:** Yes **Points:** 1.00**Lic Level:** S **Difficulty:** 4 **Taxonomy:** Ap **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:****Section:** 4.1 **Type:** Generic EOP **System Title:** Small Break LOCA**System Number** 009 **K/A:** EA1.16 **RO Imp:** 4.2 **SRO Imp:** 4.2 **Tier:** 1 **Group:** 2**Description:** Ability to operate and monitor subcooling margin monitors as they apply to a small break LOCA.

---

**Question:**

Given the following plant conditions:

- \* Ten (10) minutes post trip from full power.
- \* Containment Radiation Monitors read 2 Rem and slowly rising.
- \* RCS Pressure is 2000 psia and rising.
- \* Pressurizer Level is 38% and rising.
- \* Containment Sump Level has increased 4% in ten (10) minutes.
- \* Containment Pressure has increased from 14.0 to 14.6 psia in ten (10) minutes.

Which of the following actions should be performed for the given conditions?

- A. Depressurize RCS to maximize HPSI flow.
  - B. Depressurize RCS to within 100 psia above RCP NPSH.
  - C. Establish normal Mode 3 Hot Standby conditions.
  - D. Secure RCPs and perform a Natural Circulation Cooldown.
- 

**Answer:**

- B. Depressurize RCS to within 100 psia above RCP NPSH.
- 

**Notes:**

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**References:**

2203.016, Excess RCS Leakage, Rev 008-03-0, Step 26.

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**Historical Comments:**



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**EXAM1**01-Mar-00

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**QID:** 0287 **Rev:** 000 **Rev Date:** 2/8/00 **RO Select:** No **SRO Select:** Yes **Points:** 1.00**Lic Level:** S **Difficulty:** 2 **Taxonomy:** K **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.8 & 41.10 **10CFR55\_43:** **Section:** 4.2 **Type:** Generic AOP **System Title:** Inoperable/Stuck Control Rod**System Number** 005 **K/A:** AK1.06 **RO Imp:** 2.9 **SRO Imp:** 3.8 **Tier:** 1 **Group:** 1**Description:** Knowledge of the operational implications and bases for power limit, for rod misalignment.

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**Question:**

Given the following plant conditions:

- \* Plant operating at 80% power.
- \* Power Reduction to 70% in progress.
- \* Reg Group 6 CEAs inserted.
- \* CEAC1 and CEAC2 alarms received for CEA deviation.
- \* CEA 46 indicates 130" withdrawn.
- \* All other Reg Group 6 CEAs indicate 120" withdrawn.
- \* CEA 46 determined to be immovable but trippable.

Which of the following actions should be performed for the given conditions?

- A. Trip the reactor immediately.
  - B. Perform a 20% power reduction in fifteen (15) minutes.
  - C. Perform a 20% power reduction in one (1) hour.
  - D. Withdraw the other Reg Group 6 CEAs to 130 inches withdrawn in fifteen (15) minutes.
- 

**Answer:**

- A. Trip the reactor immediately.
- 

**Notes:**

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**References:**

2203.003, CEA Malfunction, Rev 014-01-0, Step 13.  
2203.003, CEA Malfunction Basis Document, Rev 014-01-0, Step 13.

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0288 **Rev:** 000 **Rev Date:** 2/8/00 **RO Select:** No **SRO Select:** Yes **Points:** 1.00**Lic Level:** S **Difficulty:** 2 **Taxonomy:** K **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.10 **10CFR55\_43:****Section:** 2.4 **Type:** Generic K/A **System Title:** Emergency Procedures/Plan**System Number** 026 **K/A:** 2.4.24 **RO Imp:** 3.3 **SRO Imp:** 3.7 **Tier:** 1 **Group:** 1**Description:** Knowledge of loss of cooling water procedures.

---

**Question:**

Which of the following actuations will isolate Service Water (SW) to the Component Cooling Water (CCW) Heat Exchangers?

- A. SIAS and CIAS.
- B. SIAS and MSIS.
- C. CIAS and RAS.
- D. MSIS and CCAS.

---

**Answer:**

- B. SIAS and MSIS.

---

**Notes:**

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**References:**

1. STM 2-42 Service Water & ACW Systems, Rev 11 Chg 1, Section 4.0
2. 2202.010, Standard Attachments, Rev 005-01-0, Attachments 2 and 4.

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0290 **Rev:** 000 **Rev Date:** 2/8/00 **RO Select:** No **SRO Select:** Yes **Points:** 1.00**Lic Level:** S **Difficulty:** 3 **Taxonomy:** Ap **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:****Section:** 4.2 **Type:** Generic APE **System Title:** Fuel Handling Incidents**System Number** 036 **K/A:** AA1.04 **RO Imp:** 3.1 **SRO Imp:** 3.7 **Tier:** 1 **Group:** 3**Description:** Ability to operate and/or monitor fuel handling equipment during a fuel handling incident.

---

**Question:**

Given the following conditions:

- \* Fuel off-load in progress.
- \* Spent fuel assembly in main bridge mast.
- \* Upender in Containment.
- \* Main Bridge power supply reel faults to ground.

Which of the following action should be performed for the given conditions?

- A. Immediately evacuate Containment.
  - B. Immediately start Containment Purge.
  - C. Manually place fuel assembly in storage rack.
  - D. Manually place fuel assembly in upender and transfer to Spent Fuel Pool.
- 

**Answer:**

- C. Manually place fuel assembly in storage rack.
- 

**Notes:**

Containment does not need to be evacuated since no radiation release is in progress.

Containment purge may need to be secured if a release potential exists.

The fuel assembly should be placed in a safe location but cannot be transferred to the Spent Fuel Pool because a loss of power to the main bridge will prevent lowering the upender due to an interlock on bridge location being lost.

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**References:**

1. 2502.001, Refueling Shuffle, Rev 028-02-1, Steps 6.3 & 6.16.
  2. 2502.001, Refueling Shuffle, Rev 028-02-1, Attachment M, Steps 3.0 & 4.2.3.
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**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0291 **Rev:** 000 **Rev Date:** 2/8/00 **RO Select:** No **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** C **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.7 **10CFR55\_43:** **Section:** 3.2 **Type:** Plant Systems **System Title:** Pressurizer Level Control**System Number** 011 **K/A:** K4.06 **RO Imp:** 3.3 **SRO Imp:** 3.7 **Tier:** 2 **Group:** 2**Description:** Knowledge of PZR LCS design feature(s) and/or interlocks which provide for Letdown Isolation.

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**Question:**

Given the following conditions:

- \* Full power.
- \* Charging Pumps Select Switch in the B & C position.
- \* Breaker 2B52-A5, 2P36A supply breaker trips.

Which of the following will occur for the given conditions?

- A. "B" Charging pump will immediately auto start.
  - B. "C" Charging pump will auto start on ten (10) second time delay.
  - C. Letdown will isolate on 2% level deviation.
  - D. Letdown will isolated on high temperature.
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**Answer:**

- D. Letdown will isolated on high temperature.
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**Notes:**

A & B are incorrect because charging pumps auto start on level deviation.  
C is incorrect because letdown will go to minimum but will not isolate on level deviation.  
D is correct because if Regen Hx cooling flow is lost then letdown temperature will slowly rise until letdown isolates.

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**References:**

1. 2203.012L, Annunciator 2K12 Corrective Actions, Rev 029-00-0, 2K12-B1.
  2. STM 2-04, CVCS System, Rev 8, Section 2.1.2
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**Historical Comments:**

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**EXAM1**01-Mar-00

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**QID:** 0292 **Rev:** 000 **Rev Date:** 2/8/00 **RO Select:** No **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** Ap **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.2 to 41.9 **10CFR55\_43:** **Section:** 3.6 **Type:** Plant Systems **System Title:** A.C. Electrical Distribution**System Number** 062 **K/A:** K1.02 **RO Imp:** 4.1 **SRO Imp:** 4.4 **Tier:** 2 **Group:** 2**Description:** Knowledge of the physical connections and/or cause-effect relationships between the AC Distribution System and the ED/G.

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**Question:**

Given the following plant conditions:

- \* Full power operation.
- \* 480 V ESF Load Center 2B5 Feeder Breaker (2B512) trips.

Which of the following actions should be performed for the given conditions?

- A. Place #1 EDG start switch in Pull-To-Lock.
- B. Secure #1 EDG at local handswitch.
- C. Crosstie 480 V ESF Load Center 2B5 to 2B6.
- D. Manually trip the reactor.

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**Answer:**

- B. Secure #1 EDG at local handswitch.

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**Notes:**

The #1 EDG will auto start on undervoltage and energize 4160V bus 2A3. There is no cooling water to the diesel since the 480V power is lost so the diesel must be secured. It cannot be secured from the start switch because of the undervoltage signal is still present. Cross-tying vital buses at power would require entry into T.S. 3.0.3. The reactor may eventually require a manual trip, but only after trouble-shooting of recovery of 2B5 has been assessed.

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**References:**

2202.001, Standard Post Trip Actions, Rev 004-00-0, Step 4.G Contingency.

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**Historical Comments:**

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**EXAM1***01-Mar-00*

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**QID:** 0293 **Rev:** 000 **Rev Date:** 2/8/00 **RO Select:** No **SRO Select:** Yes **Points:** 1.00**Lic Level:** RS **Difficulty:** 3 **Taxonomy:** C **Source:** New **Originator:** Hatman**10CFR55\_41:** 41.5 **10CFR55\_43:** 43.5**Section:** 3.5 **Type:** Plant Systems **System Title:** Containment Spray**System Number** O26 **K/A:** A2.04 **RO Imp:** 3.9 **SRO Imp:** 4.2 **Tier:** 2 **Group:** 1**Description:** Ability to predict the impacts of the failure of a spray pump on the CSS.

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**Question:**

Which of the following will have the greatest impact on RCS heat removal for the given conditions?

- \* 2 hours post trip from full power.
- \* Large Break LOCA.

- A. "A" LPSI Pump failure.
  - B. "A" Spray Pump failure.
  - C. "A" Charging Pump failure.
  - D. #1 EDG failure.
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**Answer:**

- B. "A" Spray Pump failure.
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**Notes:**

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**References:**STM 2-08, Containment Spray System, Rev 4.0, Section 1.1.

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**Historical Comments:**

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