**Question #1 Details**

## EQ-OP-802-2001-000-S001-001 2004 SRO NRC Exam

Question Text

The reactor is operating at 100% power when a Loss of Power Event occurs. The CRNSO reports the following:

345KV mat power indicating lights.....off
EDG 13.....NOT running
EDG 14.....carrying 65F Bus
65E, 72E, 13EC, and 72EC.....off
E6 and E8 breakers.....tripped

What actions must be directed?

**Response A**

Start CTG 11-1 in accordance with 23.324.
**Incorrect because CTG 11-1 is not required for operation with a loss of 345Kv.**

**Response B**

Perform Rapid Power Reduction in accordance with 23.623.
**Incorrect because Loss of 345Kv Immediate Actions direct placing mode switch in Shutdown.**

**Response C - Correct Answer**

Perform Loss of Bus 72E in accordance with 20.300.72E
**Reference: 20.300.65E, StepB.2, Page 3 of 17**

**Response D**

Perform Emergency Diesel Generator Failure in accordance with 20.307.01.
**Incorrect because EDG13 is not supposed to start with bus 65E locked out.**

**Not Archived**

| | | | |
|---|---|---|---|
| **Author:** | CADDEN | **Keywords:** | 4160/480V ELEC |
| **Date Last Used:** | | | AOP |
| **Time:** | 4 | | EDG |
| **Points:** | 1 | | 2004 NRC SRO Question |
| **Difficulty:** | 2 | | |

| | | | | | |
|---|---|---|---|---|---|
| **Question ID:** | 35280 | | | | |
| **Parent ID:** | 0 | | | | |
| **Child ID:** | 0 | | | | |

| KA System | KA Number | RO Value | SRO Value |
|---|---|---|---|
| 295003 | AA2.01 | 3.4 | 3.7 |
| 295003 | AA2.04 | | 3.7 |

| | |
|---|---|
| ☐ RO | ☑ ILO |
| ☑ SRO | ☐ ESP |
| ☐ STAC | ☐ Part A |
| ☐ STAI | ☐ Part B |
| ☐ LOR | ☐ Open Ref. |
| ☐ NOC | ☐ Close Ref. |
| ☐ INO | ☐ Static |

**References:**

20.300.65E
MOP04
20.307.01

**Question #2 Details**

## EQ-OP-802-2001-000-S001-002 2004 SRO NRC Exam

Question Text

The reactor is shutdown. All systems operated normally during the shutdown.

The following Reactor Building Closed Cooling Water System (RBCCW) conditions exist:

North RBCCW pump.....running
Center RBCCW Pump.....running

The North RBCCW pump trips, and the shift enters 20.127.01, Loss Of Reactor Building Closed Cooling Water System.

The CRNSO started the South RBCCW pump and EECW did NOT actuate.

Based on these conditions, what is the condition of the plant, and what action will the CRS direct?

**Response A - Correct Answer**
RBCCW flow is normal, exit 20.127.01.
**Reference:** 20.127.01, **Step A.2**

**Response B**
RBCCW flow is normal, initiate Division 1 and 2 of EECW.
**RBCCW flow is normal, but initiating EECW is not necessary.**

**Response C**
RBCCW flow to essential loads is isolated, initiate Division 1 and 2 of EECW.
**Confusion over the EECW actuation / RBCCW isolation / Isolation from the drywell makes this plausible.**

**Response D**
RBCCW flow to the drywell is isolated, trip the Reactor Recirculation Pumps within 2 minutes.
**Confusion over the EECW actuation / RBCCW isolation / Isolation from the drywell makes this plausible. This is also an override in 20.127.01**

**Author:** CADDEN **Keywords:** RBCCW/EECW **Not Archived**
**Date Last Used:**
**Time:** 4 **Question ID:** 35473
**Points:** 1 **Parent ID:** 0
**Difficulty:** 2 **Child ID:** 0

| KA System | KA Number | RO Value | SRO Value |
|---|---|---|---|
| 400000 | K1.02 | 3.2 | 3.4 |
| 295018 | A2.04 | | 2.9 |

☐ RO ☑ ILO
☑ SRO ☐ ESP
☐ STAC ☐ Part A
☐ STAI ☐ Part B
☐ LOR ☐ Open Ref.
☐ NOC ☑ Close Ref.
☐ INO ☐ Static

**References:**
ST-OP-315-0067-001
20.127.01

**Question #3 Details**

## EQ-OP-315-0141-000-C005-002 2004 SRO NRC Exam

Question Text

The plant is in mode 4 with Shutdown Cooling in operation. Plant conditions are as follows:
E1150-F008, SDC Outboard Iso. vlv is shut
E1150-F009, SDC Inboard Iso. vlv is shut
RPV Level is 184 inches
RPV Pressure is 95 psig

Based on the information above, what action would the SRO direct and why?

**Response A**

Condition C of 20.205.01, Loss of SDC for level, to mitigate a Loss of Coolant Accident.
**Incorrect because Level isolation is <173.4"**

**Response B**

Condition C of 20.205.01, Loss of SDC for level, to prevent temperature stratification.
**Incorrect because Level isolation is <173.4"**

**Response C**

Condition D of 20.205.01, Loss of SDC for pressure, to maintain adequate NPSH to operating RHR pumps.
**Incorrect because the pressure isolation is based on high pressure, not low pressure.**

**Response D - Correct Answer**

Condition D of 20.205.01, Loss of SDC for pressure, to prevent over-pressurization of SDC piping.
**Reference: ST-OP-315-0041-001**

**Author:** CADDEN
**Date Last Used:**
**Time:** 0
**Points:** 1
**Difficulty:** 3

**Keywords:** RHR - SDC
2004 NRC SRO Question

**Not Archived**

**Question ID:** 35281
**Parent ID:** 0
**Child ID:** 0

| KA System | KA Number | RO Value | SRO Value |
|---|---|---|---|
| 295021 | A2.06 | | 3.3 |

- ☐ RO
- ☑ SRO
- ☐ STAC
- ☐ STAI
- ☐ LOR
- ☐ NOC
- ☐ INO
- ☑ ILO
- ☐ ESP
- ☐ Part A
- ☐ Part B
- ☐ Open Ref.
- ☑ Close Ref.
- ☐ Static

**References:**

20.205.01, Loss of Shutdown Cooling
23.205, RHR System
ST-OP-315-0041-001

**Question #4 Details**

## EQ-OP-802-3004-000-0109-010 2004 SRO NRC Exam

Question Text

A major plant transient has occurred causing the following plant conditions:
Drywell pressure is 8 psig and rising slowly
Torus pressure is 7.5 psig and rising slowly
Drywell temperature is 153°F and rising slowly
Torus temperature is 102°F and rising slowly
Torus water level is 18 inches

Based on the information above, which of the following would be the next action to take, AND what is the basis for taking this action?

**Response A - Correct Answer**

Initiate Torus sprays to prevent "chugging".
**Reference: ST-OP-802-3004-001, EOP Primary Containment Control**

**Response B**

Initiate Primary Containment Vent to prevent "chugging".
**The stated conditions do not warrant venting the containment**

**Response C**

Initiate Torus sprays to decrease the percentage of non-condensibles in the Drywell.
**The Torus Spray Initiation Pressure is defined to be the lowest torus pressure which can occur when 95% of the non-condensibles in the drywell have been transferred to the airspace of the torus.**

**Response D**

Initiate Primary Containment Vent to decrease the percentage of non-condensibles in the Drywell.
**The stated conditions do not warrant venting the containment**

**Author:** CADDEN
**Date Last Used:**
**Time:** 0
**Points:** 1
**Difficulty:** 2

**Keywords:** 2004 NRC SRO Question EOP PCP

**Not Archived**

**Question ID:** 35282
**Parent ID:** 0
**Child ID:** 0

| KA System | KA Number | RO Value | SRO Value |
|---|---|---|---|
| 295024 | A2.01 | | 4.4 |

- ☐ RO
- ☑ SRO
- ☐ STAC
- ☐ STAI
- ☐ LOR
- ☐ NOC
- ☐ INO
- ☑ ILO
- ☐ ESP
- ☐ Part A
- ☐ Part B
- ☐ Open Ref.
- ☐ Close Ref.
- ☐ Static

**References:**

ST-OP-802-3004-001, EOP Primary Containment Control
29.100.01, Sh 2

**Question #5 Details**

## EQ-OP-315-0105-000-C013-001 2004 SRO NRC Exam

Question Text

The plant is operating at 100% power when the D MSIV outboard isolation valve is closed accidentally during testing.

The following conditions exist:

RPV pressure.....1050 psig
RPV level.....195 inches, stable

What action will the CRS direct and why?

**Response A - Correct Answer**

Lower power, RPV pressure is above the Technical Specification limit.

**Reference:** Tech. Spec 3.4.11

**Response B**

No action required, RPV pressure is below the RPS trip setpoint.

**Above TS limit**

**Response C**

Adjust pressure regulator setpoint, RPV pressure is above the RPS alarm setpoint.

**Incorrect, above the TS limit**

**Response D**

Raise reactor flow limiter setpoint, RPV pressure is above the Technical Specification limit.

**Incorrect, above the TS limit**

**Author:** BOLLINGER **Keywords:** 2004 NRC SRO Question **Not Archived**

**Date Last Used:**
**Time:** 2
**Points:** 1
**Difficulty:** 2

**Question ID:** 35283
**Parent ID:** 0
**Child ID:** 0

| KA System | KA Number | RO Value | SRO Value |
|---|---|---|---|
| 295025 | A2.02 | 4.2 | 4.2 |

☐ RO ☑ ILO
☑ SRO ☐ ESP
☐ STAC ☐ Part A
☐ STAI ☐ Part B
☐ LOR ☐ Open Ref.
☐ NOC ☑ Close Ref.
☐ INO ☐ Static

**References:**

Tech. Spec 3.4.11

**Question #6 Details**

## EQ-OP-802-3002-000-0007-040 2004 SRO NRC Exam

Question Text

A plant transient has occurred which has resulted in the following conditions:

Torus level is -20 inches and lowering.
RPV pressure is 850 psig and steady.

(1) Given these conditions, which of the following is the minimum temperature that would require RPV Emergency Depressurization?
(2) What is the basis for the RPV Emergency Depressurization?

**Response A**

(1) 165°F (2) Drywell design temperature
**Incorrect because you must you the next highest pressure CURVE**

**Response B - Correct Answer**

(1) 170°F (2) Torus design temperature
**Reference:** **ST-OP-802-3002-001**

**Response C**

(1) 175°F (2) Drywell design temperature
**Incorrect because the limit is based on Torus temperature**

**Response D**

(1) 180°F (2) Torus design temperature
**Incorrect because you must you the next highest pressure CURVE**

**Author:** CADDEN
**Date Last Used:**
**Time:** 0
**Points:** 1
**Difficulty:** 2

**Keywords:** EOP TWT
2004 NRC SRO Question

**Not Archived**

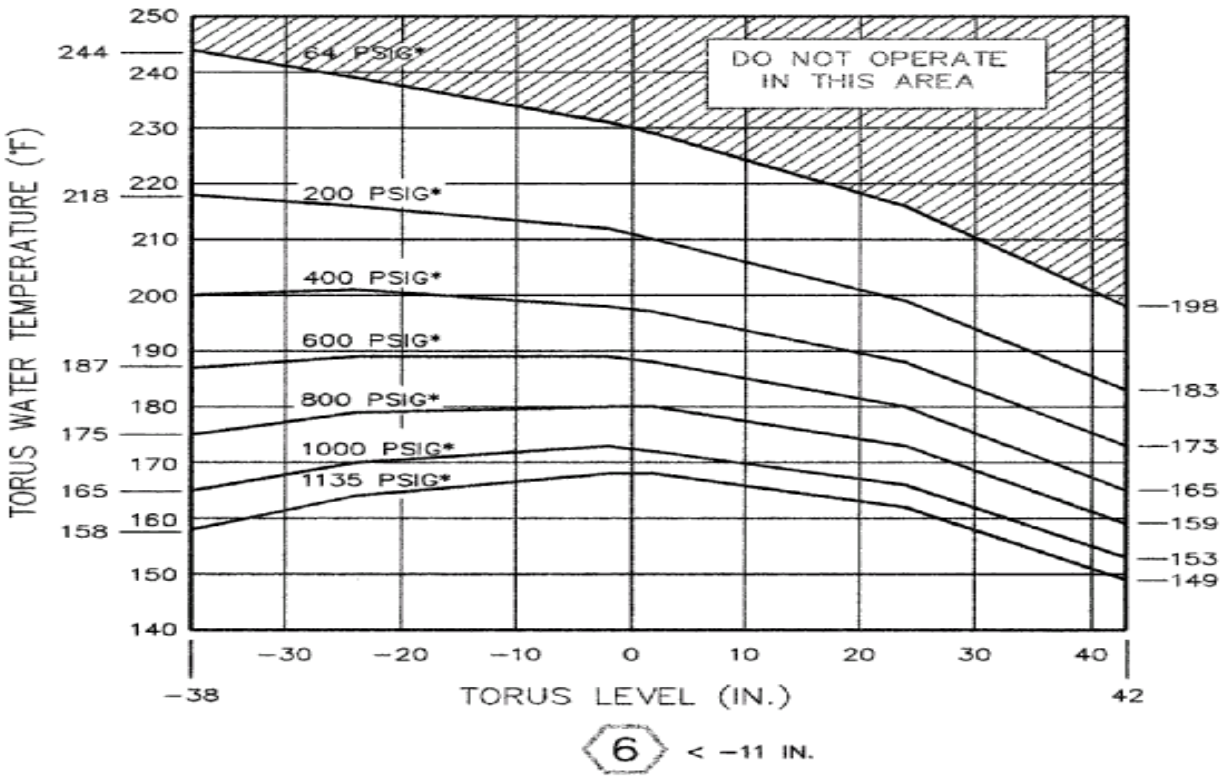
**Question ID:** 35286
**Parent ID:** 0
**Child ID:** 0

| KA System | KA Number | RO Value | SRO Value |
|---|---|---|---|
| 295030 | A2.03 | | 3.9 |

| | |
|---|---|
| ☐ RO | ☑ ILO |
| ☑ SRO | ☐ ESP |
| ☐ STAC | ☐ Part A |
| ☐ STAI | ☐ Part B |
| ☐ LOR | ☐ Open Ref. |
| ☐ NOC | ☑ Close Ref. |
| ☐ INO | ☐ Static |

**References:**
29.100.01 Sh 6
ST-OP-802-3002-001

Question # 6 Handout




* RPV PRESSURE. DO NOT INTERPOLATE BETWEEN HCL CURVES, USE NEXT HIGHER PRESSURE CURVE.

**Question #7 Details**

## EQ-OP-802-3003-000-0019-011 2004 SRO NRC Exam

Question Text

A valid Reactor Scram signal was received and the rods failed to insert. The following are the current plant conditions:
Reactor Power is 9%
Torus temperature is 102°F and slowly rising
Drywell pressure is 0.75 psig and slowly rising
Reactor water level is 45 inches on the Wide Range level indicator
Standby Liquid Control has been started and is injecting to the RPV
SRVs are controlling RPV pressure
Terminate and Prevent for level has been performed
What level band should be directed **per the EOPs**, AND what is the basis for the bands upper limit?

**Response A**

-28 to 50 inches. Sufficiently preheats incoming feedwater
**50 inches does not sufficiently preheat feedwater.**

**Response B**

-28 to 50 inches. Suppresses Reactor power to the lowest practical level
**T&P for level, not power because still <BIIT.**

**Response C - Correct Answer**

-28 to 114 inches. Sufficiently preheats incoming feedwater
**Reference:** ST-OP-802-3003

**Response D**

-28 to 114 inches. Suppresses Reactor power to the lowest practical level
**114 inches does not suppress reactor power**

**Author:** CADDEN
**Date Last Used:**
**Time:** 2
**Points:** 1
**Difficulty:** 2

**Keywords:** ATWS
EOP RPV Level
2004 NRC SRO Question

**Not Archived**
**Question ID:** 35287
**Parent ID:** 0
**Child ID:** 0

| KA System | KA Number | RO Value | SRO Value |
|---|---|---|---|
| generic | 2.1.6 | | 4.3 |

| | |
|---|---|
| ☐ RO | ☑ ILO |
| ☑ SRO | ☐ ESP |
| ☐ STAC | ☐ Part A |
| ☐ STAI | ☐ Part B |
| ☐ LOR | ☐ Open Ref. |
| ☐ NOC | ☑ Close Ref. |
| ☐ INO | ☐ Static |

**References:**
ST-OP-802-3003

**Question #8 Details**

## EQ-OP-802-3005-000-0001-020 2004 SRO NRC Exam

Question Text

Following an Emergency Situation in the plant, dose assessment results indicate a dose at the site boundary of 1200 mr TEDE for the duration of the release.

Based on this information, which Emergency Class would be declared and why?

**Response A**

Site Area Emergency because releases are expected to exceed Environmental Protection Agency Protective Action guideline exposure at or near the site boundary.
**Above the limits for SAE**

**Response B**

Site Area Emergency because releases are NOT expected to exceed Environmental Protection Agency Protective Action guideline exposure except at or near the site boundary.
**Above the limits for SAE**

**Response C - Correct Answer**

General Emergency because releases can be reasonably expected to exceed Environmental Protection Agency (EPA) Protection Action Guidelines exposure levels offsite for more than the immediate site area.
**Correct classification, correct reason. Reference:** EP-101 Step 4.5.4

**Response D**

General Emergency because releases are NOT expected to exceed Environmental Protection Agency (EPA) Protection Action Guidelines exposure levels offsite for more than the immediate site area.
**Correct classification, incorrect reason.**

**Author:** BARKER **Keywords:** **Not Archived**
**Date Last Used:**
**Time:** 3 **Question ID:** 35442
**Points:** 1 **Parent ID:** 0
**Difficulty:** 1 **Child ID:** 0

| KA System | KA Number | RO Value | SRO Value |
|---|---|---|---|
| 295038 | K2.05 | | 4.7 |

☐ RO ☑ ILO
☑ SRO ☐ ESP
☐ STAC ☐ Part A
☐ STAI ☐ Part B
☐ LOR ☐ Open Ref.
☐ NOC ☑ Close Ref.
☐ INO ☐ Static

**References:**
EP-101 Step 4.5.4

**Question #9 Details**

## EQ-OP-315-0127-000-A007-001 2004 SRO NRC Exam

Question Text

While the reactor is operating in normal two-loop operation at 85% power and 80% flow, a Main Steam Isolation Valve disc becomes separated from the stem and rapidly shuts. During the transient the following indications are observed:

APRMs spike to 113.5% and return to 100%
Reactor Pressure spikes to 1120 psig and returns to 1000 psig
Reactor water level lowers to 182" and returns to 216 inches

What Technical Specification allowable value has been exceeded?

**Response A**

Reactor water level
**Not > Safety system setting per ITS**

**Response B**

ARPM fixed neutron flux
**Not > Safety system setting per ITS**

**Response C - Correct Answer**

Reactor steam dome pressure
**Reference: ITS 3.3.1.1**

**Response D**

APRM simulated thermal power
**Not > Safety system setting per ITS**

**Author:** CADDEN
**Date Last Used:**
**Time:** 0
**Points:** 1
**Difficulty:** 1

**Keywords:** 2004 NRC SRO Question
TECH SPECS

**Not Archived**

**Question ID:** 35289
**Parent ID:** 0
**Child ID:** 0

| KA System | KA Number | RO Value | SRO Value |
|---|---|---|---|
| 295007 | A2.01 | | 4.1 |

- ☐ RO
- ☑ SRO
- ☐ STAC
- ☐ STAI
- ☐ LOR
- ☐ NOC
- ☐ INO
- ☑ ILO
- ☐ ESP
- ☐ Part A
- ☐ Part B
- ☐ Open Ref.
- ☑ Close Ref.
- ☐ Static

**References:**
ITS 3.3.1.1

**Question #10 Details**

## EQ-OP-802-3004-000-0004-005 2004 SRO NRC Exam

Question Text

The plant was operating at 100% when, due to an operator error, the Drywell (DW) Fan Master CMC switch for Division 1 DW Cooling fans was placed in All Stop.
The following conditions exist:
Alarm 8D41 "Div 1 High Drywell Temperature".....lit
Alarm 17D41 "Div 2 High Drywell Temperature".....lit
Confirmed Average Drywell Temperature.....149°F
Drywell Pressure.....0.68 psig
What actions should the CRS direct?

**Response A - Correct Answer**

Enter 29.100.01 Sheet 2, Primary Containment Control, and operate all available DW cooling
**Reference:** 29.100.01 Sheet 2, ST-OP-802-3004-001, ST-OP-802-3004-001(2)

**Response B**

Enter 29.100.01 Sheet 2, Primary Containment Control, and shutdown Reactor Recirc pumps
**Incorrect because this step is taken when DW pressure is >1.68 psig**

**Response C**

Place RBCCW supplemental cooling in service per 23.127.01, and monitor DW temperature and pressure
**Incorrect because this action is directed by ARPs. The conditions listed are EOP entry conditions.**

**Response D**

Lower DW pressure per 23.406, Primary Containment Nitrogen Inerting and Purge, and monitor DW temperature and pressure
**Incorrect because DW pressure is still within allowable limits**

**Author:** CADDEN
**Date Last Used:**
**Time:** 0
**Points:** 1
**Difficulty:** 2

**Keywords:** DW COOLING
2004 NRC SRO Question

**Not Archived**

**Question ID:** 35290
**Parent ID:** 0
**Child ID:** 0

| KA System | KA Number | RO Value | SRO Value |
|---|---|---|---|
| 295010 | A2.06 | 3.6 | 3.6 |
| 295010 | K3.02 | 3.4 | 3.4 |
| 2.1.6 | | 2.1 | 4.3 |

☐ RO ☑ ILO
☑ SRO ☐ ESP
☐ STAC ☐ Part A
☐ STAI ☐ Part B
☐ LOR ☐ Open Ref.
☐ NOC ☑ Close Ref.
☐ INO ☐ Static

**References:**
ST-OP-802-3004-001
29.100.01 Sheet 2

**Question #11 Details**

# EQ-OP-802-3004-000-0009-025 2004 SRO NRC Exam

Question Text

The CRS is evaluating the need for drywell sprays during implementation of the EOPs. Which one of the following states the significance of reaching +50 inches Torus water level?

**Response A**

Torus level increasing to this point following the LOCA will compress the non-condensables exhausted from the drywell to the torus, resulting in opening the vacuum breakers.
**Incorrect because torus water level is >vacuum breakers, so they will not open**

**Response B**

Torus venting cannot be performed above this level if it becomes necessary to vent the Primary Containment.
**Incorrect because Torus Venting limit is >570 ft in containment, which is Top of Torus area.**

**Response C - Correct Answer**

Vacuum Breakers will be covered with water and unable to relieve torus pressure to the drywell.
**Reference:** 29.100.01, sheet 2, ST-OP-802-3004-0001

**Response D**

Above this level there is insufficient free volume to accommodate the non-condensable gases driven into the torus by the LOCA.
**Incorrect because no steps in the Torus Water Level EOP is based on Non-condensable gases.**

**Author:** CADDEN
**Date Last Used:** 10/22/1999
**Time:** 0
**Points:** 1
**Difficulty:** 2

**Keywords:** 2004 NRC SRO Question EOP TWL

**Not Archived**

**Question ID:** 35291
**Parent ID:** 0
**Child ID:** 0

| KA System | KA Number | RO Value | SRO Value |
|---|---|---|---|
| 295029 | A2.01 | | 3.9 |

☐ RO ☑ ILO
☑ SRO ☐ ESP
☐ STAC ☐ Part A
☐ STAI ☐ Part B
☐ LOR ☐ Open Ref.
☐ NOC ☑ Close Ref.
☐ INO ☐ Static

**References:**

29.100.01, sheet 2
ST-OP-802-3004-0001

**Question #12 Details**

## EQ-OP-802-3004-000-0009-026 2004 SRO NRC Exam

Question Text

The reactor was operating at 100 % power when a LOCA occurred which caused RPV water level to initially lower below TAF. RPV water level has been raised above TAF and the following conditions exist :

RPV pressure.....600 psig
RPV water level.....+ 5 inches (slowly rising)
Drywell pressure.....7 psig (slowly rising)
Drywell temperature.....185°F (rising)
Torus $H_2$ concentration.....6.5 %
Torus $O_2$ concentration.....6 %
RHR System.....In Torus Cooling/Torus Sprays on Division one
Rx is Shutdown.....all rods are inserted

Given the above parameters, select which of the following actions the CRS would direct the operating crew to execute:

**Response A**

Initiate Drywell sprays.
**Can not initiate Drywell sprays until >9 psig in the Torus per PCP-6**

**Response B - Correct Answer**

Emergency depressurize the RPV.
**Reference:** **29.100.01 SH 4, Rev. 7 (CC)**

**Response C**

Place the Thermal Recombiners in service.
**Can not place thermal recombiners in service with H2 concentration >6%**

**Response D**

Vent the drywell irrespective of radioactivity release rate.
**No Drywell $O_2$/$H_2$ parameters given, therefore no basis to vent the drywell**

**Author:** CADDEN
**Date Last Used:**
**Time:** 5
**Points:** 1
**Difficulty:** 3

**Keywords:** EOP PC H2/O2
2004 NRC SRO Question

**Not Archived**

**Question ID:** 35294
**Parent ID:** 0
**Child ID:** 0

| KA System | KA Number | RO Value | SRO Value |
|---|---|---|---|
| 500000 | A2.04 | | 3.3 |

☐ RO ☑ ILO
☑ SRO ☐ ESP
☐ STAC ☐ Part A
☐ STAI ☐ Part B
☐ LOR ☐ Open Ref.
☐ NOC ☑ Close Ref.
☐ INO ☐ Static

**References:**
29.100.01 SH 4, Rev. 7 (CC)

**Question #13 Details**

## EQ-OP-315-0141-000-A021-010 2004 SRO NRC Exam

Question Text

The plant was operating at 65% power. A seismic event occurred which resulted in a loss of offsite power and a feedwater rupture outside of containment.
The following conditions exist:
EDGs 11 and 12 are tripped.
EDGs 13 and 14 are running loaded.
RPV Level 155"
RPV pressure 650 psig
(1) What RHR piping system flowpaths are available for use and (2) what is the earliest you can direct opening the RHR LPCI injection valve to mitigate the loss of coolant event?

**Response A - Correct Answer**

(1) Both Divisions for LPCI injection mode. Only Division 2 for Torus Cooling/Spray and DW Spray

(2) 461 psig

**Reference:** ST-OP-315-0141, 23.205 (page 202)

**Response B**

(1) Only Division 2 for LPCI injection mode. Both Divisions for Torus Cooling/Spray and DW Spray

(2) 461 psig

**Incorrect because Division 1 Torus cooling/spray and DW spray valves have no power.**

**Response C**

(1) Both Divisions for LPCI injection mode. Only Division 2 for Torus Cooling/Spray and DW Spray

(2) 295 psig

**Incorrect because 461 psig is the injection valve permissive pressure**

**Response D**

(1) Only Division 2 for LPCI injection mode. Both Divisions for Torus Cooling/Spray and DW Spray

(2) 295 psig

**Incorrect because 461 psig is the injection valve permissive pressure**

**Author:** CADDEN **Keywords:** RHR - LPCI 2004 NRC SRO Question **Not Archived**
**Date Last Used:**
**Time:** 2 **Question ID:** 35412
**Points:** 1 **Parent ID:** 0
**Difficulty:** 3 **Child ID:** 0

| KA System | KA Number | RO Value | SRO Value |
|---|---|---|---|
| 203000 | A2.04 | 3.5 | 3.6 |

☐ RO ☑ SRO ☐ STAC ☐ STAI ☐ LOR ☐ NOC ☐ INO
☑ ILO ☐ ESP ☐ Part A ☐ Part B ☐ Open Ref. ☑ Close Ref. ☐ Static

**References:**
ST-OP-315-0141
23.205

**Question #14 Details**

## EQ-OP-315-0140-000-C013-001 2004 SRO NRC Exam

Question Text

The plant is operating at 28% power during a startup. Core Spray Pump A is declared inoperable due to failing Surveillance Requirement 3.5.1.8.

Which one of the following components if subsequently declared inoperable would cause the most limiting condition in accordance with technical specifications?

**Response A - Correct Answer**

Core Spray - Pump B

**This would be an immediate action.Reference:** **Tech Specs**

**Response B**

Residual Heat Removal - Pump A

**Incorrect because this would be a** 72 hour action Statement

**Response C**

Core Spray – Pump C

**Incorrect because this would be a** 72 hour action Statement

**Response D**

High Pressure Coolant Injection System

**Incorrect because this would be a** 72 hour action Statement

**Author:** CADDEN
**Date Last Used:**
**Time:** 2
**Points:** 1
**Difficulty:** 2

**Keywords:** HPCI RCIC TECH SPECS

**Not Archived**

**Question ID:** 35406
**Parent ID:** 0
**Child ID:** 0

| KA System | KA Number | RO Value | SRO Value |
|---|---|---|---|
| 209001 | 2.1.12 | | 4.0 |

- ☐ RO
- ☑ SRO
- ☐ STAC
- ☐ STAI
- ☐ LOR
- ☐ NOC
- ☐ INO
- ☑ ILO
- ☐ ESP
- ☐ Part A
- ☐ Part B
- ☐ Open Ref.
- ☑ Close Ref.
- ☐ Static

**References:**

Tech Specs

**Question #15 Details**

## EQ-OP-802-3003-000-0002-012 2004 SRO NRC Exam

Question Text

While performing RPV Control - ATWS, step FSL-2 directs automatic initiation of ADS to be inhibited.

Which of the following best describes why this action is directed?

**Response A**

The conditions assumed in the design of the ADS actuation logic could not exist if the RPV is experiencing an ATWS.

**Incorrect since ADS logic design has nothing to do with ATWS and the conditions could exist during an ATWS.**

**Response B - Correct Answer**

Rapid and uncontrolled injection of relatively cold, unborated water would dilute in-core boron concentration.

**Reference:** ST-OP-802-3003-001

**Response C**

ADS actuation with the RPV in an ATWS condition imposes a severe mechanical transient on the SRV tailpipes which could lead to primary containment failure.

**Although ADS actuation does impose severe mechanical stress, that is not the basis for FSL-2.**

**Response D**

ADS actuation with the RPV at pressure imposes a severe thermal transient on the drywell and may significantly complicate efforts to maintain drywell temperature as specified.

**The thermal transient will be felt on the Torus. Also, this is not the basis for FSL-2.**

**Author:** CADDEN
**Date Last Used:**
**Time:** 2
**Points:** 1
**Difficulty:** 1

**Keywords:** ATWS
ADS
2004 NRC SRO Question

**Not Archived**

**Question ID:** 35297
**Parent ID:** 0
**Child ID:** 0

| KA System | KA Number | RO Value | SRO Value |
|---|---|---|---|
| Generic | 2.4.7 | | 3.8 |

☐ RO ☑ ILO
☑ SRO ☐ ESP
☐ STAC ☐ Part A
☐ STAI ☐ Part B
☐ LOR ☐ Open Ref.
☐ NOC ☑ Close Ref.
☐ INO ☐ Static

**References:**
ST-OP-802-3003-001

**Question #16 Details**

## EQ-OP-802-3003-000-0111-001 2004 SRO NRC Exam

Question Text

The plant was operating at 100% power when a LOCA occurred. The following plant conditions exist:
RPV pressure.....900 psig
RPV level.....155 inches and lowering
Heater Feed Pumps.....tripped

The STA reports that the leak is 2.6 million Lbm/hr. In accordance with RPV Control EOP table 1, What is the MINIMUM combination of available systems the CRS should direct be used to maintain RPV water level? (8 lbm/gal)

**Response A**

HPCI

**Incorrect since (2.6 Mlbm/hr at 1lbm/hr = 8 gpm, => $2.6x10^6/(8*60)$ = 5,416.7 gpm. The design flowrate of HPCI is 5000 gpm**

**Response B - Correct Answer**

HPCI and RCIC

**Correct since need 5,416.7 gpm. HPCI (5,000 gpm) + RCIC (650 gpm) = 5,650 gpm**

**Response C**

HPCI, RCIC and one SBFW pump

**Incorrect since question asks MINIMUM combination and SBFW is not needed.**

**Response D**

HPCI, RCIC and both SBFW pumps

**Incorrect since question asks MINIMUM combination and SBFW is not needed.**

**Author:** CADDEN
**Date Last Used:**
**Time:** 0
**Points:** 1
**Difficulty:** 2

**Keywords:** LOCA
EOP RPV Level
2004 NRC SRO Question

**Not Archived**

**Question ID:** 35298
**Parent ID:** 0
**Child ID:** 0

| KA System | KA Number | RO Value | SRO Value |
|---|---|---|---|
| 259002 | 2.4.48 | | 3.8 |

☐ RO ☑ ILO
☑ SRO ☐ ESP
☐ STAC ☐ Part A
☐ STAI ☐ Part B
☐ LOR ☐ Open Ref.
☐ NOC ☐ Close Ref.
☐ INO ☐ Static

**References:**
ST-OP-802-3003-001
ST-OP-315-0039-001, ST-OP-315-0043, ST-OP-315-0018
29.100.01, Sheet 1, Table 1

**Question #17 Details**

## EQ-OP-315-0124-000-A002-001 2004 SRO NRC Exam

Question Text

Which of the following best describes the basis for the Limiting Condition of Operation (LCO) for the Rod Block Monitor (RBM)?

The RBM is designed to...

**Response A - Correct Answer**

automatically prevent fuel damage in the event of erroneous rod withdrawal from locations of high power density during high power operation.

**Reference:** Technical Specifications

**Response B**

provide automatic supervision to assure that out-of-sequence rods will not be withdrawn or inserted to limit the effects of a rod drop accident.

**Incorrect since this is the function of the Rod Worth Minimizer**

**Response C**

enforce a control rod pattern which will limit fuel temperature during an anticipated plant transient.

**Incorrect since RBM does not enforce control rod patterns**

**Response D**

provide adequate margin for the Safety Limits and yet allow operating margin that reduces the possibility of unnecessary shutdown.

**Incorrect because this answer references the setpoints, not the LCO for the RBM.**

**Author:** CADDEN
**Date Last Used:**
**Time:** 0
**Points:** 1
**Difficulty:** 1

**Keywords:** RBM
2004 NRC SRO Question

**Not Archived**

**Question ID:** 35299
**Parent ID:** 0
**Child ID:** 0

| KA System | KA Number | RO Value | SRO Value |
|---|---|---|---|
| 215002 | 2.2.25 | | 3.7 |

- ☐ RO
- ☑ SRO
- ☐ STAC
- ☐ STAI
- ☐ LOR
- ☐ NOC
- ☐ INO
- ☑ ILO
- ☐ ESP
- ☐ Part A
- ☐ Part B
- ☐ Open Ref.
- ☑ Close Ref.
- ☐ Static

**References:**

Technical Specifications
ST-OP-315-0124-001

**Question #18 Details**

# EQ-OP-315-0190-000-A017-002 2004 SRO NRC Exam

Question Text

The plant is in a refueling outage with the mode switch in REFUEL and all rods inserted. The refuel crew has used the grapple to pick up a fuel bundle. They start to move towards the core when the control room operator withdraws a rod.
What is the expected response when the bridge reaches the core?

**Response A - Correct Answer**

stop and a hoist block will be generated

**Reference:** ST-OP-315-0190-001(1), ST-OP-315-0190-001 (2)

**Response B**

stop and the hoist will remain operable

**Incorrect because a hoist block is generated**

**Response C**

continue moving and a hoist block will be generated

**Incorrect because the bridge will stop moving**

**Response D**

continue moving and the hoist will remain operable

**Incorrect because a hoist block is generated**

**Author:** CADDEN
**Date Last Used:** 2/7/2000
**Time:** 0
**Points:** 1
**Difficulty:** 2

**Keywords:**

**Not Archived**

**Question ID:** 35300
**Parent ID:** 0
**Child ID:** 0

| KA System | KA Number | RO Value | SRO Value |
|---|---|---|---|
| 234000 | K5.02 | 3.1 | 3.7 |

☐ RO ☑ ILO
☑ SRO ☐ ESP
☐ STAC ☐ Part A
☐ STAI ☐ Part B
☐ LOR ☐ Open Ref.
☐ NOC ☑ Close Ref.
☐ INO ☐ Static

**References:**

Technical Specification Basis 3.9.1-1
ST-OP-315-0190-001

**Question #19 Details**

## EQ-OP-315-0141-000-A021-008 2004 SRO NRC Exam

Question Text

Two minutes after a small steam leak develops inside the drywell, the following conditions exist:

Drywell pressure.....3.0 psig.
Reactor pressure.....750 psig and lowering.
RPV level.....170 inches and rising.
HX A Bypass Cont E11-F048A.....white Sealed In light
E11-F015A, E11-F017A.....white Close light
HX B Bypass Cont E11-F048B.....white Sealed In light

Based on these conditions, which loop is selected for injection, and which Division of RHR should be used for Primary Containment (PC) control?

**Response A**

"A" loop selected for injection, Division 1 RHR for PC control.
**Incorrect since B Loop selected for injection (15A and 17A are closed)**

**Response B - Correct Answer**

"B" loop selected for injection, Division 1 RHR for PC control.
**Reference: ST-OP-315-041-001, also the Non-selected loop is used for PC control**

**Response C**

"A" loop selected for injection, Division 2 RHR for PC control.
**Incorrect since B Loop selected for injection (15A and 17A are closed)**

**Response D**

"B" loop selected for injection, Division 2 RHR for PC control.
**Incorrect since the Non-selected loop is used for PC Control.**

**Author:** CADDEN
**Date Last Used:** 5/16/2002
**Time:** 5
**Points:** 1
**Difficulty:** 1

**Keywords:** RHR - LPCI

**Not Archived**

**Question ID:** 34591
**Parent ID:** 0
**Child ID:** 0

| KA System | KA Number | RO Value | SRO Value |
|---|---|---|---|
| Generic | 2.1.7 | 3.7 | 4.4 |
| 203000 | A3.06 | 3.7 | 3.6 |
| 203000 | K4.01 | 4.2 | 4.2 |

☐ RO ☑ ILO
☑ SRO ☐ ESP
☐ STAC ☐ Part A
☐ STAI ☐ Part B
☐ LOR ☐ Open Ref.
☐ NOC ☑ Close Ref.
☐ INO ☐ Static

**References:**
ST-OP-315-041-001
23.205
23.601

**Question #20 Details**

## EQ-OP-804-0001-000-0008-006 2004 SRO NRC Exam

Question Text

Which one of the following describes a Fermi 2 technical specification safety limit?

**Response A**

Water level in the spent fuel pool shall be greater than the top of active irradiated fuel.
**Incorrect since there is no safety limit for fuel pool water level**

**Response B**

Reactor vessel water level shall be greater than 31" above the top of active irradiated fuel.
**Incorrect since the safety limit is > top of active fuel**

**Response C - Correct Answer**

MCPR shall be ≥1.07 for two recirculation loop operation or ≥1.09 for single recirculation loop operation
**Reference:** **Technical Specifications and bases**

**Response D**

With the reactor steam dome pressure < 785 psig or core flow < 10% rated core flow, core thermal power is limited to 50%
**Incorrect since the safety limit is limited to 25% thermal power**

**Author:** CADDEN
**Date Last Used:**
**Time:** 2
**Points:** 1
**Difficulty:** 1

**Keywords:** 2004 NRC SRO Question
Thermal Limits

**Not Archived**

**Question ID:** 35306
**Parent ID:** 0
**Child ID:** 0

| KA System | KA Number | RO Value | SRO Value |
|---|---|---|---|
| 295009 | 2.2.22 | 3.4 | 4.1 |

☐ RO ☑ ILO
☑ SRO ☐ ESP
☐ STAC ☐ Part A
☐ STAI ☐ Part B
☐ LOR ☐ Open Ref.
☐ NOC ☑ Close Ref.
☐ INO ☐ Static

**References:**
Technical Specifications and bases

**Question #21 Details**

## EQ-OP-802-4101-000-0030-010 2004 SRO NRC Exam

Question Text

During refueling operations a Refuel Floor Log is maintained. Who has the shared responsibility for maintaining this log in accordance with procedure MOP13, Conduct of Refueling and Core Alterations?

**Response A - Correct Answer**

Refuel Floor Coordinator and Refuel Floor Supervisor

**Reference:** **MOP13 Conduct of Refueling and Core Alterations, Page 6**

**Response B**

Station Nuclear Engineer and Fuel Movement Verifier

**Incorrect because Neither SNE nor Fuel Movement Verifier maintains the log.**

**Response C**

Supervisor Reactor Engineering and Station Nuclear Engineer

**Incorrect because Neither Supervisor Reactor Engineering nor SNE maintains the log.**

**Response D**

Refuel Floor Supervisor and Supervisor Reactor Engineering

**Incorrect because Supervisor Reactor Engineering does not maintain the log.**

**Author:** CADDEN
**Date Last Used:** 2/7/2000
**Time:** 3
**Points:** 1
**Difficulty:** 1

**Keywords:** REFUELING
2004 NRC SRO Question

**Not Archived**

**Question ID:** 35310
**Parent ID:** 0
**Child ID:** 0

| KA System | KA Number | RO Value | SRO Value |
|---|---|---|---|
| | 2.2.29 | | 3.8 |

☐ RO ☑ ILO
☑ SRO ☐ ESP
☐ STAC ☐ Part A
☐ STAI ☐ Part B
☐ LOR ☐ Open Ref.
☐ NOC ☑ Close Ref.
☐ INO ☐ Static

**References:**

MOP13 Conduct of Refueling and Core Alterations

**Question #22 Details**

# EQ-OP-315-0019-000-C005-001 2004 SRO NRC Exam

Question Text

The plant was operating at 100% power with the operating crew making preparations to vent the Drywell for pressure control in accordance with 23.406, Primary Containment Nitrogen Inerting and Purge System, using Division I SGTS as a vent path. The CRNSO reports that Division I SGTS has failed to start.
What action should the CRS direct?

**Response A - Correct Answer**

Line-up and vent through RBHVAC
**Reference: 23.406, page 17 (pre-requisites)**

**Response B**

Start Division II SGTS and vent the Torus
**Incorrect because precautions and limitations (P/L 3.4, pg 5) state both divisions of SGTS should be functionally capable if using SGTS to vent the DW. Also, venting the DW, not the Torus.**

**Response C**

Start Division II SGTS and vent the Drywell
**Incorrect because precautions and limitations (P/L 3.4, pg 5) state both divisions of SGTS should be functionally capable if using SGTS to vent the DW.**

**Response D**

Line-up and vent containment through the Torus Hardened Vents
**Incorrect because venting through the Torus Hardened Vent is only done in emergencies.**

**Author:** CADDEN
**Date Last Used:**
**Time:** 5
**Points:** 1
**Difficulty:** 1

**Keywords:** 2004 NRC RO Question
CONTAINMENT
NITROGEN

**Not Archived**

**Question ID:** 35311
**Parent ID:** 0
**Child ID:** 0

| KA System | KA Number | RO Value | SRO Value |
|---|---|---|---|
| Generic | 2.3.8 | | 3.2 |

☐ RO ☑ ILO
☑ SRO ☐ ESP
☐ STAC ☐ Part A
☐ STAI ☐ Part B
☐ LOR ☐ Open Ref.
☐ NOC ☑ Close Ref.
☐ INO ☐ Static

**References:**
ST-OP-315-0019-001
23.406

**Question #23 Details**

## EQ-OP-315-0115-000-C005-001 2004 SRO NRC Exam

Question Text

While in the Refueling Mode, Technical Specification 3.7.7 requires a minimum of 22 feet of water over the irradiated fuel assemblies. What is the basis for this requirement?

**Response A**

Adequate Net Positive Suction Head is available for a running RHR pump while in the Fuel Pool Cooling Assist Mode of operation.

**Incorrect RHR pumps take suction on Fuel Pool Skimmer Surge Tanks.**

**Response B - Correct Answer**

Sufficient volume is available to remove 99% of the assumed 10% iodine gap activity released from a damaged fuel assembly.

**Reference:** **ST-OP-315-0015-001, Tech Spec Basis 3.7.7**

**Response C**

Background radiation levels at the surface of the water are less than or equal to 5 mr/hr while refueling operations are in progress.

**Incorrect because rad levels at the water surface are not in the design for minimum water level.**

**Response D**

Sufficient inventory is available to ensure the temperature of the water will not exceed 200°F in a 24 hour period after a loss of Fuel Pool Cooling.

**There is no basis to support this answer.**

**Author:** CADDEN **Keywords:** FPC&C **Not Archived**

**Date Last Used:**

**Time:** 0

**Points:** 1

**Difficulty:** 1

**Question ID:** 35312

**Parent ID:** 0

**Child ID:** 0

| KA System | KA Number | RO Value | SRO Value |
|---|---|---|---|
| Generic | 2.3.10 | | 3.3 |

☐ RO ☑ ILO

☑ SRO ☐ ESP

☐ STAC ☐ Part A

☐ STAI ☐ Part B

☐ LOR ☐ Open Ref.

☐ NOC ☑ Close Ref.

☐ INO ☐ Static

**References:**

ST-OP-315-0015-001

Tech Spec Basis 3.7.7

**Question #24 Details**

## EQ-OP-315-0141-000-0003-012 2004 SRO NRC Exam

Question Text

The plant is shutdown for a refueling outage.
RPV temperature is 140°F.
Division 2 RHR is operating in the shutdown cooling mode.
RHR pump B is running.
The following alarms and indications are noted:
3D156 REACTOR WATER LEVEL LOW
3D79 REAC VESSEL WATER LEVEL L3 CHANNEL TRIP
RPV water level 160" and steady on narrow range level indicators.
RPV water level 135" and lowering slowly on wide range level indicators.
Based on these conditions what action is taken in accordance with plant procedures?

**Response A**

Enter 20.205.01 Loss of Shutdown Cooling and restore shutdown cooling using B RHR pump.
**Incorrect because SDC will not be restored until level is >L3. The plant is experiencing a LOCA.**

**Response B**

Enter 20.205.01 Loss of Shutdown Cooling and re-open E1150-F015B, LPCI Inbd Iso Vlv.
**Incorrect because E1150-F015B can not be opened until level is >L3.**

**Response C - Correct Answer**

Enter 29.100.01 sheet 1 RPV control and restore level as directed using Table 1 systems.
**Reference:** **29.100.01 sht 1 RPV control**

**Response D**

Enter 29.100.01 sheet 1 RPV control and restore level per RPV flooding due to level indication discrepancies.
**Incorrect because there is no level discrepancy. NR level stops indicating at 160".**

**Author:** CADDEN
**Date Last Used:**
**Time:** 3
**Points:** 1
**Difficulty:** 3

**Keywords:** RHR - SDC
2004 NRC SRO Question

**Not Archived**
**Question ID:** 35314
**Parent ID:** 0
**Child ID:** 0

| KA System | KA Number | RO Value | SRO Value |
|---|---|---|---|
| 295031 | 2.4.1 | 4.3 | 4.6 |
| 295031 | 2.4.9 | | 3.9 |

☐ RO ☑ ILO
☑ SRO ☐ ESP
☐ STAC ☐ Part A
☐ STAI ☐ Part B
☐ LOR ☐ Open Ref.
☐ NOC ☑ Close Ref.
☐ INO ☐ Static

**References:**
ST-OP-315-0041-001
ST-OP-802-3002,3003
29.100.01 sht 1 RPV control

**Question #25 Details**

## EQ-OP-802-3003-000-0008-008 2004 SRO NRC Exam

Question Text

Which of the following set of conditions would allow the CRS/SM to exit the ATWS section of the EOPs?

**Response A**

All control rods inserted to position 02; SLC injecting with tank level at 14 inches.
**Incorrect because Maximum Sub-critical Banked Withdrawal Position is 0".**

**Response B**

One rod inserted to position 30 and all other control rods inserted to position 02; SLC injecting with tank level at 45 inches.
**Incorrect because Maximum Sub-critical Banked Withdrawal Position is 0".**

**Response C**

Three rods inserted to position 04 while all others inserted to position 00; SLC injecting with tank level at 34 inches.
**Incorrect because Maximum Sub-critical Banked Withdrawal Position is 0".**

**Response D - Correct Answer**

One rod inserted to position 46 and all others inserted to position 00; SLC injecting with tank level at 58 inches.
**Reference:** **ST-OP-802-3003-001, EPG Appendix B, Contingency 5, Tech Spec Bases, Shutdown Margin**

**Author:** CADDEN
**Date Last Used:** 3/9/2001
**Time:** 2
**Points:** 1
**Difficulty:** 2

**Keywords:** ATWS
EOP RPV Power
2004 NRC RO Question

**Not Archived**
**Question ID:** 35315
**Parent ID:** 0
**Child ID:** 0

| KA System | KA Number | RO Value | SRO Value |
|---|---|---|---|
| Generic 2.4 | 2.4.21 | 3.7 | 4.3 |
| 295006 | A2.01 | 4.5 | 4.6 |

☐ RO ☑ ILO
☑ SRO ☐ ESP
☐ STAC ☐ Part A
☐ STAI ☐ Part B
☐ LOR ☐ Open Ref.
☐ NOC ☑ Close Ref.
☐ INO ☐ Static

**References:**

ST-OP-802-3003-001
EPG Appendix B, Contingency 5
Tech Spec Bases, Shutdown Margin