# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 1

**QUESTION ID**: 6090 **- A**

**DESCRIPTION:** Knowledge of the interrelations between a reactor trip and the following: Reactor Trip Status Panel

**AUTHOR:** avest **REVISION** 1 **REVISION DATE** 9/20/2004

**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1

**PLANT SYSTEM:** PPS **CATEGORY:** SYSTEM

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| OP-903-107 | 14 | 08 | 8/5/2004 |
| OP-903-006 | 08 | 00 | 11/6/2001 |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 4.1-E7-EK2.03 | 3.5 | 3.6 | WLP-OPS-PPS00 | 1 |

## QUESTION

The PNPO performs a manual reactor trip from CP-2. What are the expected indications on the Reactor Trip Status panel above CP-7, prior to the CPCs generating automatic trips when Shutdown CEAs insert?

A. K1 & K3 lights off, Reactor Trip Bkrs 1, 3, 5, & 7 open

B. K1 & K4 lights off, Reactor Trip Bkrs 1, 4, 5 & 8 open

C. K2 & K4 lights off, Reactor Trip Bkrs 2, 4, 6, & 8 open

D. K2 & K3 lights off, Reactor Trip Bkrs 2, 3, 6 & 7 open

## ANSWER

B

## COMMENTS

Provide Fig 5 of SD-PPS to examinees
B provides the correct K relays and also provides the correct Trip breakers. A C, and D are incorrect because each has at least one incorrect affected component.

| Cognitive Level | Tier/Group RO | Tier/Group SRO | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Comprehension/Analysis | 1-1 | | New | New | 41.7, 41.6 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 2
**QUESTION ID**: 5572 **- A**

**DESCRIPTION:** Determine if HPSI throttle criteria is met during a PZR STM space break.
**AUTHOR:** avest **REVISION** 6 **REVISION DATE** 9/24/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** PPE **CATEGORY:** PROCEDURE

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| OP-902-002 | 09 | 00 | 4/12/2001 |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 4.2-A8-AA2.23 | 3.6 | 4.3 | W-3-LP-OPS-PPE02 | 24 |

## QUESTION

The following conditions exist:

- RCS Pressure is currently 1050 psia and stable.
- 100 gpm HPSI flow to each cold leg loop indicated on CP-8.
- Containment pressure and Quench Tank pressure are 25 psia and rising together.
- T-cold, T-hot, and Representative CET temperatures indicate 545 °F.
- QSPDS levels 1 through 6 indicate voided on QSPDS 1 and 2
- Vessel Plenum level on CP-7 reads 40%
- SG 1 level is cycling between 68 and 71% WR
- SG 2 level is 57% WR and dropping slowly
- Pressurizer level is 100%.

Which course of action should you order?

A. Stop one HPSI pump and throttle flow on the other train.

B. Stop Both HPSI pumps one pump at a time.

C. Continue to allow full HPSI flow into the RCS.

D. Restore Letdown to service and attain Pzr level 33 - 60%.

## ANSWER

C

## COMMENTS

Pressurizer Safety valve is failed open, plenum level and subcooled margin are not met.
Ref. OP-902-002 Pgs. 21 and 37.
A and B would be viable options per step 23 of OP-902-002, if HPSI Throttle criteria were met.
D is a viable option for reducing pressurizer level if a true excess inventory condition exists per step 28 of OP-902-002.

| Cognitive Level | Tier/Group RO | Tier/Group SRO | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Comprehension/Analysis | 1-1 | | Bank | Aug 2003 W3 | 41.8, 41.10 / 43.5 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 3
**QUESTION ID**: 6091 **- A**

**DESCRIPTION:** Knowledge of the interrelations between the small break LOCA and the following: SGs
**AUTHOR:** avest **REVISION** 1 **REVISION DATE** 9/21/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** PPE **CATEGORY:** PROCEDURE
**REFERENCE:** **REVISION:** **CHANGE:** **DATE:**
WLP-OPS-PPE02

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 4.1-E9-EK2.03 | 3 | 3.3 | WLP-OPS-PPE02 | 14 |
| | | | WLP-OPS-PPE02 | 7 |

## QUESTION

Which of the following have a higher importance in the mitigation strategy for a small break LOCA vice a large break LOCA?

A. HPSI pumps and the Safety Injection Sump

B. Charging Pumps and the Boric Acid Makeup Pumps

C. Containment Spray pumps and Shutdown Cooling Heat Exchangers

D. Steam Generators and Emergency Feedwater Pumps

## ANSWER

D

## COMMENTS

D is correct. For a SBLOCA break flow is insufficient to provide core cooling steam generator heat removal is required. A and B are incorrect LBLOCA - RCS heat removal is break flow with core boil-off and safety injection. C is incorrect due to not providing immediate core cooling.

| Cognitive Level | Tier/Group RO | Tier/Group SRO | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Fundamental/Memory | 1-1 | | New | New | 41.7 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 4
**QUESTION ID**: 5668 **- N**

**DESCRIPTION:** Verification of Two Phase Natural Circulation Flow
**AUTHOR:** avest **REVISION** 3 **REVISION DATE** 9/20/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** PPE **CATEGORY:** PROCEDURE
RCS

| REFERENCE: | REVISION: | CHANGE: | DATE: | | |
|---|---|---|---|---|---|
| OP-902-002 | 09 | 00 | 4/12/2001 | | |
| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | **OBJECTIVE** | |
| 4.1-E11-EK1.01 | 4.1 | 4.4 | W-3-LP-OPS-PPE02 | 11 | |

## QUESTION

A large break LOCA occurred 20 minutes ago and the following conditions exist:

- RCS Pressure = 500 psia
- Representative CET Temperature = 500°F
- HPSI flow = 200 gpm/cold leg
- LPSI train A and B flow rate = 0 gpm
- Charging Pump A and B are running, Charging Pump AB is secured with AB assignment switch in NORM

Which of the following is correct concerning the criteria for verifying satisfactory two-phase natural circulation?

A. Representative CET temperature is not met.

B. HPSI flow is not met.

C. LPSI Flow is not met.

D. Charging pump status is not met.

## ANSWER

A

## COMMENTS

Supply Steam Tables and Attachment 2-B of OP-902-009.

A is correct. CET temperature is superheated ~ 33ºF.
B is incorrect. Required flow per cold leg is ~ 150 gpm.
C is incorrect. RCS pressure is currently above the shutoff head of a LPSI pump and no flow is required.
D is incorrect the conditions given for charging pump status are consistent with the normal response of the system to a SIAS.

| Cognitive Level | Tier/Group | | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Comprehension/Analysis | **RO** | **SRO** | Bank | | 41.8, 41.14 |
| | 1-1 | | | | |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 5
**QUESTION ID**: 6115 **- A**

**DESCRIPTION:** Knowledge of abnormal condition procedures
**AUTHOR:** evines **REVISION** 3 **REVISION DATE** 9/20/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** EFW **CATEGORY:** PROCEDURE
PPE
FWC

| **REFERENCE:** | **REVISION:** | **CHANGE:** | **DATE:** | | |
|---|---|---|---|---|---|
| OP-902-003 | 04 | 00 | 4/12/2001 | | |
| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | **OBJECTIVE** | |
| 2-4-11 | 3.4 | 3.6 | WLP-OPS-FWC00 | 11 | |
| | | | WLP-OPS-PPE05 | 7 | |

## QUESTION

Given the following:

- The reactor was tripped and 2A RCP secured due to 2A RCP ARRD High Temperature
- Reverse rotation was indicated on 2A RCP and all RCPs were secured
- OP-902-003, Loss of Offsite Power/Loss of Forced Circulation Recovery has been implemented.

Which of the following meets the criteria of OP-902-003 for maintaining SG levels using Main Feed Water and would be sufficient to support natural circulation heat removal?

| | SG 1 | SG2 |
|---|---|---|
| A. | 45% NR and lowering, | 55% WR and stable |
| B. | 50% WR and stable, | 75% NR and rising |
| C. | 72% NR and rising, | 48% NR and lowering |
| D. | 48% NR and rising, | 55% NR and rising |

## ANSWER

D

## COMMENTS

D is correct OP-902-003 directs at least 1 SG being maintained or restored to 50-70% NR using MFW or EFW in manual, 68-71% WR using EFW in automatic

| **Cognitive Level** | **Tier/Group** | | **Question Source** | **Question History** | **10CFR Part 55 Content** |
|---|---|---|---|---|---|
| Fundamental/Memory | **RO** | **SRO** | New | | 41.10 / 43.5 |
| | 1-1 | | | | |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 6
**QUESTION ID**: 5670 **- N**

**DESCRIPTION:** Minimum Pzr level requirements during a charging malfunction and bases
**AUTHOR:** avest **REVISION** 3 **REVISION DATE** 9/21/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** CVC **CATEGORY:** PROCEDURE
RCS
PPO

| REFERENCE: | REVISION: | CHANGE: | DATE: | |
|---|---|---|---|---|
| OP-901-112 | 02 | 04 | 3/2/2004 | |
| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | **OBJECTIVE** |
| 4.2-A22-AK3.02 | 3.5 | 3.8 | W-3-LP-OPS-PPO10 | 3 |

## QUESTION

The plant is at 100% power with $T_{cold}$ at 545°F and $T_{hot}$ 603°F. The running charging pump tripped due to the VCT Outlet Valve, CVC-183 closing. Letdown isolated on high temperature due to the loss of the running charging pump. Determine the minimum required Pressurizer level to remain at power for the given conditions and the reason for the minimum level.

A. 46%, to ensure that the pressurizer does not empty on a reactor trip.

B. 46%, to ensure that PZR heaters remain covered on a reactor trip.

C. 33%, to ensure that the pressurizer does on empty on a reactor trip.

D. 33%, to ensure that PZR heaters remain covered on a reactor trip.

## ANSWER

A

## COMMENTS

Supply examinee with copy of Attachment 1 of OP-901-112

A is correct. Tavg of 574 corresponds to minimum level of 46% per att 1 OP-901-112 which is based on preventing PZR from emptying on RX trip. B is incorrect due to wrong bases. C and D are incorrect due to 33% being minimum level for a Tavg of 564.

| Cognitive Level | Tier/Group | | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| | RO | SRO | | | |
| Comprehension/Analysis | 1-1 | | Bank | | 41.5, 41.10 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 7
**QUESTION ID**: 5554 **- A**

**DESCRIPTION:** Loss of SDC time to core Uncovery
**AUTHOR:** avest **REVISION** 3 **REVISION DATE** 9/20/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** PPO SDC **CATEGORY:** PROCEDURE

| REFERENCE: | REVISION: | CHANGE: | DATE: | | |
|---|---|---|---|---|---|
| OP-901-131 | 02 | 02 | 5/6/2004 | | |
| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | | **OBJECTIVE** |
| 4.2-A25-AK2.02 | 3.2* | 3.2 | W-3-LP-OPS-REQ21 | | 03 |

## QUESTION

Given the following:

- The plant operated for 200 days and was shutdown on Nov 9 at 2130 hours to repair a tube leak in SG. 2.
- At 0930 on Nov 12, while draining down to remove the primary manways on SG 2, both LPSI pumps start cavitating and trip on overcurrent.
- The following plant conditions existed at 0930 hours:

  | | |
  |---|---|
  | RCS temperature | 123°F |
  | RCS level | 14.5 feet |
  | SG #1 level | 72% WR |
  | Pressurizer Manway is removed. | |

Determine the estimated time for core Uncovery.

A. 0.2 hours

B. 1.0 hours

C. 1.5 hours

D. 1.8 hours

## ANSWER

C

## COMMENTS

Provide examinee with OP-901-131 Att.3.
C is the correct answer using the graph at 2.5 days shutdown. A is incorrect because it is obtained from the wrong graph line. B is incorrect. This value was obtained from the note on the graph. D is incorrect. This value comes from 3 days shutdown on the graph.

| Cognitive Level | Tier/Group | | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| | RO | SRO | | | |
| Comprehension/Analysis | 1-1 | | Bank | | 41.7 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 8

**QUESTION ID**: 5764 **- A**

**DESCRIPTION:** Ability to determine and interpret the following as they apply to the Loss of Component Cooling Water: Diagnose location of a leak in the CCWS

**AUTHOR:** avest **REVISION** 1 **REVISION DATE** 9/20/2004

**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1

**PLANT SYSTEM:** CC, PPO **CATEGORY:** PROCEDURE, SYSTEM

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| OP-901-510 | 04 | 03 | 11/4/2003 |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 4.2-A26-AA2.01 | 2.9 | 3.5 | W-3-LP-OPS-PPO50 | 1 |

## QUESTION

Given the following conditions:

- The plant is at 100% power
- CCW Makeup Pumps A and B auto started
- Both DCTs are bypassed and isolated
- All CCW pump suction and discharge cross-connect valves are closed
- CCW Train A and B isolations to the AB loop are isolated
- Initially CCW A and B train surge tank dropped and then recovered to normal and stabilized
- Both CCW Makeup Valves and the normal CCW Surge Tank Makeup valve opened and are now closed
- HPSI Pump AB is aligned to the A train

Which of the following could cause these indications?

A. A leak on the discharge of CCW Pump A

B. A leak upstream of EDG B Flow Control Valve

C. A leak on the AB Loop Return Header inside Containment

D. A leak on HPSI Pump AB Seal Cooler Return

## ANSWER

C

## COMMENTS

A, B, and D are incorrect because the leak would still be in progress if it were in one of those locations. C is correct because the AB loop isolations are closed isolating the leak

.

| Cognitive Level | Tier/Group RO | Tier/Group SRO | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Comprehension/Analysis | 1-1 | | Bank | W3 SRO 2000 | 41.7 / 43.5 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 9
**QUESTION ID**: 5814 **- A**

**DESCRIPTION:** Failure of PZR BU Heaters In-surge Interlock
**AUTHOR:** avest **REVISION** 3 **REVISION DATE** 9/21/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** PPC **CATEGORY:** SYSTEM
**REFERENCE:** **REVISION:** **CHANGE:** **DATE:**
SD-PLC 5

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 4.2-A27-AK1.03 | 2.6 | 2.9 | W-3-LP-OPS-PLC00 | 7 |

## QUESTION

What would be the effect if the Pressurizer Backup Heaters failed to energize on a Pressurizer in-surge during a plant transient in Mode 1? (assuming no subsequent outsurge immediately)

A. Pressurizer water space would remain subcooled for a longer period of time.

B. RCS Pressure would slowly lower to trip setpoint due to loss of Heater Capacity.

C. Pressurizer heater wells and surge line would be more subject to thermal shock.

D. Proportional Heater current will rise immediately then lower over time.

## ANSWER

A

## COMMENTS

Provide Steam Tables to the examinees.
A is correct. The water that enters from the hot leg would be no more than 610ºF. This would be 40ºF below the normal saturation temperature of the PZR water space. B is incorrect because the Proportional heaters would ramp up to maintain RCS pressure as it dropped off. C is incorrect because any thermal stresses that would be experienced occurred as a result of the insurge. D is incorrect because the initial response of the RCS to the insurge would be a pressure rise and Proportional heater current would actually drop off unless it was already at the minimum.

| Cognitive Level | Tier/Group | | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| | RO | SRO | | | |
| Comprehension/Analysis | 1-1 | | Bank | Aug 2000 W3 | 41.8, 41.14 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 10
**QUESTION ID**: 1787 **- A**

**DESCRIPTION:** EFAS and DEFAS logic
**AUTHOR:** CAR **REVISION** 3 **REVISION DATE** 9/21/2004
**TYPE:** MULTIPLE CHOICE **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** ATS EFW **CATEGORY:** SYSTEM

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| OP-004-021 | 01 | 00 | 7/17/2002 |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 4.1-E29-EA1.15 | 4.1 | 3.9 | W-3-LP-OPS-ATS00 | 3 |
| | | | W-3-LP-OPS- EFW00 | 5 |

## QUESTION

The Main Turbine tripped and Reactor Cutback failed to actuate. RCS pressure reached 2370 psia and the Operators tripped the Reactor using the manual trip pushbuttons on CP-2. The plant has experienced a Main Steam Line Break upstream of the Number one (1) Steam Generator Main Steam Isolation Valve.

SELECT the statement which describes the expected response of the Anticipated Transient System (ATS) and the Emergency Feedwater Actuation System (EFAS) for the following plant conditions:

Steam Generator #1: 500 psia (lowering), 20% Wide Range level (lowering)

Steam Generator #2: 707 psia (lowering), 39.5% Wide Range level (lowering)

DEFAS: Enabled

DRTS : Enabled

RCS pressure: 1700 psia (lowering)

RCS max pressure 2380 psig

All Emergency Feedwater controllers in automatic

A. DRTS and DEFAS should have auto actuated.

B. EFAS-2 only should have auto actuated.

C. EFAS-1 and EFAS-2 should have auto actuated.

D. DRTS and EFAS 1 should have auto actuated.

## ANSWER

B

## COMMENTS

A is incorrect. conditions did not meet DRTS and DEFAS setpoints 2420 and 800 psig
B is correct. SG 2 > 123psid and is higher pressure SG
C is incorrect. EFAS 1 conditions not met
D is incorrect. DRTS setpoint not met 2420 psig, EFAS 1 conditions not met

| Cognitive Level | Tier/Group RO | SRO | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Comprehension/Analysis | 1-1 | | Bank | | 41.7 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 11
**QUESTION ID**: 3467 **- B**

**DESCRIPTION:** Knowledge of Limiting Conditions for Operations and Safety Limits
**AUTHOR:** avest **REVISION** 4 **REVISION DATE** 9/24/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** RCS **CATEGORY:** PROCEDURE
TS

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| TS 3.4.5.2 | | | |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 2-2-22 | 3.4 | 4.1 | W-3-LP-OPS-RCS00 | 8 |

## QUESTION

The following plant conditions exist:

- The plant is in MODE 1.
- The latest leak rate data is as follows:
  - 10.1 GPM - Total RCS leakage rate.
  - 5.2 GPM - Leakage into the Reactor Drain Tank.
  - 0.9 GPM - Leakage past check valves from RCS to SI system. (Leakage has been quantified and confirmed)
  - 0.7 GPM - Total primary to secondary leakage (0.15 GPM From S/G-1, remainder is S/G-2).
  - 3.1 GPM - Leakage from a PZR Safety into the Quench Tank.

Based upon current plant conditions, which of the following exceeds the LCO values of TS 3.4.5.2?

A. Pressure boundary leakage

B. Unidentified leakage

C. Identified leakage

D. Primary to secondary leakage

## ANSWER

D

## COMMENTS

Provide TS 3.4.5.2 to examinees.

D is correct .55 gpm leakage in S/G-2 exceeds the 720 gpd pri to sec leakage limit. A, B and C are incorrect pressure boundary, unidentified and identified leakage are not exceeded.

| Cognitive Level | Tier/Group | | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| | RO | SRO | | | |
| Comprehension/Analysis | 1-1 | | Modified | | 41.5, 43.2 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 12
**QUESTION ID**: 6092 **- A**

**DESCRIPTION:** Ability to Identify Post Accident Instrumentation
**AUTHOR:** avest **REVISION** 2 **REVISION DATE** 9/21/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** MCD **CATEGORY:** SYSTEM

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| OP-903-013 | 13 | 08 | 7/29/2004 |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 2-4-3 | 3.5 | 3.8 | WLP-OPS-MCD05 | 1 |

## QUESTION

A Main Steam Line Break is in progress inside Containment. The CRS requests that you use a post accident instrument to monitor Containment Pressure. How can you easily identify post accident instruments on the control boards?

A. The nameplate is marked with a black star.

B. The instrument number (UNID) ends with an "S".

C. The nameplate is marked with a black square.

D. An orange border surrounds the nameplate.

## ANSWER

D

## COMMENTS

D is correct. Accident instrumentation is marked with an orange border. A and C are incorrect because these symbols are used on the boards to identify equipment that have ESFAS actuations. In this case, SIAS and CIAS respectively. B is incorrect because the S denotes a safety related piece of equipment or instrumentation. Many instruments are safety related that are not designated post accident monitoring instruments.

| Cognitive Level | Tier/Group RO | Tier/Group SRO | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Fundamental/Memory | 1-1 | | New | New | 41.7 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 13
**QUESTION ID**: 6118 **- A**
**DESCRIPTION:** Ability to determine and interpret Steam Flow - Feed Flow recorders as they apply to loss of Main Feedwater
**AUTHOR:** evines **REVISION** 3 **REVISION DATE** 9/22/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** FW **CATEGORY:** SYSTEM
**REFERENCE:** **REVISION:** **CHANGE:** **DATE:**
SD-FW00

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 4.2-A54-AA2.08 | 2.9 | 3.3* | WLP-OPS-FW00 | 3 |
| | | | WLP-OPS-FW00 | 5 |

## QUESTION

The plant is at 100% power, the SNPO notes the following indications:

- SG1 Steam Flow reads 7.5 E6 lbm/hr
- SG1 Feed Flow reads 7.5 E6 lbm/hr
- SG2 Steam Flow reads 7.5 E6 lbm/hr
- SG2 Feed Flow reads 1.65 E6 lbm/hr

Which of the following has occurred?

A. Steam Generator Feed Pump B tripped

B. FW-173B, SG2 Main Feedwater Reg valve closed

C. FW-184B, SG2 Main Feedwater Isolation closed

D. FW-166B, SG2 Startup Feedwater Reg valve closed

## ANSWER

B

## COMMENTS

A is incorrect. SGFP B tripped would lower feed flow on both SGs
B is correct. Feed flow is approx 22% of full flow which corresponds to SU feed reg valve capacity
C is incorrect. MFIV closure would result in complete loss of feed flow to SG2
D is incorrect. MFRV would compensate for flow lost if SU Feed Reg valve closed

| Cognitive Level | Tier/Group | | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| | RO | SRO | | | |
| Comprehension/Analysis | 1-1 | | New | | 41.5, 43.5 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 14
**QUESTION ID**: 2469 **- N**

**DESCRIPTION:** Why place CS switch to off in 005 case II
**AUTHOR:** RWF **REVISION** 4 **REVISION DATE** 9/21/2004
**TYPE:** Multiple Choice **TIME:** 3 **POINTS:** 1
**PLANT SYSTEM:** PPE **CATEGORY:** PROCEDURE

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| OP-902-005 | 11 | 00 | 4/12/2001 |
| TG-OP-902-005 | 11 | 00 | 4/16/2001 |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 4.1-E55-EK3.02 | 4.3 | 4.6 | W-3-LP-OPS-PPE05 | 4 |

## QUESTION

During a station blackout, the Loss of Offsite Power/Station Blackout Recovery Procedure (OP-902-005) directs the Operator to place the Containment Spray Pump control switches to OFF.

Which of the following describes the reason for this step?

A. To prevent overloading the Emergency Diesel Generators when restored.

B. To prevent initiating Containment Spray when electrical power is restored.

C. To prevent starting the Containment Spray Pumps with no seal cooling after power is restored.

D. To protect the Containment Spray Pumps from the effects of loss of DC control power if battery chargers cannot be restored.

## ANSWER

B

## COMMENTS

B is correct CS pumps are taken to OFF during a SBO to prevent inadvertent spray due to stripping loads from the battery and instrument SUPS which would cause all ESFAS actuations to occur when power is restored. A is incorrect because the sequencers would prevent the EDGs from being overloaded if restored. C is incorrect because the CCW pumps would sequence on shortly after CS pumps when power is restored. D is incorrect because if batteries were depleted and DC power is unavailable CS pumps would not start.

| Cognitive Level | Tier/Group RO | Tier/Group SRO | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Fundamental/Memory | 1-1 | | Bank | | 41.5, 41.10 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 15
**QUESTION ID**: 4109 **- N**

**DESCRIPTION:** Ability to determine if single phase natural circulation criteria is satisfied
**AUTHOR:** avest **REVISION** 2 **REVISION DATE** 9/24/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** PPE **CATEGORY:** PROCEDURE
RCS

| REFERENCE: | REVISION: | CHANGE: | DATE: | | |
|---|---|---|---|---|---|
| OP-902-003 | 04 | 00 | 4/12/2001 | | |
| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | | **OBJECTIVE** |
| 4.2-A56-AK1.03 | 3.1* | 3.4* | W-3-LP-OPS-PPE05 | | 01 |

## QUESTION

A Loss of Offsite Power has occurred. Plant conditions are as follows:

- RCS pressure is 1736 psia, slowly rising
- Th is 590°F and constant
- CET temperature is 598°F
- Tc is 550°F and slowly lowering

All of the following conditions meet the criteria for single phase natural circulation in accordance with OP-902-003, Loss of Offsite Power/Loss of Forced Ciculation Recovery Procedure **EXCEPT**:

A. Tc temperature trend

B. Th temperature trend

C. Subcooled Margin

D. Th-Representative CET $\Delta T$

## ANSWER

C

## COMMENTS

Provide Examinee with copy of Steam Tables
C is correct. Subcooled margin is required to be 28 degrees F or higher. Per conditions given and steam tables subcooled margin is only approximately 19 degrees F. A and B are incorrect because the trends are not rising. D is incorrect because the delta t is < 10 degrees F.

| Cognitive Level | Tier/Group | | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| | **RO** | **SRO** | | | |
| Comprehension/Analysis | 1-1 | | Bank | | 41.10, 41.14 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 16
**QUESTION ID**: 5893 **- B**

**DESCRIPTION:** Restoring power to Vital Instrument Bus MA
**AUTHOR:** avest **REVISION** 3 **REVISION DATE** 9/22/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** ID **CATEGORY:** PROCEDURE
PPO

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| OP-006-005 | 11 | 05 | 12/10/2003 |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 4.2-A57-AA2.20 | 3.6 | 3.9 | W-3-LP-OPS-ID00 | 7 |

**QUESTION**

Given the following conditions:

- Following a failure of SUPS MA inverter, ACC Pump A started due to ACC-126A failing Open
- ACC-126A was manually overridden closed and ACC Pump A was returned to standby
- SUPS MA is being restored on alternate power in accordance with OP-006-005, Inverters and Distribution

Prior to restoring power to CP-48, Train A Power and Annunciators, the operator prevents ACC Pump A from starting automatically on a:

A. high Aux Component Cooling WCT basin temperature signal by racking out the pump breaker.

B. high Aux Component Cooling pressure signal by removing the pump DC Control Power Fuses.

C. high Component Cooling temperature signal by opening the pump DC Control Power knife switch.

D. low Component Cooling pressure signal by placing the pump control switch to OFF.

**ANSWER**

C

**COMMENTS**

C is correct. The pump would start on a high temperature signal per OP-901-312. A is incorrect because the ACC pump is not affected by basin temperature and the action is not what is required by procedure. B is incorrect because the pump starts on low pressure and the action is not per procedure. D is incorrect because the pump is not affected by CCW pressure.

| Cognitive Level | Tier/Group | | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| | RO | SRO | | | |
| Fundamental/Memory | 1-1 | | Bank | | 41.7 / 43.5 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 17
**QUESTION ID**: 6117 **- A**
**DESCRIPTION:** Ability to operate and monitor ACCW temperature as it applies to loss of nuclear service water
**AUTHOR:** evines **REVISION** 6 **REVISION DATE** 9/24/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** ACC **CATEGORY:** SYSTEM

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| OP-002-001 | 13 | 00 | 9/3/2003 |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 4.2-A62-AA1.01 | 3.1 | 3.1 | W-3-LP-OPS-CC00 | 3 |

## QUESTION

An SIAS occurred due to a LOCA. The SNPO is monitoring CCW temperatures. The following indications are noted:

- CCW Heat Exchanger A Outlet Temperature is 110° F
- CCW Heat Exchanger B Outlet Temperature is 93° F
- Wet Cooling Tower A Basin Temperature is 77° F
- Wet Cooling Tower B Basin Temperature is 72° F
- Prior to the LOCA, the setpoint for both ACC-126A and B was 95° F.

What is the expected position of ACC-126A and B, ACC Header CCW HX Outlet Temp Control Valves?

A. ACC-126A throttled OPEN, ACC-126B CLOSED

B. ACC-126A CLOSED, ACC-126B throttled OPEN

C. ACC-126A CLOSED, ACC-126B CLOSED

D. ACC-126A throttled OPEN, ACC-126B throttled OPEN

## ANSWER

C

## COMMENTS

C is correct ACC 126A, B setpoint changes to 115° F with WCT basin Temperature > 74° F with SIAS present. WCT B Basin temp is <74° F CCW HX A temp is < 115° F setpoint, both would be shut.

| Cognitive Level | Tier/Group RO | Tier/Group SRO | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Comprehension/Analysis | 1-1 | | New | | 41.7 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 18
**QUESTION ID**: 5815 **- A**

**DESCRIPTION:** Actions to Close CS-125A on a Loss of IA with a CSAS
**AUTHOR:** avest **REVISION** 1 **REVISION DATE** 9/1/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** CS IA **CATEGORY:** SYSTEM

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| OP-902-008 | 12 | 00 | 4/12/2001 |
| OP-901-511 | 04 | 03 | 7/3/2000 |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 4.2-A65-AA1.02 | 2.6 | 2.8 | W-3-LP-OPS-AIR00 | 4,5,7 |
| | | | W-3-LP-OPS-PPO50 | 3,6 |
| | | | W-3-LP-OPS-PPE08 | 4 |

## QUESTION

A LOCA is in progress. CSAS is actuated and Containment pressure is 17.9 psia and slowly lowering. The IA Header upstream of the IA dryers is ruptured and IA Receiver pressure indicates 20 psig.

Containment Spray Pump 'A' trips on overload 5 minutes after the Loss of IA pressure. Which of the following is true concerning closure of CS-125A to isolate the affected penetration?

A. Essential Air must be aligned to CS-125A before it can be closed in accordance with the EOP appendix.

B. CS-125A can still be closed using the EOP appendix utilizing the local air accumulator.

C. An N2 accumulator provides motive force to operate CS-125A when closed from CP-8 C/S.

D. Reset CSAS and CP-8 C/S to close CS-125A. Align Essential Air to ensure valve remains closed.

## ANSWER

B

## COMMENTS

B is correct. CS-125A has an IA accumulator that will allow operation of the valve without the need for an additional air source such as Essential Air. A is incorrect for the reasons stated in the previous sentence. C is incorrect because there is no safety related N@ accumulator assigned to CS-125A. D is incorrect because CSAS can not be reset at the pressure given in the initial conditions.

| Cognitive Level | Tier/Group | | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| | RO | SRO | | | |
| Comprehension/Analysis | 1-1 | | Bank | W3 2000 SRO | 41.7 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 19
**QUESTION ID**: 6119 **- A**

**DESCRIPTION:** Ability to and interpret excore NI indication as it applies to stuck control rod
**AUTHOR:** evines **REVISION** 4 **REVISION DATE** 9/24/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** CPC NI **CATEGORY:** SYSTEM
**REFERENCE:** **REVISION:** **CHANGE:** **DATE:**
SD CED
SD CPC

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 4.2-A5-AA2.01 | 3.3 | 4.1 | WLP-OPS-CPC00 | 2 |
| | | | WLP-OPS-CPC00 | 6 |
| | | | WLP-OPS-CPC00 | 4 |

## QUESTION

Reactor power is 80 %; ASI is being controlled at the 100% ESI value. ASI is currently +0.020. Group P CEAs are being withdrawn for ASI control. During withdrawal, CEA 27 slips to 115 inches. All other Group P CEAs are at 140 inches. When attempts to realign CEA 27 are performed, it is determined to be mechanically bound.

When determining whether the CPCs are detecting the CEA misalignment, which of the following CPCs would have the most positive ASI value?

A. CPC A

B. CPC B

C. CPC C

D. CPC D

## ANSWER

A

## COMMENTS

Provide examinee with copy of System Description CED fig. 02 CEA mimic Display and System description CPC Fig. 3 location of CEAs and Excore Detectors

A is correct. Flux would be depressed in quadrant A, making ASI more positive as seen by CPC A
B and C are incorrect. Flux would not be depressed in quadrants B and C as seen by CPC B and C
D is incorrect. Flux would be elevated in quadrant D making ASI more negative as seen by CPC D

| Cognitive Level | Tier/Group | | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| | RO | SRO | | | |
| Comprehension/Analysis | 1-2 | | New | | 41.5, 41.6 43.5 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 20
**QUESTION ID**: 2458 **- A**

**DESCRIPTION:** What signal generates the Fuel Handling Accident Signal
**AUTHOR:** avest **REVISION** 4 **REVISION DATE** 9/2/2004
**TYPE:** Multiple Choice **TIME:** 1 **POINTS:** 1
**PLANT SYSTEM:** HVF **CATEGORY:** SYSTEM
**REFERENCE:** **REVISION:** **CHANGE:** **DATE:**
SD RMS

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 4.2-A36-AK2.02 | 3.4 | 3.9 | W-3-LP-FPFB-FBS04 | 8 |
| | | | w-3-lp-ops-hvf00 | 5 |

## QUESTION

Which of the following describes the signal used to generate the Fuel Handling Accident Signal?

A. Fuel Handling Building (FHB) PIG Radiation Monitor Gas Channel High Alarm

B. Fuel Handling Building Wide Range Gas Monitor High Alarm

C. Any one of four safety FHB Area Radiation Monitors in High Alarm

D. At least two of four safety FHB Area Radiation Monitors in High Alarm

## ANSWER

C

## COMMENTS

C is correct. It only takes one area rad monitor to cause a Fuel Handling Accident Actuation. This makes D incorrect. A and B are incorrect because these monitors only provide indication and alarm functions.

| Cognitive Level | Tier/Group RO | Tier/Group SRO | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Fundamental/Memory | 1-2 | | Bank | | 41.7, 41.11, 41.13 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 21
**QUESTION ID**: 5835 **- A**

**DESCRIPTION:** Actions on a S/G Tube Leak after Plant Shutdown.
**AUTHOR:** avest **REVISION** 4 **REVISION DATE** 9/24/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** PPO **CATEGORY:** PROCEDURE

| REFERENCE: | REVISION: | CHANGE: | DATE: | |
|---|---|---|---|---|
| OP-901-202 | 03 | 06 | 8/13/2004 | |
| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | **OBJECTIVE** |
| 4.2-A37-AK3.05 | 3.7 | 4.0 | W-3-LP-OPS-PPO20 | 4 |

## QUESTION

Given the following conditions:

- The Plant is in Mode 3 due to a tube leak in #1 S/G.
- OP-901-202, Steam Generator Tube Leakage or High Activity, is being implemented.
- Aux boiler is in operation
- Loop 1 $T_h = 495°F$
- RCS temperature is being controlled using SBCS and feeding both S/Gs with Main Feedwater
- RCPs 1A and 2A have been secured
- RC-301 A and B, PZR Spray Valves are in manual and open

What is the next major step to mitigate this situation and why?

A. Perform cooldown to Shutdown Cooling entry conditions to minimize the impact on condensate inventory.

B. Isolate # 1 S/G to minimize release of radioactive isotopes to the public and site personnel.

C. Commence feed and bleed of #1 S/G via MFW and BD systems to dilute the radioactive isotopes in solution.

D. Verify DWST is aligned as the feed source to the aux boiler to prevent contamination.

## ANSWER

B

## COMMENTS

B is correct. The SG must be isolated to minimize release to public and site. A is incorrect cooldown is performed after SG isolated. C is incorrect radioactive isotopes should be contained not diluted. D is incorrect this step would be performed earlier in the procedure and the step does not limit you to using the DWST, it is the preferred source

| Cognitive Level | Tier/Group RO | Tier/Group SRO | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Comprehension/Analysis | 1-2 | | Modified | W3 SRO 2000 | 41.5, 41.10 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 22
**QUESTION ID**: 6093 **- A**

**DESCRIPTION:** Ability to determine and interpret the following as they apply to the loss of condenser vacuum: Conditions requiring reactor or turbine trip

**AUTHOR:** avest **REVISION** 4 **REVISION DATE** 9/22/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** PPA **CATEGORY:** PROCEDURE

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| OP-901-220 | 02 | 03 | 2/2/2004 |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 4.2-A51-AA2.02 | 3.9 | 4.1 | WLP-OPS-PPO20 | 3 |

## QUESTION

Given the following:

- Reactor Power is 100%
- Condenser vacuum is 20.4 inches Hg and lowering 0.2 inches Hg/minute
- OP-901-220, Loss of Condenser Vacuum is being implemented

Which of the following should be done at this time?

A. Commence a rapid downpower until vacuum recovers to > 25 inches HG.

B. Trip the reactor and verify the turbine tripped.

C. Trip Feedwater Pump Turbines A and B.

D. Verify SBCS Condenser Interlock actuated and steam bypass valves closed.

## ANSWER

B

## COMMENTS

B is correct. OP-901-220 requires the reactor be tripped and verify the turbine has tripped for these conditions. A is incorrect because there would be no chance at this point to start a down power before the turbine trips and steam bypass valves start exhausting high energy steam to the condenser. C is incorrect because the Feed pumps do not trip until 14" Hg. D is incorrect because the condenser interlock does not occur until 3.4" Hg.

| Cognitive Level | Tier/Group | | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| | RO | SRO | | | |
| Fundamental/Memory | 1-2 | | New | | 41.5, 41.10 / 43.5 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 23
**QUESTION ID**: 5683 **- N**

**DESCRIPTION:** Basis for selecting North or South CR Outside Air Intakes to provide makeup air flow
**AUTHOR:** avest **REVISION** 1 **REVISION DATE** 9/3/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** HVC PPO **CATEGORY:** PROCEDURE SYSTEM

| REFERENCE: | REVISION: | CHANGE: | DATE: | | |
|---|---|---|---|---|---|
| OP-901-401 | 01 | 02 | 5/4/2004 | | |
| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | | **OBJECTIVE** |
| 4.2-A60-AA1.02 | 2.9 | 3.1 | W-3-LP-OPS-PPO40 | | 3 |

## QUESTION

OP-901-401, High Airborne Activity in the Control Room has been entered due to an inadvertent release of a Waste Gas Decay Tank with a temperature inversion condition. The Control Room Supervisor orders the SNPO to determine which set of Control Room Outside Air Intakes (CROAI) should be opened for makeup to the Control Room envelope. What should the SNPO base this decision on?

A. The running Control Room Emergency Filtration Unit

B. The running Control Room Normal Air Handling Unit

C. The CROAI farthest from the Plant Stack

D. The lowest pair of CROAI radiation monitor readings

## ANSWER

D

## COMMENTS

D is correct in accordance with OP-901-401. A is incorrect because each set of outside air intakes tap into both emergency filtration units. B is incorrect because the none of the CR emergency air intakes tap into the normal ventilation units. C is incorrect because wind direction would determine which air intake was least affected not distance.

| Cognitive Level | Tier/Group | | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| | RO | SRO | | | |
| Fundamental/Memory | 1-2 | | Bank | | 41.7, 41.13 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 24
**QUESTION ID**: 6122 **- A**

**DESCRIPTION:** Detector Limitations
**AUTHOR:** avest **REVISION** 1 **REVISION DATE** 9/18/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** ARM RMS **CATEGORY:** SYSTEM
**REFERENCE:** SD-RMS **REVISION:** **CHANGE:** **DATE:**

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 4.2-A61-AK1.01 | 2.5* | 2.9? | WLP-OPS-RMS | 5 |

## QUESTION

Which of the following Radiation Monitors are susceptible to Thermally Induced Currents (TIC) during a LOCA or Main Steam Line Break inside containment?

A. Containment Purge Radiation Monitors

B. Containment PIG Radiation Monitor

C. Refueling Machine Area Radiation Monitor

D. Containment High Range Radiation Monitors

## ANSWER

D

## COMMENTS

D is correct. The Containment High Range radiation monitors use long runs of Rockbestos cabling which is susceptible to TIC. A, B , and C are incorrect because they do not incorporate long runs of Rockbestos cabling.

| Cognitive Level | Tier/Group RO | Tier/Group SRO | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Fundamental/Memory | 1-2 | | New | | 41.10, 41.11, 41.12 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 25
**QUESTION ID**: 5840 **- A**
**DESCRIPTION:** Basis for matching air pressure at regulator and transducer when taking local control of ADVs
**AUTHOR:** avest **REVISION** 2 **REVISION DATE** 9/22/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** MS PPO **CATEGORY:** PROCEDURE
**REFERENCE:** **REVISION:** **CHANGE:** **DATE:**
SD-MS00
OP-901-502

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 4.2-A68-AK3.12 | 4.1 | 4.5 | W-3-LP-OPS-PPO51 | 21 |

## QUESTION

The OP-901-502, Control Room Evacuation attachment for taking local control of Atmospheric Dump Valves requires adjusting the inlet air regulator to match pressure at the outlet of the transducer prior to taking local control. What is the reason for performing this step?

A. To ensure the valve closes prior to taking local control of the valve at the local air station.

B. To equalize pressure across the valve operating piston prior to using the manual handwheel to operate the valve.

C. To allow alignment of Essential Air to the valve without affecting valve position.

D. To ensure the valve does not change position when taking local control of the valve at the local air station.

## ANSWER

D

## COMMENTS

Reference: System Description – Main Steam (MS)
Off-normal Operations section/ Figure 14
D is correct. Matching the two gauges ensures that air pressure to the valve controller does not change while taking manual control. A is incorrect. Closing the valve if it is open would cause a heatup of the RCS. B is incorrect the only reason to equalize across the piston would be to take local handwheel control which doesn't require performance of the action in the stem. C is incorrect because the ADVs have a nitrogen accumulator available.

| Cognitive Level | Tier/Group RO | Tier/Group SRO | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Fundamental/Memory | 1-2 | | Bank | W3 2000 SRO | 41.5, 41.10 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 26
**QUESTION ID**: 6120 **- A**
**DESCRIPTION:** Ability to diagnose trends in a timely manner utilizing appropriate Control Room Reference Material
**AUTHOR:** evines **REVISION** 3 **REVISION DATE** 9/22/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** PPE **CATEGORY:** PROCEDURE

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| OP-902-002 | 09 | 00 | 4/12/2001 |
| OP-902-009 | 1.2 | 00 | 10/2/2003 |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 2-4-47 | 3.4 | 3.7 | WLP-OPS-PPE02 | 19 |

## QUESTION

A LOCA inside Containment has occurred. OP-902-002, Loss of Coolant Accident Recovery procure has been implemented.

- Containment Pressure is 16.5 psia,
- RCS pressure is 1000 psia,
- Thot is 550°F
- Tcold is 545°F.

The following Annunciators are in alarm on CP-36:

- A-4, Reactor Vessel Loss
- A-5, Reactor Core Cooling Inadequate
- B-4, QSPDS Subcooled Margin Low

Determine the condition of the RCS and the number of RCPs to be secured:

A. RCS is Subcooled, 2 of 4 RCPs must be secured

B. RCS is Subcooled, 4 of 4 RCPs must be secured

C. RCS is Saturated, 2 of 4 RCPs must be secured

D. RCS is Saturated, 4 of 4 RCPs must be secured

## ANSWER

D

## COMMENTS

Provide Examinee with copy of OP-902-009, Attachment 2, Appendix 2-A RCS Pressure and Temperature Limits

A is incorrect. 1000 psia and Thot 550°F is outside 0°F subcooling curve. B is incorrect, 1000 psia and Thot 550°F is outside 0°F subcooling curve. C is incorrect, 1000 psia and Thot 550°F is outside RCP operating curve. D is correct 1000 psia and Thot 550°F is outside RCP operating curve and 0°F subcooling curve

| Cognitive Level | Tier/Group | | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| | RO | SRO | | | |
| Comprehension/Analysis | 1-2 | | New | | 41.10, 43.5 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 27

**QUESTION ID**: 6126 **- A**

**DESCRIPTION:** knowledge of the interrelations between FRP and Components and automatic and manual features

**AUTHOR:** evines **REVISION** 0 **REVISION DATE** 9/20/2004

**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1

**PLANT SYSTEM:** PPE **CATEGORY:** PROCEDURE

| **REFERENCE:** | **REVISION:** | **CHANGE:** | **DATE:** | | |
|---|---|---|---|---|---|
| OP-902-008 | 12 | 00 | 4/12/2001 | | |
| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | | **OBJECTIVE** |
| 4.4-E9-EK2.1 | 3.6 | 3.9 | WLP-OPS-PPE07 | | 8 |

## QUESTION

A LOCA inside containment is in progress when a Tube Rupture on Steam Generator 1 occurs. All of the following would be performed to isolate the most affected Steam Generator **EXCEPT**:

A. Verify ADV 1 closed and place controller in Manual

B. Verify Main Steam Isolation Valve 1 is closed

C. Verify Main Feedwater Isolation Valve 1 closed

D. Verify SG 1 Blowdown Isolation Valves closed

## ANSWER

A

## COMMENTS

A is correct ADV 1 must be set at 980 psia and placed in AUTO. B is incorrect MSIV 1 would be verified CLOSED. C is incorrect MFIV 1 would be verified CLOSED. D is incorrect Blowdown Isolation valves would be closed.

| **Cognitive Level** | **Tier/Group** | | **Question Source** | **Question History** | **10CFR Part 55 Content** |
|---|---|---|---|---|---|
| Fundamental/Memory | **RO** | **SRO** | New | | 41.7 |
| | 1-2 | | | | |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 28
**QUESTION ID**: 5734 **- N**

**DESCRIPTION:** Isolating CCW to the RCP on Station Blackout
**AUTHOR:** avest **REVISION** 4 **REVISION DATE** 9/22/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** CC **CATEGORY:** PROCEDURE
RCP
PPE

| REFERENCE: | REVISION: | CHANGE: | DATE: | |
|---|---|---|---|---|
| OP-902-005 | 11 | 00 | 4/12/2001 | |
| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | **OBJECTIVE** |
| 3.4-003-K6.02 | 2.7 | 3.1 | WLP-OPS-PPE05 | 3 |
| | | | WLP-OPS-PPE05 | 7 |

## QUESTION

OP-902-005, Station Blackout Recovery, directs the operator to verify closed the CCW non-safety header containment isolation valves, CC-641, CC-710, ad CC-713 to isolate CCW to Containment. What is the reason for this?

A. To prevent thermal shocking the CEDM coolers when restarting the CCW pumps.

B. To prevent water hammer in Cntmt Bldg piping when restarting the CCW pumps.

C. To prevent thermal shocking the RCPs when restarting the CCW pumps.

D. To prevent running out the CCW pumps when restarting.

## ANSWER

C

## COMMENTS

C is correct CC-641,710 and 713 are isolated to prevent thermal shocking RCP seals upon restoration of CCW. A is incorrect thermal shock of CEDM coolers is not the basis for isolating these valves. B is incorrect water hammer is not the basis for closing these valves. D is incorrect runout is not the basis for this step.

| Cognitive Level | Tier/Group | | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| | **RO** | **SRO** | | | |
| Fundamental/Memory | 2-1 | | Bank | | 41.3, 41.7 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 29
**QUESTION ID**: 6094 **- A**

**DESCRIPTION:** Knowledge of the physical connections and/or cause-effect relationships between the CVCS and the BAMTs

**AUTHOR:** avest **REVISION** 2 **REVISION DATE** 9/20/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** CVC **CATEGORY:** SYSTEM

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| OP-902-009 | 1.2 | 00 | 10/2/2003 |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 3.1-004-K1.22 | 3.4 | 3.7 | wlp-ops-cvc00 | 2 |
| | | | wlp-ops-cvc00 | 5 |
| | | | wlp-ops-cvc00 | 4 |

## QUESTION

The plant was initially in MODE 1 with the AB Safety busses powered from the A bus when the following sequence of events occurred: No other abnormal conditions are present other than those caused by the following conditions:

- The 3A bus de-energized due to an overcurrent trip on the 3A to 2A feeder breaker with EDG A OOS
- RCS pressure rapidly dropped to 1400 psia

Under these conditions what is supplying the suction path for the available charging pumps?

A. Volume Control Tank

B. Refueling Water Storage Pool

C. Both BAMTs using BAM pumps and the Emergency Boration Valve

D. Both BAMTs using the Gravity Feed Valves

## ANSWER

D

## COMMENTS

D is correct because the Gravity feed valves opened on the SIAS which occurred on low RCS Pressure. A is incorrect because the SIAS closes the VCT outlet valve. B is incorrect because CVC-507, RWSP suction to the Charging pumps is deenergized and is normally closed. Additionally this valve does not get a signal to change positions on a SIAS. C is incorrect because the BAM Pumps and Emergency Boration Valve are powered from the A safety busses which de-energized prior to the SIAS.

| Cognitive Level | Tier/Group RO | Tier/Group SRO | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Comprehension/Analysis | 2-1 | | New | | 41.7, 41.8 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 30
**QUESTION ID**: 5819 **- A**

**DESCRIPTION:** Affect of a malfunction of SI-129A during reduced inventory conditions in the RCS
**AUTHOR:** avest **REVISION** 1 **REVISION DATE** 9/20/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** SDC **CATEGORY:**
**REFERENCE:** **REVISION:** **CHANGE:** **DATE:**
OP-001-003

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 3.4-005-K6.03 | 2.5 | 2.6 | W-3-LP-OPS-REQ13 | 1 |

## QUESTION

Given the following conditions:

- RCS temperature is 120°F and stable
- Shutdown Cooling A is in service
- RWLIS and RCSLMS indicate 14.5 ft
- All applicable actions of OP-001-003, RCS Drain Down have been completed

How would a loss of power to SI-129A, Shutdown Cooling Flow Control Valve, affect the RCS or SDC systems?

A. An RCS cooldown commences

B. An RCS heatup commences

C. LPSI Pump A cavitates due to excessive vortexing

D. LPSI Pump A experiences runout flow conditions

## ANSWER

B

## COMMENTS

B is correct. SI-129A fails open on a loss of power to its air solenoids. This raises bypass flow around the SDCHX. Therefore, if temperature is initially stable RCS temperature would start to rise. A is incorrect for the reason given previously. C and D are incorrect because for the RCS level given, the cold leg flow control valves would be throttled to prevent flow from exceeding 4000 gpm. This value is below runout flow and excessive air entrainment should not occur.

| Cognitive Level | Tier/Group | | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Comprehension/Analysis | RO | SRO | Bank | W3 2000 SRO | 41.5, 41.7 |
| | 2-1 | | | | |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 31
**QUESTION ID**: 5679 **- N**

**DESCRIPTION:** HPSI injection on loss of SDC.
**AUTHOR:** avest **REVISION** 5 **REVISION DATE** 9/24/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** RCS SI **CATEGORY:** PROCEDURE SYSTEM

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| OP-901-131 | 02 | 02 | 5/6/2004 |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 3.2-006-K1.03 | 4.2 | 4.3 | WLP-OPS-SI00 | 2 |
| | | | WLP-OPS-SI00 | 6 |

## QUESTION

Given the following:

- The RCS was drained to 14.5 ft MSL.
- A loss of Shutdown Cooling event is in progress due to system leakage.
- No LPSI Pumps are running.
- HPSI Pump B was started IAW OP-901-131, Shutdown Cooling Malfunction for RCS makeup and level has been raised to 16 ft MSL and stabilized.

Which of the following is correct concerning restoring a Shutdown Cooling Train?

A. Vent and start LPSI Pump A, since HPSI Pump B is injecting to Hot Leg 1.

B. Vent and start LPSI Pump A, since HPSI Pump B is injecting to Hot Leg 2.

C. Vent and start LPSI Pump B, since HPSI Pump B is injecting to Hot Leg 1.

D. Vent and start LPSI Pump B, since HPSI Pump B is injecting to Hot Leg 2.

## ANSWER

B

## COMMENTS

B is correct. HPSI B injects into Hot Leg 2 which is the same hot leg that SDC Train A takes suction. A is incorrect because the wrong hot leg is given as a choice. C is incorrect because the wrong SDC Train and wrong hot leg are given. D is incorrect because the wrong SDC Train is given.

| Cognitive Level | Tier/Group | | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| | RO | SRO | | | |
| Comprehension/Analysis | 2-1 | | Bank | | 41.7 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 32
**QUESTION ID**: 1310 **- A**

**DESCRIPTION:** Temperature change across a PZR safety
**AUTHOR:** avest **REVISION** 4 **REVISION DATE** 9/22/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** RCS **CATEGORY:** SYSTEM THEORY

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| WLP-OPS-TYH04 | | | |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 3.5-007-A1.03 | 2.6 | 2.7 | W-3-LP-OPS-RCS00 | 1 |

## QUESTION

If a Pressurizer Relief Valve lifts at 100% power, steady-state operations, which of the following is correct?

A. The downstream Safety Relief temperature detector will indicate ~ $T_{sat}$ for the current Pressurizer pressure.

B. The downstream Safety Relief temperature detector will indicate ~ $T_{sat}$ for the current Quench Tank pressure.

C. Quench Tank temperature will equal $T_{sat}$ for the current Pressurizer pressure.

D. Quench Tank pressure will rise to 60 psig, then rapidly lower to containment pressure.

## ANSWER

B

## COMMENTS

B is correct. Due to throttling losses across the relief valve, temperature of the fluid will drop down to approximately the saturation temperature of the downstream side pressure. A and C are incorrect for the reason sited previously. D is incorrect because the rupture disc will relieve pressure at 124 psig to protect the quench tank from RCS Pressure.

| Cognitive Level | Tier/Group | | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| | RO | SRO | | | |
| Fundamental/Memory | 2-1 | | Bank | | 41.5 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 33
**QUESTION ID**: 6136 **- B**

**DESCRIPTION:** Ability to manually operate and/or monitor in the Control Room: PZR Vent Valve
**AUTHOR:** avest **REVISION** 0 **REVISION DATE**
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** RCS **CATEGORY:** PROCEDURE

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| OP-903-098 | 06 | 04 | 10/5/2004 |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 3.5-007-A4.04 | 2.6* | 2.6* | WLP-OPS-RCS00 | 4 |

**QUESTION**

OP-903-098, RCS Vent System Functional Check and Valve Lineup Verification is being performed in Mode 4 with RCS pressure at 350 psia. Which of the following is used, in addition to CP-8 valve position lights, to confirm remote valve indication operability for RC-3182, Pzr Vent Valve?

A. Quench Tank Pressure

B. Quench Tank Level

C. Quench Tank Temperature

D. RCS Vent Header Pressure

**ANSWER**

D

**COMMENTS**

D is correct. The RCS vent header pressure > 150 psig is used to confirm opening of the vent valve. Quench Tank level pressure, and temperature will change during the course of the test but are not used as confirmatory indication that a vent valve opened as indicated.

| Cognitive Level | Tier/Group | | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| | RO | SRO | | | |
| Fundamental/Memory | 2-1 | | New | | 41.7 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 34

**QUESTION ID**: 6124 **- A**

**DESCRIPTION:** Ability to predict changes in parameters to prevent exceeding design limits for CCW flow rate

**AUTHOR:** evines **REVISION** 2 **REVISION DATE** 9/20/2004

**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1

**PLANT SYSTEM:** CC **CATEGORY:** PROCEDURE

| **REFERENCE:** | **REVISION:** | **CHANGE:** | **DATE:** | | |
|---|---|---|---|---|---|
| OP-901-510 | 04 | 03 | 11/4/2003 | | |
| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | | **OBJECTIVE** |
| 3.8-008-A1.01 | 2.8 | 2.9 | WLP-OPS-PPO50 | | 3 |

## QUESTION

CCW Pump A has tripped with CCW Pump AB OOS. Which of the following actions is performed to protect CCW Pump B from runout conditions?

A. Split out the A and B CCW headers.

B. Close the NNS loop isolations

C. Secure Train B Containment Fan Coolers

D. Align Chiller B cooling to the Wet Tower

## ANSWER

A

## COMMENTS

A is correct OP 901-510 directs splitting out CCW headers. B is incorrect NNS header will not be isolated. C is incorrect OP 901-510 directs verifying B train CFCs operating. D is incorrect; OP 901-510 directs placing A chiller in Wet Tower mode.

| **Cognitive Level** | **Tier/Group** | | **Question Source** | **Question History** | **10CFR Part 55 Content** |
|---|---|---|---|---|---|
| Fundamental/Memory | **RO** | **SRO** | New | | 41.5 |
| | 2-1 | | | | |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 35

**QUESTION ID**: 1424 **- A**

**DESCRIPTION:** If controlling channel of pressure control fails high what would Rx trip on if no operator action

**AUTHOR:** avest **REVISION** 3 **REVISION DATE** 9/24/2004

**TYPE:** Multiple Choice **TIME:** 1 **POINTS:** 1

**PLANT SYSTEM:** PPC **CATEGORY:** SYSTEM

| **REFERENCE:** | **REVISION:** | **CHANGE:** | **DATE:** |
|---|---|---|---|
| SD-PPS | | | |
| T.S. 3.3.2 | | | |

| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | **OBJECTIVE** |
|---|---|---|---|---|
| 3.3-010-K3.02 | 4 | 4.1 | W-3-LP-OPS-PLC00 | 07 |

## QUESTION

The plant is at 5% power:

If the controlling pressurizer pressure channel (PT-100X/Y) failed high, the reactor would trip on: (Assume no operator actions)

A. CPC RCS Pressure Aux Trip

B. A calculated DNBR LO trip

C. Pressurizer Pressure HI

D. Pressurizer Pressure LO

## ANSWER

A

## COMMENTS

A is correct. The Aux trip would occur first because 1) RCS pressure would be lowering vice increasing 2) the auxt trip occurs at 1860 psia vice 1684 psia for the Pressurizer Pressure LO trip, and 3) Power is low enough that an actual lo DNBR condition would not occur prior to the AUX trip.

| **Cognitive Level** | **Tier/Group** | | **Question Source** | **Question History** | **10CFR Part 55 Content** |
|---|---|---|---|---|---|
| | **RO** | **SRO** | | | |
| Comprehension/Analysis | 2-1 | | Modified | | 41.7 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 36
**QUESTION ID**: 87 **- A**

**DESCRIPTION:** Reactor trip without a turbine trip
**AUTHOR:** avest **REVISION** 1 **REVISION DATE** 9/24/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** PPE PPS **CATEGORY:** PROCEDURE SYSTEM

| REFERENCE: | REVISION: | CHANGE: | DATE: | | |
|---|---|---|---|---|---|
| OP-902-000 | 09 | 00 | 2/12/2001 | | |
| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | **OBJECTIVE** | |
| 3.7-012-K3.02 | 3.2* | 3.3 | WLP-OPS-PPE01 | 11 | |

## QUESTION

The reactor tripped from 100% power. Because of a malfunction of the PPS system the turbine is not tripped and the generator output breakers remain closed. If left unresolved this malfunction will cause:

A. An automatic trip of switchyard (grid) breakers, resulting in a loss of offsite power.

B. The main turbine will overspeed, resulting in damage to the main turbine blading and shaft.

C. The main generator to motor, resulting in damage to the rotor or stator windings.

D. An uncontrolled cool down of the RCS, resulting in a Main Steam Isolation Signal.

## ANSWER

D

## COMMENTS

D is correct. This condition causes a high secondary heat removal condition which causes the RCS to cooldown until SG pressures lower to the MSIS setpoint of 764 psia. MSIS would terminate the cooldown by closing the MSIVs. A is wrong because the malfunction is in PPS and not in the trip circuitry for the generator. B is not true because the generator is still on-line and the turbine would not have a large change in counter torque. C is incorrect because the turbine is still on-line and driving the main generator with 100% steam flow.

| Cognitive Level | Tier/Group RO | Tier/Group SRO | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Comprehension/Analysis | 2-1 | | New | | 41.7 |

**Examination Question Number** 37
**QUESTION ID**: 5805 **- A**

**DESCRIPTION:** Determine the ESFAS Actuated Component that failed to actuate.
**AUTHOR:** avest **REVISION** 2 **REVISION DATE** 9/20/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** EFW **CATEGORY:** SYSTEM
PPS
MS

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| OP-902-009 | 1.2 | 00 | 10/2/2003 |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 3.2-013-A2.02 | 4.3 | 4.5 | W-3-LP-OPS-MS00 | 1 |
| | | | W-3-LP-OPS-MS00 | 3 |

## QUESTION

A reactor trip occurred from 100% power on low SG 1 pressure due to a Main Steam Line Break inside containment. Currently conditions are at their most severe for each listed parameter:

- SG 1 Pressure is 750 psia, SG 2 Pressure is 850 psia
- SG 1 level is 17% NR, SG 2 level is 20% NR
- Containment Pressure is 16.5 psia
- RCS Pressure is 1750 psia
- No operator action has occurred

Which of the following components require action to place the component in the required condition?

A. MS-401A, EFW Pump AB Turbine Steam Supply SG 1, is open

B. EFW Pump A is not running

C. MS-124B, Main Steam Line 2 MSIV SG 2, is closed

D. MS-120A, MS Line 1 Upstream Drain Normal Isolation, is open

## ANSWER

B

## COMMENTS

Reference: Appendix 4, OP-902-009

B is correct because conditions are present for a valid EFAS-2 and as given in the stem SG 2 pressure never got low enough to lock out EFAS. A is incorrect for the same reason that A is correct.. C is incorrect because the low SG pressure would cause a MSIS which closes both MSIVs. D is incorrect because conditions to initiate SIAS/CIAS have not yet occurred.

| Cognitive Level | Tier/Group RO | Tier/Group SRO | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Comprehension/Analysis | 2-1 | | Modified | W3 2000 SRO | 41.5, 41.10 / 43.5 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 38
**QUESTION ID**: 1934 **- A**

**DESCRIPTION:** Effect losing 2 PPS Channels has on LPSI Pumps.
**AUTHOR:** rjone16 **REVISION** 7 **REVISION DATE** 9/24/2004
**TYPE:** Multiple Choice **TIME:** 3 **POINTS:** 1
**PLANT SYSTEM:** PPS SI **CATEGORY:** SYSTEM

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| OP-009-007 | 05 | 01 | 2/8/2001 |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 3.2-013-K5.02 | 2.9 | 3.3 | W-3-LP-OPS-PPS00 | 03 |
| | | | W-3-LP-OPS-SI00 | 03 |

**QUESTION**

Given the following conditions:

- Both LPSI Pumps are in service for Shutdown Cooling.
- PPS channel A is de-energized for maintenance.
- SUPS SMB faults and de-energizes.

Which of the following describes the impact on the LPSI Pumps?

A. Both LPSI Pumps trip and are locked out until restoration of a PPS channel.

B. Only LPSI pump A trips but can be restarted after a time delay.

C. Only LPSI pump B trips and is locked out until restoration of a PPS Channel.

D. Both LPSI pumps trip but can be restarted after a time delay.

**ANSWER**

D

**COMMENTS**

D is correct the loss of SMB deenergized a second channel of PPS which resuls in actuation of all ESFAS acuations including RAS which stops both LPSI pumps. The pumps can be restarted after a one second time delay. This makes A, B, and C incorrect.

| Cognitive Level | Tier/Group | | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| | RO | SRO | | | |
| Comprehension/Analysis | 2-1 | | Bank | | 41.5, 41.7 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 39
**QUESTION ID**: 5704 **- N**

**DESCRIPTION:** Effects of containment pressure on status of CCS
**AUTHOR:** avest **REVISION** 2 **REVISION DATE** 9/20/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** CCS **CATEGORY:** SYSTEM

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| OP-902-009 | 1.2 | 00 | 10/2/2003 |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 3.5-022-A1.02 | 3.6 | 3.8 | W-3-LP-OPS-CCS00 | 2 |

## QUESTION

The plant is operating in MODE 1 with all system alignments normal when a Main Steam leak occurs inside Containment. The following conditions are noted:

- RCS pressure = 1750 psia
- Containment Pressure = 17.2 psia
- All Containment Fan Coolers (CFCs) are OPERABLE
- No manual operator actions have been taken

Determine the expected status of the Containment Cooling System at this point in time.

A. 3 of 4 CFCs running in slow speed and discharging through the ring header.

B. 4 of 4 CFCs running in slow speed and discharging through the safety dampers.

C. 3 of 4 CFCs running in fast speed and discharging through the ring header.

D. 4 of 4 CFCs running in fast speed and discharging through the safety dampers.

## ANSWER

B

## COMMENTS

For the conditions given, containment pressure has exceeded the SIAS setpoint. This would cause the CFCs to be placed in the condition of selection B. The other selections have either the wrong motor speed, the wrong number of running fans or the wrong flowpath.

| Cognitive Level | Tier/Group RO | Tier/Group SRO | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Comprehension/Analysis | 2-1 | | Modified | W3 2002 SRO/RO | 41.5, 41.9, |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 40
**QUESTION ID**: 6112 **- A**

**DESCRIPTION:** Ability to monitor and or operate CCS fans
**AUTHOR:** evines **REVISION** 0 **REVISION DATE** 9/11/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** CCS **CATEGORY:** SYSTEM

| **REFERENCE:** | **REVISION:** | **CHANGE:** | **DATE:** |
|---|---|---|---|
| OP-008-004 | 06 | 01 | 5/22/2003 |

| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | **OBJECTIVE** |
|---|---|---|---|---|
| 3.5-022-A4.01 | 3.6 | 3.6 | WLP-OPS-CCS00 | 5 |

**QUESTION**

All of the following will trip a CEDM Cooling Fan **EXCEPT**:

A. Associated 31 Bus Undervoltage

B. Safety Injection Actuation Signal

C. Containment Isolation Actuation Signal

D. Associated Fan inlet damper closes

**ANSWER**

C

**COMMENTS**

C is correct CIAS will trip CEDM cooling Fan. A is incorrect 3/3 UV logic on the associated bus will trip CEDM cooling Fan. B is incorrect SIAS will trip CEDM cooling Fan. D is incorrect Fan inlet damper closing will trip CEDM cooling Fan

| **Cognitive Level** | **Tier/Group** | | **Question Source** | **Question History** | **10CFR Part 55 Content** |
|---|---|---|---|---|---|
| | **RO** | **SRO** | | | |
| Fundamental/Memory | 2-1 | | New | | 41.7 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 41
**QUESTION ID**: 5933 **- A**

**DESCRIPTION:** Containment Spray Pump UV start with CSAS initially actuated
**AUTHOR:** avest **REVISION** 2 **REVISION DATE** 9/20/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** CS EDG **CATEGORY:** SYSTEM

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| TS 3.8.1 | | | |
| SD-EDG | | | |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 3.5-026-K2.01 | 3.4* | 3.6 | W-3-LP-OPS-CS00 | 4 |

## QUESTION

Given the following:

- Containment pressure is 17.9 psia
- The 31A feeder breaker trips on overcurrent and a Loss of Offsite Power occurs 1 minute later
- Both EDGs start and their output breakers close

After 205 seconds, which CS pump(s) are running? (assume no Operator action)

A. CS Pump A and B

B. Neither CS Pump

C. CS Pump A

D. CS Pump B

## ANSWER

D

## COMMENTS

D is correct. With the 31A bus deenergized the sequencer is prevented from running due to UV relay dropped out. CS Pump A never gets a start signal

| Cognitive Level | Tier/Group | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|
| Comprehension/Analysis | RO SRO 2-1 | Bank | W3 2002 RO/SRO | 41.7 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 42
**QUESTION ID**: 5740 **- N**

**DESCRIPTION:** Atmospheric Dump Valve failure and plant response
**AUTHOR:** avest **REVISION** 1 **REVISION DATE** 9/8/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** MS **CATEGORY:** SYSTEM
**REFERENCE:** **REVISION:** **CHANGE:** **DATE:**
SD-TUR

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 3.4-039-K3.05 | 3.6 | 3.7 | W-3-LP-OPS-TUR00 | 7 |

## QUESTION

The plant is operating at 50% with all systems aligned normally and primary and secondary heat removal are equal. The PNPO notes $T_C$ starting to rise rapidly. Which of the following would cause this indication?

A. Atmospheric Dump Valve 1 setpoint fails high.

B. Main Turbine Governor Valve 3 is closed.

C. MS-IPT-1010, MS crossover header pressure transmitter fails low.

D. Main Turbine Throttle Valve 4 is closed.

## ANSWER

B

## COMMENTS

B is correct. At 50% power governor valve 3 is normally open. The valve going closed will cause steam flow to lower and RCS temperatures to rise. A is incorrect because the ADV is normally closed. The setpoint rising would only ensure the valve stayed closed. C is incorrect for the same reason. Throttle valve 4 is normally open at 50% power, however the governor valve in series with the throttle valve is not. This makes D incorrect.

| Cognitive Level | Tier/Group RO | Tier/Group SRO | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Comprehension/Analysis | 2-1 | | Modified | W3 2002 RO/SRO | 41.4, 41.7 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 43
**QUESTION ID**: 1870 **- C**

**DESCRIPTION:** Predict results of loss of condensate pumps and use procedures to mitigate
**AUTHOR:** avest **REVISION** 1 **REVISION DATE** 9/20/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** CD **CATEGORY:** PROCEDURE
FW SYSTEM

| **REFERENCE:** | **REVISION:** | **CHANGE:** | **DATE:** | | |
|---|---|---|---|---|---|
| OP-901-101 | 04 | 03 | 1/20/2004 | | |
| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | **OBJECTIVE** | |
| 3.4-056-A2.04 | 2.6 | 2.8* | WLP-OPS-FWP00 | 02 | |
| | | | WLP-OPS-PPE01 | 09 | |

## QUESTION

Plant conditions are as follow:

- Reactor power is 50% following a Reactor Power Cutback due to a loss of the Main Turbine
- Both Steam Generator Feed Pumps are running
- All 3 Condensate Pumps are running

What would be the expected configuration of the Feedwater Pumps if SUT B feeder breaker to bus 1B were to trip and what procedure would be applicable as a result of this malfunction?

A. Both FWPTs would be operating; OP-902-000, Standard Post Trip Actions.

B. Neither FWPT would be operating; OP-902-000, Standard Post Trip Actions.

C. FWPT A would be operating; OP-901-101, Reactor Power Cutback.

D. FWPT B would be operating; OP-901-101, Reactor Power Cutback.

## ANSWER

A

## COMMENTS

This question has been modified from question 1870B.
A is correct because only Condensate pump B would trip as a result of the power loss and the Reactor would trip due to loss of 2 RCPs. One Condensate pump trip would not cause the condensate pump trip logic to be satisfied and two condensate pumps would supply enough head to the FWPTs to prevent a low suction pressure trip.
B is incorrect because both FWPTs would still be running. One Condensate pump trip would not cause the condensate pump trip logic to be satisfied and two condensate pumps would supply enough head to the FWPTs to prevent a low suction pressure trip.
C is incorrect because only Condensate pump B would trip as a result of the power loss and the Reactor would trip due to loss of 2 RCPs. One Condensate pump trip would not cause the condensate pump trip logic to be satisfied and two condensate pumps would supply enough head to the FWPTs to prevent a low suction pressure trip
D is incorrect because only Condensate pump B would trip as a result of the power loss and 2 RCPs trip causing a reactor trip. One Condensate pump trip would not cause the condensate pump trip logic to be satisfied and two condensate pumps would supply enough head to the FWPTs to prevent a low suction pressure trip.

| **Cognitive Level** | **Tier/Group** | | **Question Source** | **Question History** | **10CFR Part 55 Content** |
|---|---|---|---|---|---|
| Comprehension/Analysis | **RO** | **SRO** | Modified | W3 2003 SRO | 41.5, 41.10 / 43.5 |
| | 2-1 | | | | |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 44
**QUESTION ID**: 1226 **- A**

**DESCRIPTION:** MFRV and SUFRV auto closure signals
**AUTHOR:** avest **REVISION** 3 **REVISION DATE** 9/20/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** FWC **CATEGORY:** SYSTEM

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| OP-902-009 | 1.2 | 00 | 10/2/2003 |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 3.4-059-K4.19 | 3.2 | 3.4 | W-3-LP-OPS-FWC00 | 08 |

## QUESTION

Which of the following will automatically close the Main Feedwater Regulating Valves and the S/U Feedwater Regulating Valves when their M/A stations are in manual?

A. Reactor Trip Override

B. High Level Override

C. EFAS

D. MSIS

## ANSWER

D

## COMMENTS

D is correct. MSIS closes both trains of FW valves. A and B are incorrect because these actuations have no effect on the FW Reg Valves when the controllers are in manual. C has no effect on the valves.

| Cognitive Level | Tier/Group RO | Tier/Group SRO | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Fundamental/Memory | 2-1 | | Bank | | 41.7 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 45
**QUESTION ID**: 5821 **- A**

**DESCRIPTION:** FWCS Malfunction Affects on RTO
**AUTHOR:** avest **REVISION** 0 **REVISION DATE** 7/20/2000
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** FW FWC **CATEGORY:** SYSTEM
**REFERENCE:** SD-FWC **REVISION:** **CHANGE:** **DATE:**

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 3.4-059-A4.08 | 3.0* | 1.9* | W-3-LP-OPS-FWC00 | 6 |

## QUESTION

The output of the master controller for FWCS 1 became erratic and was taken to manual with an output of 60%. The level setpoint remains at 68% NR. Subsequently, a reactor trip occurs. Assuming no operator action occurs, what would be the response of the FW system?

A. Level in SG 1 rises to the level setpoint, RTO clears, FW components go to program condition for 60% master controller output.

B. Level in SG 1 rises to HLO setpoint of 81% NR; SUFRV 1 cycles between the HLO and RTO position around the HLO setpoint.

C. Level in SG 1 rises, RTO does not clear, and MFIV 1 goes closed when SG 1 level reaches 96% WR.

D. RTO is disabled, level rises rapidly in SG 1, and MFIV 1 goes closed when SG 1 level reaches 96% WR.

## ANSWER

B

## COMMENTS

B is correct. Since the master controller is in manual and the output is above that required to reset RTO the output of the pump and valve controllers will be at RTO values until HLO occurs at which time the valves will get a 0% output signal until the HLO signal clears. A is incorrect because the RTO will not clear. C is incorrect because HLO can control level around 81% NR. D is incorrect because RTO is not disabled under the conditions given.

| Cognitive Level | Tier/Group RO | Tier/Group SRO | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Comprehension/Analysis | 2-1 | | Bank | | 41.5, 41.7 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 46
**QUESTION ID**: 6101 **- A**

**DESCRIPTION:** Knowledge of AFW design features and/or interlocks which provide for the following: Automatic blowdown/sample isolation

**AUTHOR:** avest **REVISION** 3 **REVISION DATE** 9/22/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** BD PPS EFW **CATEGORY:** SYSTEM

| REFERENCE: | REVISION: | CHANGE: | DATE: | | |
|---|---|---|---|---|---|
| OP-902-009 | 1.2 | 00 | 10/2/2003 | | |
| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | **OBJECTIVE** | |
| 3.4-061-K4.03 | 2.7 | 2.9* | W-3-LP-OPS-BD00 | 4 | |

**QUESTION**

Given the following:

- Containment pressure = 16.5 psia
- RCS pressure = 1900 psia
- S/G 1 & 2 pressures = 800 psia
- S/G 1 NR level = 30 %
- S/G 2 NR level = 25%

Which of the following valves should have repositioned due to an ESFAS actuation?

A. MS-124A, Main Steam Line 1 MSIV SG 1

B. FW-184B , Main FW Isol Valve Stm Gen 2

C. BD-103B, SG Blowdown Isol Stm Gen 2 (Out)

D. SSL-8006A, Sampling Isolation SG 1

**ANSWER**

C

**COMMENTS**

C is correct. Blowdown isolation valve is closed due to EFAS. A and B are incorrect, MSIS setpoint not met. B is incorrect because of the procedural requirement to close FW-184B if given annunciator is in alarm and reactor is shutdown. D is incorrect because the valve is in its proper condition for a CIAS.

| Cognitive Level | Tier/Group | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|
| Comprehension/Analysis | **RO** **SRO** 2-1 | New | | 41.7 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 47
**QUESTION ID**: 6137 **- A**

**DESCRIPTION:** EFW - Knowledge of symptom based EOP Strategies
**AUTHOR:** avest **REVISION** 1 **REVISION DATE** 11/1/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** EFW PPE **CATEGORY:** PROCEDURE

| REFERENCE: | REVISION: | CHANGE: | DATE: | | |
|---|---|---|---|---|---|
| OP-902-006 | 09 | 00 | 4/12/2001 | | |
| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | **OBJECTIVE** | |
| 2-4-6 | 3.1 | 4 | W-3-LP-OPS-PPE06 | 9 | |

## QUESTION

Given the Following:

- EFW pump A is OOS due to a pump bearing replacement
- At 0930 the reactor was manually tripped due to loss of both Main Feedwater pumps
- Tavg is 547ºF
- EFAS-1 and EFAS-2 actuated one minute after the trip
- EFW Pump AB tripped on overspeed when EFAS occurred due to a failure of the EFW pump governor
- EFW Pump B is running normally
- OP-902-006, Loss of Main Feedwater Recovery Procedure has been entered
- The time is now 1010

Based on given plant conditions, how many RCPs are required to be secured?

A. One

B. Two

C. Three

D. Four

## ANSWER

D

## COMMENTS

D is correct. With only one motor driven EFW pump available and MFW lost for greater than 30 minutes all RCPs are stopped to lower heat load.

| Cognitive Level | Tier/Group | | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| | RO | SRO | | | |
| Fundamental/Memory | 2-1 | | New | | 41.10/43.5 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 48
**QUESTION ID**: 5782 **- A**

**DESCRIPTION:** Paralleling the Main Generator
**AUTHOR:** dcassid **REVISION** 1 **REVISION DATE** 9/20/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** ED **CATEGORY:** SYSTEM

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| OP-010-004 | 01 | 07 | 8/18/2004 |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 3.6-062-A4.07 | 3.1* | 3.1* | W-3-LP-OPS-EPC00 | 19 |
| | | | W-3-LP-OPS-TYE02 | 13 |
| | | | W-3-LP-OPS-PPN01 | 2 |

## QUESTION

The plant is ready to parallel the Main Generator to the grid. A manual synchronization across the first Generator Output Breaker is desired. Incoming voltage is slightly higher than running voltage. You have observed 2 complete revolutions of the Synchroscope. The Synchroscope is rotating in the SLOW direction at 4 rpm. Which of following actions would be appropriate for the given conditions?

A. Close the first Generator Output Breaker on the next rotation when the Synchroscope is slightly before the 12 o'clock position.

B. Adjust the speed of the turbine to change the rotation of the Synchroscope to the FAST direction.

C. Adjust the voltage of the Main Generator to obtain an incoming voltage slightly lower than running voltage.

D. Adjust the speed of the turbine to lower the Synchroscope rotation speed in the SLOW direction.

## ANSWER

B

## COMMENTS

B is correct. The Synchroscope must be rotating in the FAST direction to prevent motoring the generator when the breaker is closed in. A and D are incorrect becaus e they would not prevent motoring the generator. C is incorrect because the procedure states that the incoming voltage should be slightly higher for a manual synchronization and matched for auto sync.

| Cognitive Level | Tier/Group | | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| | RO | SRO | | | |
| Fundamental/Memory | 2-1 | | Bank | | 41.7 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 49
**QUESTION ID**: 3242 **- A**

**DESCRIPTION:** Safety Related Battery Chargers
**AUTHOR:** avest **REVISION** 1 **REVISION DATE** 9/9/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** DC **CATEGORY:** SYSTEM

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| OP-006-003 | 09 | 03 | 7/26/2004 |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 3.6-063-A3.01 | 2.7 | 3.1 | W-3-LP-OPS-DC00 | 04 |

## QUESTION

Which of the following statements is correct concerning the safety related Battery Chargers?

A. A high voltage shutdown alarm light energizes when charger output voltage exceeds 144 VDC and must be manually reset.

B. A low voltage alarm light energizes when charger output voltage falls below 132 VDC and automatically resets.

C. A no charge alarm light will energize when battery charger amps falls below 10 amps and must be manually reset.

D. During a battery charger startup up a phase fail light is expected to energize and must be manually reset.

## ANSWER

A

## COMMENTS

A is correct the battery charger will shutdown if its output exceeds 144 vdc and a pushbutton inside the charger cabinet must be depressed to restart the charger. B is incorrect the low vdtage alarm is for the battery bus voltage and comes in on a control room panel at 125 vdc. C is incorrect because the setpoint is wrong and the light and alarm automatically reset. D is wrong because the phase fail light is expected to occur during a charger startup and it resets automatically.

| Cognitive Level | Tier/Group RO | Tier/Group SRO | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Fundamental/Memory | 2-1 | | Bank | | 41.5, 41.7 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 50
**QUESTION ID**: 1903 **- A**

**DESCRIPTION:** Power Supply to EDG A Fuel Oil Storage Tank Transfer Pump
**AUTHOR:** AVEST **REVISION** 3 **REVISION DATE** 9/22/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** FOS **CATEGORY:** System

| **REFERENCE:** | **REVISION:** | **CHANGE:** | **DATE:** | | |
|---|---|---|---|---|---|
| OP-009-002 | 18 | 0203 | 4/1/2004 | | |
| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | **OBJECTIVE** | |
| 3.6-064-K2.02 | 2.8* | 3.1 | W-3-LP-AOC-FOS00 | 02 | |

## QUESTION

The Power Supply for the Emergency Diesel Generator A Fuel Oil Storage Tank Transfer Pump is:

A. 213A

B. 213B

C. 312A

D. 312B

## ANSWER

C

## COMMENTS

C is correct. The EDG A Fuel Oil Transfer Pump is TS related and is powered from a safety related power supply. 312A. A and B are incorrect and are non-safety power supplies but are located in the RAB SWGR rooms. D is incorrect but is the power supply for the EDG B Fuel Oil Transfer Pump.

| **Cognitive Level** | **Tier/Group** | | **Question Source** | **Question History** | **10CFR Part 55 Content** |
|---|---|---|---|---|---|
| | **RO** | **SRO** | | | |
| Fundamental/Memory | 2-1 | | Bank | | 41.7 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 51
**QUESTION ID**: 6138 **- A**

**DESCRIPTION:** Knowledge of the operational implications as they apply to concepts as they apply to the PRM System: Radiation theory, including sources, types, units and effects

**AUTHOR:** avest **REVISION** 1 **REVISION DATE** 11/1/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** PRM RMS **CATEGORY:** SYSTEM THEORY
**REFERENCE:** SD-RMS **REVISION:** **CHANGE:** **DATE:**

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 3.7-073-K5.01 | 2.5 | 3.0 | WLP-OPS-RMS | 1 |

## QUESTION

The Control Room Outside Air Intake radiation monitors use a _____ radiation detector to detect _____ radiation in the ventilation air stream.

A. Ion Chamber, Gamma

B. Geiger Mueller, Gamma

C. Scintillation, Beta

D. Cadmium-Telluride Solid State, Beta

## ANSWER

C

## COMMENTS

C is correct. Per SD-RMS the CROAI monitors use a beta scintillator with a phosphor scintillator. Each of the other selections is a type of detector used at Waterford 3.

| Cognitive Level | Tier/Group RO | Tier/Group SRO | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Fundamental/Memory | 2-1 | | New | | 41.5, 41.11 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 52
**QUESTION ID**: 6113 **- A**

**DESCRIPTION:** Ability to predicts impacts of malfunction of Service Water Header pressure
**AUTHOR:** evines **REVISION** 0 **REVISION DATE** 9/11/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** ACC **CATEGORY:** PROCEDURE
SYSTEM

| **REFERENCE:** | **REVISION:** | **CHANGE:** | **DATE:** | |
|---|---|---|---|---|
| OP-002-001 | 13 | 00 | 9/3/2003 | |
| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | **OBJECTIVE** |
| 3.4-076-A2.02 | 2.7 | 3.1 | W-3-LP-OPS-CC00 | 8 |

## QUESTION

All of the following would require a full flow sweep of the Auxiliary Component Cooling Water system EXCEPT:

A. ACCW Pump A running at less than 1000 gpm for greater than 1 hour

B. ACC 126A failed open for 1 hour with ACCW Pump A OOS

C. ACCW Jockey Pump A aligned to prevent runout condition.

D. ACCW pump A OOS and Jockey Pump A trips

## ANSWER

A

## COMMENTS

A is correct OP-002-004 does not require full flow sweep. B is incorrect OP-002-004 requires full flow sweep. C is incorrect OP-002-004 requires full flow sweep. C is incorrect OP-002-004 requires full flow sweep.

| **Cognitive Level** | **Tier/Group** | | **Question Source** | **Question History** | **10CFR Part 55 Content** |
|---|---|---|---|---|---|
| Fundamental/Memory | **RO** | **SRO** | New | | 41.5, 41.10, 43.5 |
| | 2-1 | | | | |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 53
**QUESTION ID**: 6109 **- A**
**DESCRIPTION:** Knowledge of the physical connections and/or cause effect relationships between the IAS and cooling water to the compressors.
**AUTHOR:** avest **REVISION** 1 **REVISION DATE** 9/22/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** IA **CATEGORY:** SYSTEM
**REFERENCE: REVISION: CHANGE: DATE:**
OP-901-512
SD-7KV
SD-4KV

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 3.8-078-K1.04 | 2.6 | 2.9 | WLP-OPS-AIR00 | 2 |

## QUESTION

Given the following:

- Plant is in Mode 3
- CW Pumps A, B, C and D are running
- TC Pump A running,
- TC pump B OOS

Which of the following would require alignment of alternate cooling to the instrument air compressors in order to maintain the compressors in operation?

A. 86B1 actuation

B. SUT 86STB actuation

C. SUT 86STA actuation

D. 86A1 actuation

## ANSWER

C

## COMMENTS

C is correct because it would cause the loss of the only available TC pump which supplies normal cooling to the IA air compressors. A, B, and D each result in the loss of two CW pumps. A complete loss of CW would have to be experienced to lose the heat sink for TC, which would also require aligning alternate cooling to the IA compressors

| Cognitive Level | Tier/Group | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|
| Comprehension/Analysis | RO SRO<br>2-1 | New | | 41.4 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 54
**QUESTION ID**: 6111 **- A**
**DESCRIPTION:** Ability to monitor automatic operation of the containment system, including containment isolation
**AUTHOR:** avest **REVISION** 2 **REVISION DATE** 9/22/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** PPE **CATEGORY:** SYSTEM

| REFERENCE: | REVISION: | CHANGE: | DATE: | | |
|---|---|---|---|---|---|
| OP-902-009 | 1.2 | 00 | 10/2/2003 | | |
| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | **OBJECTIVE** | |
| 3.5-103-A3.01 | 3.9 | 4.2 | WLP-OPS-SBVOO | 3 | |

## QUESTION

Given the following:

- Containment Pressure = 16.9 psia
- RCS Pressure = 1450 psia
- CC-641, CCW RCP Inlet Outside Isol Valve is open
- CC-963A, CCW Shutdown Heat Exchanger A Outlet Valve is closed
- SI-343, SI Tanks Drain to RWSP is closed
- MS 120A, Main Steam Line 1 Normal Drain Valve is open

Based on the given conditions which valve did not automatically reposition to its ESFAS actuation position?

A. CC-641

B. CC-963A

C. SI-343

D. MS-120A

## ANSWER

D

## COMMENTS

D is correct. For the conditions given, the only ESFAS actuations that apply are SIAS and CIAS. A and B are incorrect because the valves are in the expected alignment with no CSAS. C is incorrect because the valve listed in the correct condition for a CIAS.

| Cognitive Level | Tier/Group | | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| | RO | SRO | | | |
| Comprehension/Analysis | 2-1 | | New | | 41.7, 41.9 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 55
**QUESTION ID**: 5709 **- C**

**DESCRIPTION:** Override required for Containment Fan Cooler CCW isolations
**AUTHOR:** avest **REVISION** 4 **REVISION DATE** 9/24/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** CC **CATEGORY:** PROCEDURE
CCS

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| OP-902-009 | 1.2 | 00 | 10/2/2003 |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 2-4-24 | 3.3 | 3.7 | W-3-LP-OPS-CCS00 | 11 |
| | | | W-3-LP-OPS-PPE01 | 6 |

## QUESTION

A LOCA inside containment has occurred and OP-902-002 is being implemented. A leak develops between CC 808A, Containment Fan Cooler A CCW Inlet and CC 822A, Containment Fan Cooler A CCW Outlet. Which actions are required to isolate the leak in accordance with OP-902-009?

A. Take Containment Fan Cooler A control switch to STOP.

B. Manually gag CC-808A and CC-822A, Containment Fan Cooler A CCW Inlet and Outlet closed.

C. Place the keyswitch for CC 808A and CC 822A on Aux Panel 1 to OVERRIDE.

D. Place the keyswitch on CP 18 to OVERRIDE.

## ANSWER

C

## COMMENTS

A is incorrect. OP-902-009 Appendix 22B, requires keyswitch on Aux Panel 1 taken to OVERRIDE.
B, C and D are not in accordance with the guidance of OP-902-009 Appendix 22B.

| Cognitive Level | Tier/Group RO | Tier/Group SRO | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Fundamental/Memory | 2-1 | | Bank | | 41.10 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 56
**QUESTION ID**: 6107 **- A**

**DESCRIPTION:** Knowledge of M/G set power supplies
**AUTHOR:** evines **REVISION** 0 **REVISION DATE** 9/9/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** CED **CATEGORY:** SYSTEM

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| OP-006-001 | 12 | 01 | 11/20/2003 |
| OP-004-004 | 10 | 02 | 4/29/2004 |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 3.1-001-K2.05 | 3.1* | 3.5 | WLP-OPS-CED00 | 1 |

## QUESTION

Which of the following components would result in a loss of CEA MG Set A, if an overcurrent condition for the component occurred and its load breaker failed to open?

A. CEDM Fan Cooler C

B. Polar Crane

C. Back up Heater Bank 1

D. Proportional Heater Bank 1

## ANSWER

C

## COMMENTS

A is incorrect a fault on CEDM Fan Cooler C would trip the 31A bus. B is incorrect a fault on the Polar Crane would trip the 31A bus. C is correct a fault on Backup Heater Bank 1 would trip the 32A bus. D is incorrect a fault on Proportional Heater Bank 1 is protected by fuses.

| Cognitive Level | Tier/Group | | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| | RO | SRO | | | |
| Comprehension/Analysis | 2-2 | | New | | 41.7 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 57
**QUESTION ID**: 6108 **- A**

**DESCRIPTION:** Knowledge of LCO and Safety limits for RCS
**AUTHOR:** evines **REVISION** 1 **REVISION DATE** 9/10/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** RCS **CATEGORY:** PROCEDURE

| **REFERENCE:** | **REVISION:** | **CHANGE:** | **DATE:** |
|---|---|---|---|
| OP-100-001 | 19 | 03 | 8/29/2004 |
| TS 2.1.2 | | | |

| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | **OBJECTIVE** |
|---|---|---|---|---|
| 2-2-22 | 3.4 | 4.1 | WLP-OPS-RCS00 | 8 |
| | | | WLP-OPS-RCS00 | 9 |

## QUESTION

The reactor is at 100% power when a turbine trip occurs. The PNPO notes that RCS pressure is 2775 psia and no reactor trip breakers opened. What action must be accomplished per TS 2.1.2, Safety Limit – RCS Pressure?

A. Restore RCS pressure to < 2500 psia within 5 minutes.

B. Be in Hot Standby with RCS pressure < 2750 psia within 1 hour.

C. Be in Hot Standby with RCS pressure between 2025 and 2275 psia within 2 hours.

D. Restore RCS pressure to < 2250 psia within 15 minutes; be in Cold Shutdown in the next 30 hrs.

## ANSWER

B

## COMMENTS

A is incorrect must be in Mode 3 with pressure within safety limit within 1 hour. 2250 psia is RCS design pressure not the safety limit. B is correct must be in Mode 3 with pressure within safety limit within 1 hour. C is incorrect must be in Mode 3 with pressure within limits within 1 hour 2025 -2275 psia is the Mode 1 TS for RCS pressure. D is incorrect 2250 psia is the normal RCS pressure not the safety limit. Safety limit only requires that you go to Mode 3.

| **Cognitive Level** | **Tier/Group** | | **Question Source** | **Question History** | **10CFR Part 55 Content** |
|---|---|---|---|---|---|
| Fundamental/Memory | **RO** | **SRO** | New | | 41.5, 41.7 |
| | 2-2 | | | | |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 58
**QUESTION ID**: 60 **- A**

**DESCRIPTION:** Pressurizer level program manual operation
**AUTHOR:** rfletch **REVISION** 5 **REVISION DATE** 9/20/2004
**TYPE:** MULTIPLE CHOICE **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** PLC **CATEGORY:** PROCEDURE

| **REFERENCE:** | **REVISION:** | **CHANGE:** | **DATE:** | | |
|---|---|---|---|---|---|
| OP-901-110 | 03 | 03 | 3/2/2004 | | |
| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | **OBJECTIVE** | |
| 3.2-011-A4.04 | 3.2 | 2.9 | W-3-LP-OPS-PLC00 | 09 | |

## QUESTION

The plant is operating steady state at 35% power. Tavg is being maintained on the program. A Pressurizer Level Control system malfunction has occurred, requiring Pressurizer Level Control to be placed in Manual. The CRS wants Pzr level to be restored to program level prior to placing the pressurizer level controller back in Auto. What is your target level?

A. 33.0%

B. 38.5%

C. 43.0 %

D. 47.5%

## ANSWER

B

## COMMENTS

Provide Examinee with copy of Plant Data Book figure 2.2.1 RCS Temperature Control Bands vs Power and 2.3.3 Pressurizer Level Setpoint vs TAVG

A is incorrect. This answer is based on Tcold. B is correct 35% power Tavg is 555 which is 38.5%. C is incorrect. This answer is based on a Tavg of 560 degrees. D is incorrect. This answer is based on Thot.

| **Cognitive Level** | **Tier/Group** | | **Question Source** | **Question History** | **10CFR Part 55 Content** |
|---|---|---|---|---|---|
| Comprehension/Analysis | **RO** | **SRO** | Modified | | 41.7 |
| | 2-2 | | | | |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 59
**QUESTION ID**: 6128 **- A**

**DESCRIPTION:** CEA Position Interlocks
**AUTHOR:** avest **REVISION** 3 **REVISION DATE** 9/24/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** CED **CATEGORY:** SYSTEM

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| OP-004-004 | 10 | 02 | 4/29/2004 |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 3.1-014-K1.01 | 3.2* | 3.6 | WLP-OPS-CED00 | 4 |

**QUESTION**

Reg Group 6 stops while being withdrawn for ASI control. The NPO notes the following CEA position indication:

- CEA 20 – 145.5”
- CEA 21 – 147”
- CEA 22 – 147.75”
- CEA 23 – 148.5’’

Which of the following stopped Reg Group 6?

A. Upper Group Stop

B. Upper Electrical Limit

C. CEA Withdrawal Prohibit

D. Upper Control Limit

**ANSWER**

A

**COMMENTS**

A is correct. B is incorrect because the Upper Group stop occurs before the highest rod reaches the Upper Electrical limit. C is incorrect because the deviation is < the CWP setpoint of 5.5" from CEACs. D is incorrect because Upper Group limit only applies to Group P CEAs

| Cognitive Level | Tier/Group RO | Tier/Group SRO | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Comprehension/Analysis | 2-2 | | Modified | W3 SRO 2002 | 41.6 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 60
**QUESTION ID**: 4394 **- B**

**DESCRIPTION:** ENI Control Channel failure effects on CEDMCS Auto Sequential operation.
**AUTHOR:** kkirkpa **REVISION** 2 **REVISION DATE** 9/20/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** CED **CATEGORY:** PROCEDURE
RRS SYSTEM
ENI

| REFERENCE: | REVISION: | CHANGE: | DATE: | | |
|---|---|---|---|---|---|
| OP-004-014 | 05 | 01 | 5/22/2003 | | |
| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | **OBJECTIVE** | |
| 3.7-015-K3.06 | 2.9* | 3.2* | W-3-LP-OPS-ENI00 | 9 | |
| | | | W-3-LP-OPS-RR00 | 1 | |

## QUESTION

Given the following conditions:

- ENI Control Channel 1 failed low
- Reactor Power is currently 75%
- AMI Threshold controller potentiometer set at 50
- SBCS valve 6 permissive switch is in OFF
- CEDMCS Mode Select switch in Auto Sequential
- CPC pretrips present on at A and B channels
- Both RRS Channels have High Rate Insert lights illuminated
- Reactor Reg 1 is selected

Reg Group 6 CEA's will automatically insert if:

A. The AMI threshold is lowered

B. Place SBCS valve 6 Permissive switch to AUTO or MANUAL

C. At least 1 CPC supplied pretrip is cleared

D. RRS Select switch is placed to Channel 2

## ANSWER

D

## COMMENTS

A is incorrect. Power is greater than setpoint for auto motion inhibit
B is incorrect. SBCS valve availability is not affecting AMI threshold setpoint
C is incorrect. CWP only affects withdrawal
D is correct. Would deselect faulted NI channel from affecting AMI

| Cognitive Level | Tier/Group | | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| | **RO** | **SRO** | | | |
| Comprehension/Analysis | 2-2 | | Bank | | 41.5, 41.7 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 61
**QUESTION ID**: 6110 **- A**
**DESCRIPTION:** Ability to predict impacts and using procedures mitigate High Temperature in ARRS charcoal filter
**AUTHOR:** evines **REVISION** 4 **REVISION DATE** 9/20/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** ARR CCS **CATEGORY:** PROCEDURE SYSTEM

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| OP-009-004 | 11 | 08 | 6/3/2004 |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 3.5-027-A2.01 | 3.0* | 3.3* | WLP-OPS-CCS00 | 5 |
| | | | WLP-OPS-CCS00 | 6 |

## QUESTION

Airborne Radioactivity Removal Unit A is running. The following PMC alarms and reports are received:

- ARRU A CHAR FLT TEMP – HI
- ARRU A CHAR FILTER TEMP – TROUBLE
- E-13 (3A) ARRU CHAR ABSD TEMP – HI HI
- ARRU A HEPA FLTR AIR DP – HI
- NAO reports indications of fire in Airborne Radioactivity Removal Unit A Charcoal Filter

Which of the following is true?

A. Airborne Radioactivity Removal Unit A should be secured, and ARRS Deluge System should be manually initiated from the Control Room

B. Airborne Radioactivity Removal Unit A will trip automatically, and ARRS Deluge System should be manually initiated from the Control Room

C. Airborne Radioactivity Removal Unit A should be secured, the ARRS Deluge System will automatically initiate due to High Charcoal Bed Temperature.

D. Airborne Radioactivity Removal Unit A will trip automatically, the ARRS Deluge System will automatically initiate due to High Charcoal Bed Temperature

## ANSWER

A

## COMMENTS

A is correct ARRS trips only on actuation of RCP Deluge and ARRS Deluge system must be manually actuated in the control Room
B is incorrect ARRS trips only on actuation of RCP Deluge
C is incorrect ARRS Deluge system must be manually actuated in the control Room
D is incorrect ARRS trips only on actuation of RCP Deluge and ARRS Deluge system must be manually actuated in the control Room

| Cognitive Level | Tier/Group RO | Tier/Group SRO | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Comprehension/Analysis | 2-2 | | New | | 41.5, 41.10, 41.13, 43.5 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 62
**QUESTION ID**: 3985 **- N**

**DESCRIPTION:** Automatic isolation of a BACT discharge
**AUTHOR:** avest **REVISION** 3 **REVISION DATE** 9/20/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** BM **CATEGORY:** SYSTEM
PRM

| REFERENCE: | REVISION: | CHANGE: | DATE: | |
|---|---|---|---|---|
| OP-901-412 | 01 | 01 | 5/22/2003 | |
| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | **OBJECTIVE** |
| 3.9-068-K6.10 | 2.5 | 2.9 | WLP-OPS-BM00 | 7 |

## QUESTION

A discharge of BACT A is in progress when the NPO notes that Boron Management to Circulating Water Shutoff and Control Valves, BM-547 and BM-549, are closed. Any of the following could have caused these valves to close **EXCEPT**:

A. Low sample flow through the radiation monitor.

B. Low process flow from BACT A due to low level.

C. Radiation monitor detector output fails high.

D. Radiation monitor detector output fails low.

## ANSWER

B

## COMMENTS

B is correct. Low process will not close BM-547 and BM-549. A is incorrect. Low flow through rad monitor will close BM-547 and BM-549. C is incorrect. Rad monitor detector output above setpoint will close BM-547 and BM-549. D is incorrect. Rad monitor detector output below preset value will close BM-547 and BM-549.

| Cognitive Level | Tier/Group | | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Fundamental/Memory | **RO** | **SRO** | Bank | | 41.7, 41.11 |
| | 2-2 | | | | |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 63
**QUESTION ID**: 6106 **- A**

**DESCRIPTION:** Ability to predict and monitor changes in parameters associated with GWM and ventilation
**AUTHOR:** evines **REVISION** 2 **REVISION DATE** 9/20/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** GWM HVR **CATEGORY:** SYSTEM

| REFERENCE: | REVISION: | CHANGE: | DATE: | | |
|---|---|---|---|---|---|
| OP-007-003 | 14 | 00 | 1/11/2002 | | |
| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | **OBJECTIVE** | |
| 3.9-071-A1.06 | 2.5 | 2.8 | WLP-OPS-GWM00 | 12 | |

## QUESTION

Given the following:

- GDT A release in progress.
- Containment purge in progress under continuous release permit.
- Control Room Emergency Filtration Unit A is running.
- FHB Emergency Filtration unit B is running.

Which of the following would require the GDT release to be manually secured?

A. Switchgear Main Air Handling Unit A trips.

B. Broad Range Gas Monitor in HIGH alarm.

C. Control Room Emergency Filtration Unit A trips.

D. FHB Emergency Filtration Unit B trips.

## ANSWER

B

## COMMENTS

A is incorrect SWGR AHU tripping has no effect on Plant Vent Stack flow rate
B is correct if plant vent stack flow rate changes release must be manually secured BRGM will secure RAB normal ventilation .
C is incorrect CREFU tripping has no effect on Plant Vent Stack flow rate
D is incorrect FHB Emergency Filtration tripping has no effect on Plant Vent Stack flow rate

| Cognitive Level | Tier/Group | | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| | RO | SRO | | | |
| Comprehension/Analysis | 2-2 | | New | | 41.5, 41.13 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 64
**QUESTION ID**: 2209 **- B**

**DESCRIPTION:** Effect of a Fuel Handling Accident Actuation.
**AUTHOR:** avest **REVISION** 6 **REVISION DATE** 9/23/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** HVF **CATEGORY:** SYSTEM
RMS

| REFERENCE: | REVISION: | CHANGE: | DATE: | |
|---|---|---|---|---|
| OP-002-009 | 09 | 00 | 3/18/2004 | |
| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | **OBJECTIVE** |
| 3.7-072-K4.02 | 3.2* | 3.4* | W-3-LP-OPS-HVF00 | 5 |
| | | | W-3-LP-OPS-RMS00 | 2 |

## QUESTION

Which one of the following actions takes place when FHA and FHB high rad signals are sensed in the Fuel Handling Building (FHB)?

A. The standby FHB Normal Exhaust Fan starts.

B. FHB HVAC Room Exhaust Fan starts if room temperature is > 40ºF.

C. HVF-103 and HVF-104, FP Cool & Purif Sys HVAC Supply Dampers Close.

D. HVF-109 and HVF-110, FP Cool & Purif Sys HVAC Return Dampers Close.

## ANSWER

C

## COMMENTS

C is correct. A is incorrect standby FHB Normal Exhaust Fan will not start. B is incorrect FHB H&V Room Exhaust Fan is locked out < 50 degrees F. D is incorrect: the listed valves open on the actuation signal.

| Cognitive Level | Tier/Group | | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| | **RO** | **SRO** | | | |
| Fundamental/Memory | 2-2 | | Bank | | 41.7, 41.13, |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 65
**QUESTION ID**: 1294 **- A**

**DESCRIPTION:** IA Setpoints and reasons for actions
**AUTHOR:** avest **REVISION** 7 **REVISION DATE** 9/20/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** IA SA **CATEGORY:** SYSTEM

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| OP-003-016 | 10 | 08 | 1/22/2004 |
| OP-901-511 | 04 | 03 | 7/3/2000 |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 3.8-079-K4.01 | 2.9 | 3.2 | W-3-LP-OPS-AIR00 | 1 |
| | | | W-3-LP-OPS-PPO50 | 1 |

## QUESTION

Given the following:

- The plant is at 100% power
- Excessive Instrument Air (IA) usage has been noted on the PMC AIR mimic
- Initial Instrument Air header pressure was 115 psig and is slowly dropping

As IA header pressure drops, which one of the following actions occur?

A. The SA to IA Crossconnect valve starts to open at 105 psig to provide a backup source of air.

B. The running IA compressor loads at 100 psig IA header pressure to raise air compressor output.

C. The IA compressor selected for standby starts at 90 psig to double air compressor capacity.

D. The Instrument Air Dryers are bypassed at 80 psig to ensure dessicant blockage is not a factor.

## ANSWER

A

## COMMENTS

A is correct SA to IA Crossconnect valve starts to open at 105 psig. B is incorrect running IA compressor loads at 112 psig IA header pressure. C is incorrect IA compressor selected for standby starts at 105 psig. D is incorrect Instrument Air Dryers are bypassed at 95 psig.

| Cognitive Level | Tier/Group RO | Tier/Group SRO | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Fundamental/Memory | 2-2 | | Bank | | 41.7 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 66
**QUESTION ID**: 6096 **- A**

**DESCRIPTION:** Knowledge of Operations Standards
**AUTHOR:** evines **REVISION** 2 **REVISION DATE** 9/24/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** PPA **CATEGORY:** PROCEDURE

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| OP-100-001 | 19 | 03 | 8/29/2004 |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 2-1-1 | 3.7 | 3.8 | WLP-OPS-PPA00 | 2 |

## QUESTION

Which of the following is prohibited by OP-100-001, Operations Standards and Expectations?

A. Withdrawing CEA Group P two steps for ASI control while performing dilution to raise power.

B. The Outside Watch is assigned as Emergency Communicator and as a Fire Brigade member.

C. Moving CEAs for ASI control performed by a Reactor Operator, whose license is inactive per the requirements of 10 CFR 55, under the supervision of an operator with an active license.

D. A Shutdown Cooling Purification valve lineup verified by a Level B NAO who has successfully completed Level A NAO classroom training.

## ANSWER

B

## COMMENTS

A is incorrect. OP-100-001 allows minor reactivity manipulations for ASI control.
B is correct. OP-100-001 Attachment 6.2 states the Emergency Communicator shall not fill a Fire brigade position.
C is incorrect. Inactive licensed operators may manipulate controls under direct supervision.
D is incorrect. Operators may perform lineups after successful completion of training on a particular system.

| Cognitive Level | Tier/Group RO | Tier/Group SRO | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Fundamental/Memory | 3 | | Bank | W3 SRO 2003 | 41.10 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 67
**QUESTION ID**: 6097 **- A**

**DESCRIPTION:** Ability to operate plant paging system
**AUTHOR:** evines **REVISION** 0 **REVISION DATE** 9/22/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** COM **CATEGORY:** PROCEDURE

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| FP-001-020 | 11 | 01 | 2/28/2000 |
| OP-100-001 | 19 | 03 | 8/29/2004 |
| EP-001-010 | 23 | 00 | 9/2/2002 |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 2-1-16 | 2.9 | 2.8 | W3-LP-EP-SS | 7 |

## QUESTION

Which of the following would require making a plant page announcement and repeating the announcement at least two more times?

A. Starting HPSI Pump A with no Operator in attendance at the pump.

B. Entry into the Control Room Evacuation Procedure.

C. Entry into the Reactor Trip Recovery Procedure.

D. The plant has declared an Unusual Event.

## ANSWER

D

## COMMENTS

A. Is incorrect OP-100-001 states an announcement should be made twice
B. Is incorrect OP-901-502 states an announcement should be made twice
C. Is incorrect OI-038-00 does not direct announcement be repeated two more times
D. Is correct EP-001-010 directs the announcement be made then repeated at least two more times

| Cognitive Level | Tier/Group RO | Tier/Group SRO | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Fundamental/Memory | 3 | | New | | 41.10 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 68
**QUESTION ID**: 6098 **- A**

**DESCRIPTION:** Criticality below PDIL
**AUTHOR:** evines **REVISION** 3 **REVISION DATE** 9/24/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** CED **CATEGORY:** PROCEDURE
PPO SYSTEM
PPN

| **REFERENCE:** | **REVISION:** | **CHANGE:** | **DATE:** |
|---|---|---|---|
| OP-010-003 | 01 | 10 | 8/12/2004 |

| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | **OBJECTIVE** |
|---|---|---|---|---|
| 2-2-1 | 3.7 | 3.6 | WLP-OPS-PPN01 | 3 |

## QUESTION

A Reactor Startup is in progress. The PNPO withdraws CEA group 5 to 50 inches and stops all rod motion. The following indications are observed by the PNPO:

- Positive Startup rate
- Reactor Power steadily rising.

Which of the following actions would be correct?

A. Manually drive all CEAs to lower electrical limit and commence direct boration.

B. Trip the reactor and commence emergency boration.

C. Manually drive all Reg Group CEAs to lower electrical limit and recalculate ECC.

D. Commence emergency boration and recalculate ECC.

## ANSWER

B

## COMMENTS

B is correct OP010-003 requires the reactor be tripped and emergency boration commenced. A, B and C are incorrect due to not being in compliance with procedural guidance.

| **Cognitive Level** | **Tier/Group** | | **Question Source** | **Question History** | **10CFR Part 55 Content** |
|---|---|---|---|---|---|
| | **RO** | **SRO** | | | |
| Comprehension/Analysis | 3 | | New | | 41.1, 41.10 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 69
**QUESTION ID**: 2892 **- A**

**DESCRIPTION:** Identify the Temporary Alt by condition
**AUTHOR:** mjesse **REVISION** 3 **REVISION DATE** 9/20/2004
**TYPE:** MULTIPLE CHOICE **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** PPA **CATEGORY:** PROCEDURE

| **REFERENCE:** | **REVISION:** | **CHANGE:** | **DATE:** |
|---|---|---|---|
| UNT-005-004 | 16 | 00 | 3/4/2004 |

| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | **OBJECTIVE** |
|---|---|---|---|---|
| 2-2-11 | 2.5 | 3.4* | w-3-lp-ops-ppa00 | 2 |

## QUESTION

Which of the following statements best describes a Temporary Alteration as defined in UNT-005-004, Temporary Alteration Control?

A. Removing a failed circuit card from a Seismic Class I cabinet under an approved Work Authorization with the equipment declared out of service.

B. Gagging Feedwater Pump Suction relief valve to prevent weepage while evaluating the need to change relief setpoint.

C. Installing electrical jumpers in an approved maintenance procedure with independent verification signatures for installation and removal.

D. Attaching hoses or tubing to system drain connections to facilitate draining within the boundaries of an approved clearance.

## ANSWER

B.

## COMMENTS

A is incorrect Unt 005-004 does not require Temp Alt if done under approved WO
B is correct disabling relief valves is listed in Unt 005-004
C is incorrect Unt 005-004 does not require Temp Alt if done under approved maint procedure
D is incorect Unt 005-004 does not require Temp Alt if done under approved clearance

| **Cognitive Level** | **Tier/Group** | | **Question Source** | **Question History** | **10CFR Part 55 Content** |
|---|---|---|---|---|---|
| Fundamental/Memory | **RO** 3 | **SRO** | Bank | | 41.10, 43.3 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 70
**QUESTION ID**: 6099 **- A**

**DESCRIPTION:** Knowledge of Control Rod Programming
**AUTHOR:** evines **REVISION** 4 **REVISION DATE** 9/20/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** PPN **CATEGORY:** PROCEDURE
TS

| **REFERENCE:** | **REVISION:** | **CHANGE:** | **DATE:** |
|---|---|---|---|
| OP-010-005 | 03 | 03 | 8/12/2004 |
| TS 3.1.3 | | | |

| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | **OBJECTIVE** |
|---|---|---|---|---|
| 2-2-33 | 2.5 | 2.9 | WLP-OPS-PPN02 | 1 |
| | | | WLP-OPS-PPN02 | 4 |

## QUESTION

A normal plant shutdown is in progress for refueling, the reactor is at 30 % power. The Regulating Groups CEAs are being used for ASI control. Regulating Group 6 CEAs are at 80 inches. Regulating Group 5 may not be inserted beyond _____ inches.

A. 75

B. 80

C. 90

D. 95

## ANSWER

D

## COMMENTS

Provide Examinee with copy of COLR figure 4 Regulating CEA Group insertion Limits versus Thermal Power and OP-010-005 Att. 9.9

A is incorrect OP-010-005 Att. 9.9 requires group 5 be maintained 15 inches above group 6
B is incorrect OP-010-005 Att. 9.9 requires group 5 be maintained 15 inches above group 6
C is incorrect OP-010-005 Att. 9.9 requires group 5 be maintained 15 inches above group 6
D is correct OP-010-005 Att. 9.9 requires group 5 be maintained 15 inches above group 6

| **Cognitive Level** | **Tier/Group** | | **Question Source** | **Question History** | **10CFR Part 55 Content** |
|---|---|---|---|---|---|
| Comprehension/Analysis | **RO** 3 | **SRO** | New | | 41.6, |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 71
**QUESTION ID**: 6100 **- A**

**DESCRIPTION:** Knowledge of the process for performing a Containment Purge
**AUTHOR:** evines **REVISION** 1 **REVISION DATE** 9/8/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** CAP **CATEGORY:** PROCEDURE

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| OP-002-010 | 14 | 02 | 9/10/2003 |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 2-3-9 | 2.5 | 3.4 | WLP-OPS-TS00 | 3 |

## QUESTION

Which of the following is TRUE about Containment Purge during Mode 6 with the Containment Equipment Hatch open?

A. The Airborne Radioactivity Removal System is prohibited from running during Containment Purge.

B. If Containment Purge continues for more than 10 hours, the release will be covered by the Plant Stack Continuous Permit.

C. Containment Purge must be secured if ambient barometric pressure is 29.8 INHG.

D. Containment Purge may be interrupted due to high differential pressure if CAP 102, Containment Purge Make-up valve is stuck closed.

## ANSWER

B.

## COMMENTS

A is incorrect OP-002-010 requires ARRS to be running during Containment Purge
B is correct OP-002-010 states if purge continues for > 10 hours release will be covered by continuous permit
C is incorrect ambient pressure restriction is applicable only in modes 1-4
D is incorrect make-up valve will not open with equipment hatch open

| Cognitive Level | Tier/Group RO | Tier/Group SRO | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Fundamental/Memory | 3 | | Bank | | 41.13, 43.4 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 72
**QUESTION ID**: 6105 **- A**

**DESCRIPTION:** Ability to perform procedures to reduce personnel exposure
**AUTHOR:** evines **REVISION** 0 **REVISION DATE** 9/20/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** PPA **CATEGORY:** PROCEDURE
**REFERENCE:** **REVISION:** **CHANGE:** **DATE:**
RP-102 02

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 2-3-10 | 2.9 | 3.3 | W3-LP-OPS-RAD02 | 7 |

## QUESTION

A valve must be worked in the RCA. The dose rate in the area is 40 mrem/hr.
Two options exist to complete the work.

Option 1: Operator X can perform the assignment in seventy five (75) minutes alone.

Option 2: Operators Y and Z, can perform the assignment in forty five (45) minutes together.

Which of the following options is preferable and consistent with the ALARA program?

A. Option 1 since Operator X exposure is 50 mrem.

B. Option 1 since Operator X exposure is 60 mrem.

C. Option 2 since the exposure per person is 15.0 mrem.

D. Option 2 since the exposure per person is 30.0 mrem.

## ANSWER

A

## COMMENTS

A is correct option 1 is lowest total exposure. B is incorrect 60 mrem dose is incorrect. C is incorrect 15 mrem per person is incorrect and total exposure for option 2 is higher than option 1. D is incorrect total exposure for option 2 is higher than option 1

| Cognitive Level | Tier/Group RO | Tier/Group SRO | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Comprehension/Analysis | 3 | | New | | 41.10, 41.12, 41.13, 43.4 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 73
**QUESTION ID**: 6102 **- A**

**DESCRIPTION:** Knowledge of Setpoints and automatic actions associated with EOP entry conditions
**AUTHOR:** evines **REVISION** 2 **REVISION DATE** 9/20/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** PPE **CATEGORY:** PROCEDURE
PPS

| REFERENCE: | REVISION: | CHANGE: | DATE: | | |
|---|---|---|---|---|---|
| OP-902-000 | 09 | 00 | 2/12/2001 | | |
| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | | **OBJECTIVE** |
| 2-4-2 | 3.9 | 4.1 | WLP-OPS-PPE01 | | 11 |

## QUESTION

The following plant conditions exist:

- A feed line break has occurred inside containment.
- Containment pressure is 17.4 psia.
- Containment radiation levels are normal.
- PZR pressure is 1825 psia.
- RWSP level is 90%.
- S/G #1 is at 925 psia and 50% WR.
- S/G #2 is at 580 psia and 20% WR.

Which of the following groups of actuation signals are present?

A. SIAS, MSIS, CIAS, EFAS-1

B. SIAS, MSIS, CIAS, EFAS-2

C. SIAS, CIAS, CSAS, EFAS-1

D. MSIS, CSAS, CIAS, EFAS-2

## ANSWER

A.

## COMMENTS

A is correct SIAS, MSIS, CIAS, EFAS-1 setpoints met
B is incorrect EFAS-2 setpoints not met
C is incorrect CSAS, setpoints not met
D is incorrect CSAS, EFAS-2 setpoints not met

| Cognitive Level | Tier/Group | | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Comprehension/Analysis | **RO** 3 | **SRO** | Bank | | 41.7, 41.10, |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 74
**QUESTION ID**: 5774 **- A**

**DESCRIPTION:** Methods of checking Safety Functions during EOP Implementation
**AUTHOR:** dcassid **REVISION** 0 **REVISION DATE** 6/21/2000
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** ADM **CATEGORY:** PROCEDURE

| **REFERENCE:** | **REVISION:** | **CHANGE:** | **DATE:** |
|---|---|---|---|
| OP-100-017 | 00 | 01 | 7/3/2000 |

| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | **OBJECTIVE** |
|---|---|---|---|---|
| 2-4-8 | 3.0 | 3.7 | W-3-LP-OPS-PPE01 | 4 |

## QUESTION

Safety Functions are checked during EOP implementation by each of the following methods with the exception of:

A. Safety Function Status Checklists of each Optimal Recovery Procedure.

B. The performance of OP-902-000, Standard Post Trip Actions.

C. Safety Function prioritization in the Functional Recovery Procedure.

D. The performance of the OP-902-009 Att. 1, Diagnostic Flowchart.

## ANSWER

D

## COMMENTS

REF: OP-100-017, Administrative Procedure Emergency Operating Procedure Implementation Guide. R0 C1. Page 16. D is correct. The diagnostics flow chart is used to direct you to an optimal recovery procedure or the functional recovery procedure using groups of parameters that can reliably aid in distinguishing between events. Per OP-100-017 A, B, and C are ways of checking that Safety Functions are met.

| **Cognitive Level** | **Tier/Group** | | **Question Source** | **Question History** | **10CFR Part 55 Content** |
|---|---|---|---|---|---|
| | **RO** | **SRO** | | | |
| Fundamental/Memory | 3 | | Bank | | 41.10, 43.5 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 75
**QUESTION ID**: 6104 **- A**
**DESCRIPTION:** Ability to perform actions that require immediate operation of system components and control
**AUTHOR:** evines **REVISION** 4 **REVISION DATE** 9/24/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** PPO **CATEGORY:** PROCEDURE

| REFERENCE: | REVISION: | CHANGE: | DATE: | | |
|---|---|---|---|---|---|
| OP-901-101 | 04 | 03 | 1/20/2004 | | |
| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | | **OBJECTIVE** |
| 2-4-49 | 4.0 | 4.0. | WLP-OPS-PPO10 | | 2 |

## QUESTION

Plant conditions are as follow:

- 100% power, steady-state operations
- No major equipment out of service
- Subgroups 5 and 11 are selected
- The following annunciators are received on CP-1
  - FWPT A TRIP LUBE OIL PRESS LO
  - FWPT A FLOW LO
- The SNPO reports that Feed Water Pump A has tripped

What are the PNPO's immediate actions as a result of this condition?

A. Place CEDM Mode Select Switch to AS, verify selected Subgroups dropped

B. Place CEDM Mode Select Switch to MS, verify selected Subgroups dropped

C. Place CEDM Mode Select Switch to AS, verify Main Turbine load < 576 MW

D. Place CEDM Mode Select Switch to MS, verify Main Turbine load < 576 MW

## ANSWER

A

## COMMENTS

A is correct Place CEDM Mode Select Switch to AS, Verify Subgroups dropped are immediate actions for RX cutback
B is Incorrect Place CEDM Mode Select Switch to AS, is immediate action for RX cutback
C is Incorrect Place Verify Subgroups dropped are immediate actions for RX cutback
D is Incorrect Place CEDM Mode Select Switch to AS, Verify Subgroups dropped are immediate actions for RX cutback

| Cognitive Level | Tier/Group | | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| | RO | SRO | | | |
| Fundamental/Memory | 3 | | New | | 41.10, 43.2 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 76/1
**QUESTION ID**: 4294 **- A**

**DESCRIPTION:** Conditions requiring entry into OP-902-008.
**AUTHOR:** avest **REVISION** 4 **REVISION DATE** 8/23/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** PPE **CATEGORY:** PROCEDURE
SRO LEVEL

| REFERENCE: | REVISION: | CHANGE: | DATE: | | |
|---|---|---|---|---|---|
| OP-902-009 | 1.2 | 00 | 10/2/2003 | | |
| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | | **OBJECTIVE** |
| 4.4-E2-EA2.2 | 3.0 | 4.0 | W-3-LP-OPS-PPE08 | | 1 |

## QUESTION

Which of the following situations require entry into OP-902-008, Functional Recovery Procedure? (Assume all other equipment is operating as designed unless specified otherwise)

A. SGTR in progress combined with a loss of offsite power and EDG B trips.

B. Large Break LOCA in progress and reactor trip using DRTS was required.

C. 3 CEA's fail to insert into the core and a Station Blackout is in progress.

D. SG 1 Main Steam Line Break with Charging Pumps A/B and B unavailable.

## ANSWER

C

## COMMENTS

C is correct per OP-902-009 App. 1. With a Station blackout occurring, emergency boration can not be in progress. A is incorrect because the optimal recovery procedure supports mitigation with only one safety train available. B is incorrect because although the automatic and manual trip functions of PPS failed the reactor has been shutdown so the LOCA safety function status checklist would be satisfied. D is incorrect because the ESD safety function status checklist only requires that the available charging pumps be running and based on the stem Charging Pump A operated as required.

| Cognitive Level | Tier/Group | | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| | RO | SRO | | | |
| Comprehension/Analysis | | 1-1 | Bank | W3 2002 | 43.1, 43.5 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 77/2
**QUESTION ID**: 6086 **- A**

**DESCRIPTION:** Determine RCS Pressure to Maintain during RCS Cooldown
**AUTHOR:** avest **REVISION** 0 **REVISION DATE** 8/24/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** PPE **CATEGORY:** PROCEDURE
SYSTEM
SRO LEVEL

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| OP-902-007 | 10 | 00 | 4/12/2001 |
| OP-902-008 | 12 | 00 | 4/12/2001 |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 4.1-E38-EA2.15 | 4.2 | 4.4 | WLP-OPS-PPE07 | 8 |

## QUESTION

A Steam Generator Tube Rupture has occurred in S/G 2 and the following conditions exist:

- Highest $T_{cold}$ = 490ºF
- Highest $T_{hot}$ 500ºF
- S/G 2 is isolated and pressure = 800 psia
- RCPs 1B and 2B are running to enhance the cooldown

Determine the minimum RCS pressure that you should order the PNPO to maintain at this time:

A. 850 psia

B. 870 psia

C. 900 psia

D. 950 psia

## ANSWER

C

## COMMENTS

Provide OP-902-007 Pg. 11 and OP-902-009, Appendix 2, Att. 2A to examinees

C is correct because it is necessary to maintain pressure above this value to support RCP operation which is more restrictive than the 28 degree subcooling curve. A is incorrect because it violates both the App 2A RCP curve and the 28 degree subcooling curve but is plausible because one criteria of the procedure step is to get RCS pressure to 50 psid of the affected S/G. B is incorrect because it violates the RCP curve but is plausible because one criteria of the procedure step is to get RCS pressure to meet the App. 2A criteria for the subcooling curve. D is incorrect because it does not minimize the differential pressure between the RCS and the affected S/G even though it meets the criteria of the App 2A curves but is plausible because one criteria of the procedure step is to get RCS pressure to 950 psia.

| Cognitive Level | Tier/Group | | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Comprehension/Analysis | **RO** | **SRO** 1-1 | New | | 43.5 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 78/3
**QUESTION ID**: 6114 **- A**

**DESCRIPTION:** Ability to apply Tech Specs for a system
**AUTHOR:** avest **REVISION** 0 **REVISION DATE** 9/11/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** MS **CATEGORY:** PROCEDURE
RCS SRO LEVEL
**REFERENCE:** **REVISION:** **CHANGE:** **DATE:**
TS 3.4.4

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 2-1-12 | 2.9 | 4 | WLP-OPS-RCS00 | 9 |

## QUESTION

Which of the following would require steam generator tube inspections to be performed during the next shutdown after the event? (assume no other malfunctions occurred)

A. A line break upstream of the letdown flow control valves that was manually isolated by the PNPO prior to auto isolation.

B. A rupture occurs on the suction line to FWPT A.

C. The EFW pump AB supply line ruptures upstream of MS-401B.

D. A seismic event is felt in the Control Room, the amber and red lights are OFF on the Seismic Monitoring panel.

## ANSWER

C

## COMMENTS

Provide examinee with a copy of TS 3.4.4

C is correct per Tech Spec 3.4.4. This event would result in blowdown of the affected SG and excessive cooldown of the RCS. A is incorrect because the initial conditions state that no other malfunctions have occurred which means the operator isolated the LOCA prior to an ESFAS (SIAS/CIAS) actuation. B is incorrect because the feedwater pumps would end up tripping on low suction pressure isolating the break and no cooldown would occur. D is incorrect because indications provided for the Seismic panel indicate that the event did not exceed the oerating basis earthquake.

| Cognitive Level | Tier/Group RO | Tier/Group SRO | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Comprehension/Analysis | | 1-1 | New | | 43.2 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 79/4
**QUESTION ID**: 6123 **- A**

**DESCRIPTION:** Ability to determine and interpret the following as they apply to the (loss of feedwater): Facility conditions and selection of appropriate procedures during abnormal and emergency operations

**AUTHOR:** avest **REVISION** 2 **REVISION DATE** 9/24/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** PPE **CATEGORY:** PROCEDURE
SRO LEVEL

| **REFERENCE:** | **REVISION:** | **CHANGE:** | **DATE:** |
|---|---|---|---|
| OP-902-009 | 1.2 | 00 | 10/2/2003 |
| OP-902-006 | 09 | 00 | 4/12/2001 |

| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | **OBJECTIVE** |
|---|---|---|---|---|
| 4.4-E6-EA2.1 | 2.8 | 3.9 | WLP-OPS-PPE06 | 9 |

## QUESTION

A trip of the 1B 6.9 KV Bus occurs followed by a complete loss of condenser vacuum. Shortly thereafter the Condensate Storage Pool (CSP) develops an unisolable leak. Which of the following procedures should be implemented and what action should be taken when CSP level lowers less than 25%?

A. OP-901-220, Loss of Condenser Vacuum: open CMU-141, CSP Level Control Valve Bypass.

B. OP-902-001, Reactor Trip Recovery: start the Auxiliary Feedwater Pump and establish flow.

C. OP-902-003, Loss of Offsite Power/Loss of Forced Circulation: transfer EFW pump suctions to both Wet Cooling Tower basins.

D. OP-902-006, Loss of Main Feedwater: transfer EFW pump suctions to one Wet Cooling Tower basin.

## ANSWER

D

## COMMENTS

D is correct. The conditions given cause a loss of both main feedwater pumps. A is incorrect because a reactor trip would occur for the given conditions. B is incorrect because OP-902-001 requires main feedwater to be supplying a Steam Generator to implement. C is incorrect because the conditions given would not cause a loss of all forced flow.

| **Cognitive Level** | **Tier/Group** | | **Question Source** | **Question History** | **10CFR Part 55 Content** |
|---|---|---|---|---|---|
| Comprehension/Analysis | **RO** | **SRO** | New | | 43.5 |
| | | 1-1 | | | |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 80/5
**QUESTION ID**: 6087 **- A**

**DESCRIPTION:** Knowledge of Technical Specification Bases for a TEDG
**AUTHOR:** avest **REVISION** 0 **REVISION DATE** 8/25/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** EDG **CATEGORY:** ADMIN
SRO LEVEL
PROCEDURE

| **REFERENCE:** | **REVISION:** | **CHANGE:** | **DATE:** | |
|---|---|---|---|---|
| TS 3.8.1 | | | | |
| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | **OBJECTIVE** |
| 2-2-25 | 2.5 | 3.7 | WLP-OPS-EDG00 | 7 |

## QUESTION

The initial availability verification of a Temporary Emergency Diesel has been performed for an Emergency Diesel Generator outage. Per the TS Bases, all of following are required for the subsequent availability verification except:

A. Verify a 24 hr on-site fuel supply is available.

B. Ensure TEDG aligned to supply through the non-safety bus to the safety bus.

C. Start the TEDG and verify proper operation.

D. Verify the TEDG is mechanically and electrically ready for manual operation.

## ANSWER

C

## COMMENTS

Per the TS Bases for TS 3.8.1.1, the start of the TEDG is not mentioned in subsequent availability verifications – only in the initial availability verification. This makes C the correct answer. A, B, and D are all requirements for the subsequent availability verification, which A, B, and D incorrect but valid distractors. A and B are also required in the initial availability verification.

| **Cognitive Level** | **Tier/Group** | | **Question Source** | **Question History** | **10CFR Part 55 Content** |
|---|---|---|---|---|---|
| Fundamental/Memory | **RO** | **SRO** | New | | 43.2 |
| | | 1-1 | | | |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 81/6
**QUESTION ID**: 5878 **- B**

**DESCRIPTION:** Determine the Location of Leak in ACC
**AUTHOR:** avest **REVISION** 1 **REVISION DATE** 9/24/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** ACC PPO **CATEGORY:** SRO LEVEL SYSTEM

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| SD CC | | | |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 4.2-A62-AA2.01 | 2.9 | 3.5 | WLP-OPS-CC00 | 7 |

## QUESTION

Given the following:

- Jockey Pump B is running
- ACC Pump B Secured
- ACC-126B, ACC B Temp Cntrl Vlv is closed
- ACC-110B, ACC Pump B Disch Isol is closed
- Component Cooling Water Pump A is OOS
- Component Cooling Water Pump B is Operable

Wet Cooling Tower (WCT) B Level starts lowering and ACC Pump B starts and ACC-126B remains closed. WCT B level is 95% and slowly lowering. What is the location of the leak and what is the maximum time frame to be in Mode 3 if no equipment is returned to service?

A. Between ACC-108B, ACC Pump B Outlet Check Valve and ACC-110B, ACC Pump B Disch Isol. Mode 3 must be reached within the next 7 hours.

B. Between ACC-108B, ACC Pump B Outlet Check Valve and ACC-110B, ACC Pump B Disch Isol. Mode 3 must be reached within the next 78 hours.

C. Between ACC-110B, ACC Pump B Disch Isol, and ACC-126B, ACC B Temp Cntrl Vlv. Mode 3 must be reached within the next 7 hours.

D. Between ACC-110B, ACC Pump B Disch Isol, and ACC-126B, ACC B Temp Cntrl Vlv. Mode 3 must be reached within the next 78 hours.

## ANSWER

C

## COMMENTS

Provide examinee with a copy of G-160 Sheet 5, TS 3.7.3, TS 3.7.4, and OP-100-014 Att.6.6

C is correct. To get the auto start of the pump, the leak has to be in a place that would affect the system pressure at the CC HX shell, where the pressure instrument that provides the auto start is located. The allowed time to get to Mode 3 is 1 hr + 6 hrs per TS 3.0.3 and action b of 3.7.4. The other location is isolated from the pressure switch and would not undermine the Jockey pump's ability to maintain system pressure.

| Cognitive Level | Tier/Group RO | Tier/Group SRO | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Comprehension/Analysis | | 1-1 | Modified | W3 2002 SRO | 43.5 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 82/7
**QUESTION ID**: 6135 **- A**

**DESCRIPTION:** Determine inoperable valves and action as a result of IA Malfunction
**AUTHOR:** avest **REVISION** 1 **REVISION DATE** 9/29/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** FW **CATEGORY:** PROCEDURE
PPO SRO LEVEL
IA

| **REFERENCE:** | **REVISION:** | **CHANGE:** | **DATE:** |
|---|---|---|---|
| OP-901-511 | 04 | 03 | 7/3/2000 |

| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | **OBJECTIVE** |
|---|---|---|---|---|
| 4.2-A65-AA2.05 | 3.4* | 4.1 | WLP-OPS-PPO50 | 3 |
| | | | WLP-OPS-PPO50 | 4 |

## QUESTION

Reactor power is 100%. An instrument air leak results in IA header pressure lowering and stablilizing at 82 psig by CP-1 indication. The PMC is unavailable and OP-901-501, PMC or COLSS Inoperable is being implemented. The Control Room staff has implemented OP-901-511, Att. 4, Safety Related Valve Accumulator Checks. The RCA operator calls in the following readings:

- CC-134A, Dry Cooling Tower A CCW Bypass 74 psig
- CC-134B, Dry Cooling Tower B CCW Bypass 76 psig
- CC-710, Cntmt CCW Return Hdr Inside Cntmt Isol 91 psig
- CC-641, CCW to Containment Cntmt Outside Isol 92 psig
- CC-713, Cntmt CCW Return Hdr Outside Cntmt Isol 89 psig

Which of the following is correct?

A. CC-134A and CC-134B are inoperable. Enter TS 3.7.4, restore to operable status within 1 hour or be in Hot Standby within the following 6 hours.

B. CC-134 A and CC-135A are inoperable. Enter TS 3.7.4, restore to operable status within 72 hours or be in Hot Standby within the following 6 hours.

C. CC-710 and CC-713 are inoperable. Enter TS 3.6.3, restore to operable status within 4 hours or be in Hot Standby within the following 6 hours.

D. CVR-101 and CVR-201 are inoperable. Enter TS 3.0.3, restore to operable status within 1 hour or be in Hot Standby within the following 6 hours.

## ANSWER

D

## COMMENTS

Provide Tech Spec 3.6.3, TRM 3.6.3, 3.6.5, 3.7.4, OP-100-014 Att 6.6 and OP-901-511, Att. 4 to examinees.
D is correct. The IA pressure minus the 5 psi pressure drop to the valve make CVR-101 and 201 inop. A is incorrect because CC-134B is not inoperable. B is incorrect because CC-135A is not inop. C is incorrect because only CC-713 is inoperable for the conditions given.

| **Cognitive Level** | **Tier/Group** | | **Question Source** | **Question History** | **10CFR Part 55 Content** |
|---|---|---|---|---|---|
| | **RO** | **SRO** | | | |
| Comprehension/Analysis | | 1-1 | New | | 43.5 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 83/8
**QUESTION ID**: 3502 **- B**

**DESCRIPTION:** Actions on continuous CEA motion.
**AUTHOR:** avest **REVISION** 1 **REVISION DATE** 8/23/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** PPO **CATEGORY:** PROCEDURE
SRO LEVEL

| REFERENCE: | REVISION: | CHANGE: | DATE: | | |
|---|---|---|---|---|---|
| OP-901-102 | 03 | 03 | 7/7/2004 | | |
| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | | **OBJECTIVE** |
| 4.2-A1-AA2.03 | 4.5 | 4.8 | W-3-LP-OPS-PPO10 | | 3 |

## QUESTION

Given the following:

- Reactor power is 99.5%
- Group P is inserted to 115 inches.
- The PNPO pulls Group P out 3 steps in MANUAL GROUP and returns the CEA Mode Selector Switch to the OFF position.
- Reg Group P CEAs continue stepping out.

As the CRS, which of the following orders to the NPO is warranted?

A. Initiate emergency boration.

B. Manually insert Group P.

C. Manually trip the reactor.

D. Open the 32A(B) bus feeder bkrs.

## ANSWER

C

## COMMENTS

C is correct per OP-901-102. A, B, and D are all ways to reduce the + reactivity addition but do not meet the criteria of the procedure.

| Cognitive Level | Tier/Group | | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| | **RO** | **SRO** | | | |
| Fundamental/Memory | | 1-2 | Bank | | 43.5 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 84/9
**QUESTION ID**: 6088 **- A**
**DESCRIPTION:** Ability to determine and interpret PZR level as a function of power level or Tave as it applies to a PLC malfunction
**AUTHOR:** avest **REVISION** 0 **REVISION DATE** 8/26/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** PLC PPO **CATEGORY:** PROCEDURE SRO LEVEL

| REFERENCE: | REVISION: | CHANGE: | DATE: | | |
|---|---|---|---|---|---|
| OP-901-110 | 03 | 03 | 3/2/2004 | | |
| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | **OBJECTIVE** | |
| 4.2-A28-AA2.02 | 3.4 | 3.8 | WLP-OPS-PPO10 | 1 | |

## QUESTION

Given the following:

- Reactor Power = 100% steady
- PZR Level indicators RC-IPI-0110X and Y = 54%, slowly lowering
- RCS pressure indicators = 2245 psia, slowly lowering
- RRS1 and RRS 2 Tave recorders show a step drop on both Tavg pens from 574ºF to 555ºF
- Letdown Flow = 126 gpm
- Charging flow = 44 gpm

Determine the correct procedure and subsection to implement.

A. OP-901-110, Pressurizer Level Control Malfunction, Subsection E1, Pressurizer Level Control Channel Malfunction

B. OP-901-110, Pressurizer Level Control Malfunction, Subsection E2, Pressurizer Level Setpoint Malfunction

C. OP-901-110, Pressurizer Level Control Malfunction, Subsection E3, Pressurizer Level Controller Malfunction

D. OP-901-112, Charging/Letdown Malfunction, Subsection E2, Letdown Malfunction

## ANSWER

B

## COMMENTS

B is correct because the Instantaneous drop in Tavg indicates an instrument failure of an input to the Tavg calculation in RRS which determines the pressurizer level setpoint based on Tavg. A is incorrect because there would be a mismatch in level indication between channels for this malfunction. C and D are incorrect because there would not be any immediate effect on Tavg for these failures.

| Cognitive Level | Tier/Group | | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| | RO | SRO | | | |
| Comprehension/Analysis | | 1-2 | New | | 43.5 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 85/10

**QUESTION ID**: 6134 **- A**

**DESCRIPTION:** Ability to interpret Control Room indications to verify sthe status and operation of the system, and understand how operator actions and directives affect plant and system conditions

**AUTHOR:** avest **REVISION** 1 **REVISION DATE** 9/27/2004

**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1

**PLANT SYSTEM:** ENI **CATEGORY:** PROCEDURE
RF SRO LEVEL

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| TS 3.9.2 | | | |
| RF-001-001 | 10 | 00 | 3/27/1903 |
| TS 3.1.2 | | | |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 2-4-48 | 3.5 | 3.8 | W-3-LP-OPS-REQ04 | 1 |

**QUESTION**

Given the following:

- The plant is in Mode 6
- Startup Channel 1 reads 150 cps
- Startup Channel 2 reads 0 cps
- Startup Channel 2 Offnormal annunciator is alarming
- Startup Channel 1 and 2 HV Select switches are in On per RF-001-001
- Refueling personnel are installing the reactor head
- RF-004-001, Att. 9.1, Dilution Flowpath Isolation Verification has been completed.
- Mode 6 minimum required boron concentration is 2400 ppm
- Charging Pump A breaker is racked in, the pump is not running
- Charging Pump AB and B breakers are racked out

What actions must be done?

A. Enter TS 3.9.2.a, immediately suspend installation of reactor head

B. Enter TS 3.9.2.a, & 3.1.2.9.b, sample RCS boron within an hour

C. Enter TS 3.1.2.9.b, sample RCS boron every 2.25 hours

D. Enter TS 3.9.2.a, stop work that could add water < 2400 ppm to the RCS

**ANSWER**

D

**COMMENTS**

Provide TS 3.1.2.9 and TS 3.9.2 , and RF-0001-001, Att. 9.21 to examinees.
D is correct. Startup channel 2 is failed low. Two channels are required in Mode 6. The action is to secure core alts which are currently not in progress (head installation is not a core alt) and to stop any activities that could introduce water into the RCS that is less than the concentration that satisfies TS 3.9.1 (required SDM). A is incorrect because the head installation is not a core alt. B and C are incorrect because 3.1.2.9 is met though option b in the LCO per given conditions.

| Cognitive Level | Tier/Group RO | Tier/Group SRO | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Comprehension/Analysis | | 1-2 | New | | 43.5 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 86/11
**QUESTION ID**: 6125 **- A**
**DESCRIPTION:** Ability to determine and interpret the following as they apply to a Loss of Containment Integrity: Loss of Containment Integrity
**AUTHOR:** avest **REVISION** 0 **REVISION DATE** 9/18/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** CB **CATEGORY:** PROCEDURE
PPE SRO LEVEL

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| OP-902-002 | 09 | 00 | 4/12/2001 |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 4.2-A69-AA2.01 | 3.7 | 4.3 | WLP-OPS-PPE02 | 19 |

## QUESTION

Given the following:

- CARS Train B is in service for containment pressure reduction
- CS Pump A is tagged out with CS-117A, SDCHX A Outlet Stop Check and CS-118A, SDCHX A Outlet Isolation to RWSP are tagged closed
- CFC A, B, and C are in service, CFC D is in standby

A LOCA occurs and Containment Pressure is 18.0 psia and rising. Which of the following would constitute a loss of the containment integrity safety function and requires manual actions to regain integrity? (Assume no other malfunctions occurred)

A. CAR-202B, CARS Exhaust Header B Upstream Isolation fails to close on CIAS.

B. CFC A trips on overload due to fan flooding from ruptured CCW cooling coils.

C. CS-125A, CS Header A Isolation Valve opens on CSAS.

D. CVC-101, Letdown Stop Valve fails to close on its associated ESFAS actuation.

## ANSWER

B

## COMMENTS

B is correct. With the CFC tripped and the coils ruptured it can not be said that at least one isolation valve is closed in each penetration not in use. The inlet and outlet isolations remain open due to SIAS. OP-902-002 has a step to regain containment integrity by performing an OP-902-009 appendix to isolate the penetration. A is incorrect because another valve in the line, CAR-202B isolates the penetration on CIAS. C is incorrect because the manual valves tagged in initial conditions provide the containment isolation function. D is incorrect because CVC-101 is not a containment isolation valve and two other valves, CVC-103 and 109 closed on CIAS to provide the containment isolation function.

| Cognitive Level | Tier/Group | | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| | RO | SRO | | | |
| Comprehension/Analysis | | 1-2 | New | | 43.5 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 87/12
**QUESTION ID**: 4468 **- A**

**DESCRIPTION:** Time requirements to depressurize and vent the RCS with both LTOPs inop
**AUTHOR:** avest **REVISION** 1 **REVISION DATE** 9/18/1997
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** RCS **CATEGORY:** PROCEDURE
TS SRO LEVEL
SDC

| **REFERENCE:** | **REVISION:** | **CHANGE:** | **DATE:** |
|---|---|---|---|
| TS 3.4.8 | | | |

| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | **OBJECTIVE** |
|---|---|---|---|---|
| 2-2-23 | 2.6 | 3.8 | W-3-LP-OPS-RCS00 | 8 |
| | | | W-3-LP-OPS-REQ13 | 6 |
| | | | W-3-LP-OPS-RCS00 | 9 |

## QUESTION

Given the following:

- A maintenance outage requiring an RCS draindown is in progress
- SI-406A, LTOP Relief Valve A was declared out of service 1 hour ago due to setpoint calibration errors which would result in the valve not lifting until 450 psia. The RCS cooldown is stopped until the valve setpoint can be recalibrated.
- An overcooling event occurs that lowers RCS average temperature from 235º to 195ºF over a 5 minute period. RCS cold leg temperatures are 190ºF.

Operator action stops the cooldown but SI-405B failed closed due to a DC bkr failure. How much time remains to have the RCS depressurized and vented?

A. 8 Hrs

B. 24 Hrs

C. 32 Hrs

D. 175 Hrs

## ANSWER

A

## COMMENTS

Provide TS 3.4.8.3 to the examinees.

A is correct because both LTOPs are inoperable and the plant has entered Mode 5 as a result of the cooldown. B is incorrect because this is the time to restore one inoperable valve to operable status. C is incorrect because it is the time for having the plant depressurized with one valve inoperable in mode 5. D may be picked if the candidate picks action a of 3.4.8.3.

| **Cognitive Level** | **Tier/Group** | | **Question Source** | **Question History** | **10CFR Part 55 Content** |
|---|---|---|---|---|---|
| Comprehension/Analysis | **RO** | **SRO** | Modified | | 43.2 |
| | | 1-2 | | | |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 88/13
**QUESTION ID**: 5803 **- A**

**DESCRIPTION:** Affects of a reference leg leak on VCT level xmtr
**AUTHOR:** avest **REVISION** 1 **REVISION DATE** 8/25/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** CVC **CATEGORY:** SRO LEVEL SYSTEM

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| OP-901-113 | | | |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 3.1-004-A2.22 | 3.2 | 3.1 | W-3-LP-OPS-CVC00 | 3 |

## QUESTION

Wet reference leg level transmitter CVC-ILT-0227 equalizing valve is leaking by its seat and the reference and variable legs have equalized. Determine the effect on the operation of the CVC system and the correct procedure to implement?

A. Auto Makeup to the VCT would stop if in service. Implement OP-901-112, Letdown or Charging Malfunction.

B. The VCT inlet valve diverts to the Holdup Tanks if the C/S is in the AUTO position. Implement OP-901-113, VCT Makeup Malfunction.

C. Charging pump suction automatically realigns to the Refueling Water Storage Pool. Implement OP-901-113, VCT Makeup Malfunction.

D. Annunciators actuate for VCT Level Lo and VCT Level Lo-Lo on Panel CP-4. Implement OP-901-112, Letdown or Charging Malfunction.

## ANSWER

B

## COMMENTS

B is correct. The malfunction given will cause the VCT level transmitter to fail high. 0227 will cause the repositioning of the divert valve. A is incorrect because the wrong procedure is listed and transmitter 0226 controls the makeup function. C is incorrect because the action listed occurs on low level. D is incorrect because 0226 brings in the low level alarm, the alarms would come in on lowering level, and the wrong procedure is listed.

| Cognitive Level | Tier/Group RO | Tier/Group SRO | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Comprehension/Analysis | | 2-1 | Modified | W3 2000 SRO | 43.5 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 89/14
**QUESTION ID**: 6131 **- A**
**DESCRIPTION:** Inadvertent SIAS Actuation
**AUTHOR:** avest **REVISION** 0 **REVISION DATE** 9/21/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** PPO **CATEGORY:** PROCEDURE
SRO LEVEL

| REFERENCE: | REVISION: | CHANGE: | DATE: | | |
|---|---|---|---|---|---|
| OP-901-504 | 02 | 01 | 6/3/2002 | | |
| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | | **OBJECTIVE** |
| 3.2-006-A2.13 | 3.9 | 4.2 | WLP-OPS-PPO50 | | 3 |

**QUESTION**

Given the following initial conditions:

- The plant is in MODE 5 with both SDC trains in service.
- PZR level is 50% Cold Cal with a bubble in the pressurizer.
- RCS Pressure is 370 psia.
- RCP 1A is running.
- Letdown and charging are currently in service.

While performing PPS surveillances, a SIAS signal is generated and all auto actions occur. Which procedure should you enter and what action needs to be performed expeditiously?

A. OP-901-131, Shutdown Cooling Malfunction, secure both LPSI pumps

B. OP-901-504, Inadvertent ESFAS Actuation, secure both HPSI pumps

C. OP-902-000, Standard Post Trip Actions; secure all charging pumps

D. OP-902-008, Functional Recovery, secure RCP 1A.

**ANSWER**

B

**COMMENTS**

B is correct. The HPSI pumps could cause RCS pressure to rise and lift the LTOP relief valves, this is covered under OP-901-504. A is incorrect. The only effect of the SIAS signal on Shutdown Cooling would be opening CC-963B, SDCHX B CCW isolation which may already be open. C is incorrect. OP-902-000, would only be entered under certain conditions which would indicate that the SIAS was not inadvertent such as dropping PZR pressure and level the correct procedure addresses the charging pump but states to operate the charging pumps as necessary to maintain PZR level. The Functional Recovery procedure would only be implemented in Modes 1-4 which makes D incorrect.

| Cognitive Level | Tier/Group | | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| | RO | SRO | | | |
| Comprehension/Analysis | | 2-1 | New | | 43.5 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 90/15
**QUESTION ID**: 6132 **- A**

**DESCRIPTION:** Ability and to explain and apply all system limits for PPS
**AUTHOR:** avest **REVISION** 0 **REVISION DATE** 9/22/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** PPS **CATEGORY:** PROCEDURE
TS SRO LEVEL

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| OP-903-107 | 14 | 08 | 8/5/2004 |
| TS 3.3.1 | | | |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 2-1-32 | 3.4 | 3.8 | WLP-OPS-PPS00 | 10 |
| | | | WLP-OPS-PPS00 | 8 |

## QUESTION

Given the following:

- The plant operated for 120 days at 100% power
- An automatic reactor trip occurred on SG 1 level lo due to a FWCS valve failure
- The reactor has been shutdown for 5 hours
- No PPS surveillances have been performed since the trip
- It is desired to close the reactor trip breakers to support maintenance testing

Which of the following sections of OP-903-107, PPS Channel Functional Test must be performed for all four channels of PPS to allow reclosing the reactor trip breakers with the CEA disconnects closed and the CEA MG sets operating?

A. DNBR Low

B. High Linear Power

C. High Logarithmic Power

D. Low Steam Generator 1 Level

## ANSWER

C

## COMMENTS

C is correct. The limitation is required both by TS and OP-903-107. The OP-903-107 requirement is due to being unable to fully test the log channel at power. There are no special requirements to test A, B, or D because these functions are fully testable at power and are only applicable in Modes 1 and 2.

| Cognitive Level | Tier/Group RO | Tier/Group SRO | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Comprehension/Analysis | | 2-1 | New | | 43.2 |

# Waterford 3 Exam Bank Examination Question

**Examination Question Number** 91/16

**QUESTION ID**: 6133 **- A**

**DESCRIPTION:** Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation

**AUTHOR:** avest **REVISION** 0 **REVISION DATE** 9/22/2004

**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1

**PLANT SYSTEM:** ED **CATEGORY:** PROCEDURE
SRO LEVEL

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| TS 3.8.1 | | | |
| OP-903-066 | 07 | 03 | 10/16/2003 |
| TS 3.8.3 | | | |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 2-1-7 | 3.7 | 4.4 | WLP-OPS-ED00 | 3 |

## QUESTION

The plant is in Mode 3. Emergency Diesel Generator B tripped on overspeed during a surveillance run. No other equipment is out of service. OP-903-066, Electrical Breaker Alignment Check was performed by an NPO and the following conditions were noted:

| | | |
|---|---|---|
| • Grid Line Voltage | A – 236 KV | B – 230 KV |
| • SUT Disconnect Status | A - Closed | B - Closed |
| • SUT Feeder Bkr to 2 Bus Control Power Status | A – On | B – On |
| • 2 Bus to 3 Bus Tie Bkr Status | A – Closed | B – Closed |
| • 3 Bus to 2 Bus Tie Bkr Status | A – Closed | B – Closed |
| • 31 Bus Fdr Bkr Status | A- Closed | B - Closed |
| • 2 Bus Volts | A – 4200 V | B – 4030 V |
| • 3 Bus Volts | A- 4150 V | B – 3990 V |
| • 31 Bus Volts | A – 475 V | B – 430 V |
| • Switchyard OCB Status | 7176 – Closed | 7186 - Closed |
| • Switchyard OCB Status | 7172 – Open | 7182 - Closed |

Which of the following action statements need to be entered?

A. 3.8.1.1.a & d

B. 3.8.1.1.b & d

C. 3.8.1.1.c & d

D. 3.0.3

## ANSWER

C

## COMMENTS

Provide Att. 10.1 and 10.2 of OP-903-066 and TS 3.8.1.1 to examinees.

C is correct. The B diesel is OOS and the B AC train does not meet the acceptance criteria of OP-903-066. D is incorrect because plant conditions are such that the LCO actions of 3.8.1.1 can be complied with. A and B are incorrect because they do not fully cover the equipment that is out of service.

| Cognitive Level | Tier/Group RO | Tier/Group SRO | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Comprehension/Analysis | | 2-1 | New | | 43.5 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 92/17
**QUESTION ID**: 6095 **- A**

**DESCRIPTION:** Ability to apply Technicall Specifications for a system.
**AUTHOR:** avest **REVISION** 3 **REVISION DATE** 9/24/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** RCS **CATEGORY:** ADMIN
PROCEDURE
SRO LEVEL

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| TS 3.4.10 | | | |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 2-1-12 | 2.9 | 4.0 | WLP-OPS-RCS00 | 9 |

## QUESTION

Given the following:

- The plant is in Mode 1
- RC-3182 is closed to isolate inoperable PZR Vent valve RC-3184
- Annunciator, 'Quench Tank Pressure Hi' alarms
- Quench Tank pressure is 14 psig and rising slowly.
- RCS Vent Header Pressure indicator on CP-8 is reading 500 psia
- All RCS Vent valves indicate close
- A clamp-on LEFM, indicates flow passing through RC-3183, Pzr Vent to Quench Tank Solenoid Stop, and RC-1017, Rx/Pzr Vent to Quench Tank Isolation.

Based on this information, the crew should: (Take each action separately.)

A. Isolate RC-3181.

B. Isolate RC-1019.

C. Ensure power removed from RC-3183 and RC-1017 and isolate RC-1019.

D. Ensure power removed from RC-3183 and RC-1017 and isolate RC-3181.

## ANSWER

D

## COMMENTS

Provide copy of plant drawing G-172 (or Figure 31 from SD-RCS) and TS 3.4.10.

Question was modified from OPS Exam Bank Question 6930A. D is correct. TS 3.4.10 required that power be removed from the inoperable vent valve and block valve and that the inoperable path is isolated. B is incorrect because it does not include all required actions. B is incorrect because it does not include all required actions and isolation of the listed valve isolates all vent paths. C is incorrect because it does not require power removal from the vent valve and the wrong isolation valve is listed.

| Cognitive Level | Tier/Group RO | Tier/Group SRO | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Comprehension/Analysis | | 2-2 | Modified | | 43.2 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 93/18
**QUESTION ID**: 5924 **- B**

**DESCRIPTION:** Recognition of entry conditions for offnormals
**AUTHOR:** avest **REVISION** 0 **REVISION DATE**
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** GEN **CATEGORY:** PROCEDURE
PPO SRO LEVEL

| REFERENCE: | REVISION: | CHANGE: | DATE: | | |
|---|---|---|---|---|---|
| OP-901-101 | 04 | 03 | 1/20/2004 | | |
| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | | **OBJECTIVE** |
| 2-4-4 | 4 | 4.3 | W-3-LP-OPS-PPO10 | | 1 |

## QUESTION

Given the following conditions:

- The plant is at 100% power
- Subgroups 5 and 11 are selected for both Reactor Power Cutback events
- All systems are aligned normally
- A spurious 86G1 actuation trips the Main Generator and Turbine
- The Turbine building watch reports a broken oil line to the Generator Bearing closest to LP Turbine 3
- The PNPO notes the following CEA rod bottom and lower electrical limit lights illuminated: 44, 45, 46, 47, 21, 22, and 23

Which of the following procedures need to be implemented for this event?

A. OP-901-101, Reactor Power Cutback and OP-901-210, Turbine Trip

B. OP-901-101, Reactor Power Cutback and OP-901-211, Generator Malfunction

C. OP-902-000, Standard Post Trip Actions and OP-901-210, Turbine Trip

D. OP-902-000, Standard Post Trip Actions and OP-901-211, Generator Malfunction

## ANSWER

C

## COMMENTS

Modified from 5924A. C is correct. An improper rod configuration is present for the RPC event and a loss of lube oil event is occurring which is covered in OP-901210. A and B are incorrect because the rod configuration requires a manual reactor trip. D is incorrect because OP-901-211 does not cover the loss of lube oil event though it is a generator bearing.

| Cognitive Level | Tier/Group RO | Tier/Group SRO | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Comprehension/Analysis | | 2-2 | Modified | W3 2002 SRO | 43.5 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 94/19
**QUESTION ID**: 6121 **- A**

**DESCRIPTION:** Ability to determine Mode of Operation
**AUTHOR:** avest **REVISION** 0 **REVISION DATE** 9/13/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** PPN **CATEGORY:** PROCEDURE
TS SRO LEVEL

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| OP-010-003 | 01 | 10 | 8/12/2004 |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 2-1-22 | 2.8 | 3.3 | WLP-OPS-PPN01 | 1 |

**QUESTION**

Given the following conditions:

- An ECC has been calculated for Group P at 75"
- RCS boron concentration is at ECC boron concentration
- A reactor startup is in progress

MODE 2 will be entered when commencing withdrawal of:

A. Shutdown Group A

B. Shutdown Group B

C. Reg Group 1

D. Group P

**ANSWER**

C

**COMMENTS**

Per OP-010-003 C is the correct answer. ECC is calculated for a boron concentration that will not allow criticality below Reg Group 5 at 60 inches. RCS boron concentration is then adjusted to this value. The reactivity associated with Reg Groups fully inserted and Reg Group 5 at 60" is between 2.5 and 3.5 % delta k/k. Therefore Keff can not be > .99 with just the Shutdown Banks out. This makes A and incorrect. D is incorrect because .99 Keff could be exceeded prior to starting to withdraw Group P. Mode 2 is conservatively called when starting to withdraw Reg Group 1.

| Cognitive Level | Tier/Group RO | Tier/Group SRO | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Fundamental/Memory | | 3 | New | | 43.2 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 95/20
**QUESTION ID**: 6129 **- A**

**DESCRIPTION:** Knowledge of Shift Staffing Requirements
**AUTHOR:** avest **REVISION** 0 **REVISION DATE** 9/20/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** PPA **CATEGORY:** PROCEDURE
SRO LEVEL

| REFERENCE: | REVISION: | CHANGE: | DATE: | |
|---|---|---|---|---|
| OP-100-001 | 19 | 03 | 8/29/2004 | |
| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | **OBJECTIVE** |
| 2-1-4 | 2.3 | 3.4 | WLP-OPS-PPA00 | 3 |

## QUESTION

Refer to Control Room envelope figures 1 through 4. The plant is in Mode 3. Which figure shows a Control Room staff configuration in violation of OP-100-001, Operations Standards and Management Expectations? (Assume that each watchstander is qualified no higher than the minimum requirements to stand the position)

A. Fig 1

B. Fig 2

C. Fig 3

D. Fig 4

## ANSWER

D

## COMMENTS

Provide Control Room Envelope figures with watchstanders filled in on each figure. Ensure Figures 1 through 3 have at least one licensed operator in the surveillance area and an RO and an SRO in the Control Room. Ensure Figure 4 shows both SRO licensees (CRS, SM) outside of the Control Room but inside the Control Room Envelope with at least one RO in the surveillance area.

D is correct because both SRO licensees are outside of the Control Room in violation of procedure. The other choices are incorrect because they have the minum shift complement in the proper places.

| Cognitive Level | Tier/Group | | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| | RO | SRO | | | |
| Fundamental/Memory | | 3 | New | | 43.2 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 96/21
**QUESTION ID**: 5911 **- B**

**DESCRIPTION:** Refueling Loss of Water Level Guidelines
**AUTHOR:** avest **REVISION** 1 **REVISION DATE** 9/19/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** RF **CATEGORY:** PROCEDURE
SRO LEVEL

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| RF-005-001 | 09 | 00 | 11/6/2003 |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 2-2-31 | 2.2 | 2.9* | W-3-LP-OPS-REQ04 | 7 |

## QUESTION

During core onload, the Refueling Machine is positioned over a spent fuel assembly in an upender basket. When the fuel assembly is grappled in the upender, a S/G nozzle dam fails. The Fuel Handling Supervisor notes that reactor cavity level is lowering at approximately one foot per minute. In addition to closing the transfer tube gate valve, the Fuel Handling Supervisor should order the crew to:

A. Ungrapple the fuel assembly, move the refueling machine out of the upender zone, and lower the upender to the horizontal position.

B. Raise the fuel hoist to the up limit, move the Refueling Machine to a temporary storage rack, and lower the assembly into the temporary storage rack.

C. Raise the the fuel hoist to the up limit, move the Refueling Machine to the designated core location, and lower the assembly into the core.

D. Raise the fuel hoist to the up limit, move the Refueling Machine to the deep end of the refueling cavity, and lower the assembly to the hoist down stop.

## ANSWER

A

## COMMENTS

Correct the K/A importance values in the Word Document

A is correct. Att. 9.1 gives the FHS the latitude to deviate from the stated preference in the attachment. The attachment states the final expected water levels if left uncorrected. Based on the rate that water level is falling it would be more prudent to leave the assembly in the deep end because it will never have the opportunity to become uncovered. Lowering the upender would maximize the water level over the fuel assembly. Attempting to place the assembly in the core could cause the assembly to become uncovered based on the time required to raise the assembly into the fuel hoist in slow speed, move the Refueling Machine to the core location, and then lower the fuel assembly in slow speed into the core. Additionally if the assembly is bowed there may be additional delays inserting the assembly into the core location.

| Cognitive Level | Tier/Group RO | SRO | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Comprehension/Analysis | | 3 | New | | 43.6, 43.7 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 97/22
**QUESTION ID**: 6130 **- A**

**DESCRIPTION:** Knowledge of Maintenance Work Order requirements
**AUTHOR:** avest **REVISION** 1 **REVISION DATE** 9/21/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** PPA **CATEGORY:** PROCEDURE
SRO LEVEL

| REFERENCE: | REVISION: | CHANGE: | DATE: |
|---|---|---|---|
| WM-100 | 01 | | |

| NRC KA NUMBER: | RO | SRO | TRAINING MATERIAL: | OBJECTIVE |
|---|---|---|---|---|
| 2-2-19 | 2.1 | 3.1 | WLP-OPS-PPA00 | 3 |

## QUESTION

Which of the following would require a Priority 1 Work Request be initiated in Mode 1? (assume associated A and B pumps are operable)

A. Charging Pump AB trips on overload during In-service testing.

B. Essential Chillwater Pump AB vibration in the alert range during In-service Testing.

C. CCW Pump AB does not generate acceptable differential pressure during In-Service Testing.

D. EFW Pump AB trips on overspeed during In-service testing and cannot be reset.

## ANSWER

D

## COMMENTS

Provide Attachment 9.1 of EN-WM-100 to examinees

.

D is correct. This failure puts the plant in a 72 hour shutdown action statement. The other equipment would be inoperable but with the other two pumps operable no system trains are inoperable or can be recovered quickly by realignment of normal train components. In the case of the Chillwater Pump it is not inoperable for the conditions given.

| Cognitive Level | Tier/Group RO | Tier/Group SRO | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| Comprehension/Analysis | | 3 | New | | 43.5 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 98/23
**QUESTION ID**: 5892 **- B**

**DESCRIPTION:** Knowledge of 10 CFR 20 and related facility radiation control requirements
**AUTHOR:** avest **REVISION** 0 **REVISION DATE** 9/20/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** EP **CATEGORY:** PROCEDURE
RAD SRO LEVEL

| REFERENCE: | REVISION: | CHANGE: | DATE: | | |
|---|---|---|---|---|---|
| EP-002-030 | 09 | 00 | 4/8/2003 | | |
| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | **OBJECTIVE** | |
| 2-3-1 | 2.6 | 3.0 | WLP-OPS-EP02 | 8 | |

## QUESTION

An accident with significant core damage has occurred. An entry into the -35' Wing Areas is needed to retrieve an injured person. The dose for this task has been estimated at 19 Rem TEDE. Which of the following is correct?

A. The entry can **NOT** be allowed because it exceeds the federal exposure limits of 10 CFR 20.

B. The entry can be allowed under the Planned Special Exposure limits per RP-207, Planned Special Exposures.

C. The entry can **NOT** be allowed since the estimated exposure exceeds the associated emergency exposure limit.

D. The entry can be allowed since the expected exposure is less than the associated emergency exposure limit.

## ANSWER

D

## COMMENTS

D is correct. The emergency exposure limit is 25 Rem for lifesaving activities. A is incorrect because other exposure limits can be invoked in emergencies or planned special exposures. B is incorrect because the TEDE dose limit of % Rem is exceeded. C is incorrect because the expected exposure is less than 25 Rem and the procedure states that this limit can be exceeded under certain restrictions.

| Cognitive Level | Tier/Group | | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| | RO | SRO | | | |
| Fundamental/Memory | | 3 | New | | 43.4 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 99/24
**QUESTION ID**: 6116 **- A**
**DESCRIPTION:** Ability to take actions called for in the facility emergency plan, including supporting or acting as emergency coordinator
**AUTHOR:** avest **REVISION** 1 **REVISION DATE** 9/12/2004
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** EP **CATEGORY:** PROCEDURE

| REFERENCE: | REVISION: | CHANGE: | DATE: | | |
|---|---|---|---|---|---|
| EP-001-001 | 20 | 01 | 7/24/2002 | | |
| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | | **OBJECTIVE** |
| 2-4-38 | 2.2 | 4.0 | WLP-OPS-EP02 | | 17 |

## QUESTION

The plant is at 24% power and Main Feedwater Isolation Valve 1 goes closed. The crew manually trips the reactor at 23% NR in SG 1. During SPTAs the A3 to A2 bus breaker opens and EDG A trips on overspeed. Which of the following is correct concerning E-Plan classification? (Assume no equipment OOS initially)

A. No classification criteria are met

B. Unusual Event should be declared

C. Alert should be declared

D. Site Area Emergency should be declared

## ANSWER

C

## COMMENTS

Provide EP-001-001 EALs to examinee.

C is correct. C/A/IV RPS Automatic trip failed. The reactor did not trip at 27.4% NR as required. A is incorrect because ATWS criteria are met. B is incorrect because the EDG failure does not meet the criteria for this classification and the ATWS requires an Alert. D is incorrect because the manual reactor trip function worked.

| Cognitive Level | Tier/Group | | Question Source | Question History | 10CFR Part 55 Content |
|---|---|---|---|---|---|
| | RO | SRO | | | |
| Comprehension/Analysis | | 3 | Bank | | 43.5 |

# Waterford 3 Examination Question
# Examination Bank

**Examination Question Number** 100/25
**QUESTION ID**: 5791 **- A**

**DESCRIPTION:** Safety Function Parameters For Station Blackout
**AUTHOR:** avest **REVISION** 0 **REVISION DATE** 7/6/2000
**TYPE:** Multiple Choice **TIME:** 5 **POINTS:** 1
**PLANT SYSTEM:** PPE **CATEGORY:** PROCEDURE
SRO LEVEL

| **REFERENCE:** | **REVISION:** | **CHANGE:** | **DATE:** | | |
|---|---|---|---|---|---|
| OP-902-005 | 11 | 00 | 4/12/2001 | | |
| **NRC KA NUMBER:** | **RO** | **SRO** | **TRAINING MATERIAL:** | | **OBJECTIVE** |
| 2-4-21 | 3.7 | 4.3 | W-3-LP-OPS-PPE05 | | 4 |

## QUESTION

Which of the following conditions would indicate a need to exit the Station Blackout procedure and perform diagnostics?

A. AB-DC Voltage is 0 Volts

B. $T_C$ is 550°F and stable

C. Cntnmt Temp is 170°F, rising 5 ºF/min

D. Pzr level is 35% and lowering slowly

## ANSWER

C

## COMMENTS

C is correct. Even with a station blackout, containment temperature should not be rapidly rising. The criteria of the Station Blackout procedure is $\leq$ 150ºF. A is incorrect because the AB DC bus is not part of the safety functions only the A Train or B train. Tc as given in B would indicate that the ADVs are controlling so it is incorrect. Pzr level as given is within the required band of 7-60% with a station blackout Pzr level would be stable or slowly lowering due to allowed RCS leakage so D is incorrect.

| **Cognitive Level** | **Tier/Group** | | **Question Source** | **Question History** | **10CFR Part 55 Content** |
|---|---|---|---|---|---|
| | **RO** | **SRO** | | | |
| Comprehension/Analysis | | 3 | Bank | W3 2000 SRO | 43.5 |