

**NRC Written Exam Item Analysis for Exam
Administered at Waterford 3 on March 29, 2011**

On March 29, 2011 the site administered an NRC approved examination to 11 applicants. All applicants took the 75 question RO section. Additionally, 6 applicants took the SRO only section of the exam. Independently verified site grading indicates that all applicants passed all required written examination sections.

No questions on the RO section of the examination were missed by 50% or greater of all applicants. Two questions on the SRO ONLY section of the examination were missed by 50% or greater of the SRO applicants. Analysis of the questions follows on pages 2 and 3.

It is the position of Waterford staff that both questions are valid and technically correct, with only one correct answer. References to support this analysis are provided.

SRO Question 10

Given:

- The plant is in MODE 4
- A large leak on Train A Component Cooling Water (CCW) Supply Header resulted total isolation of the AB CCW Header
- Prior to isolation, all Component Cooling Water components and support systems were OPERABLE
- The ATC Operator notes that CCW AB Radiation Monitor is flashing light blue on CP-6 Radiation Monitoring CRT after the isolation

CCW AB radiation monitor should be considered ____ (1) _____. The radiation monitor is ____ (2) _____ for the given MODE.

- | ____ (1) _____ | ____ (2) _____ |
|----------------|---|
| A. INOPERABLE | <u>not</u> required to be OPERABLE |
| B. INOPERABLE | required to be OPERABLE |
| C. OPERABLE | <u>not</u> required to be OPERABLE |
| D. OPERABLE | required to be OPERABLE |

This question required the applicants to determine the operability status of the CCW AB Radiation Monitor based on given conditions and to determine if the Radiation Monitor is required to operable for the MODE given in the stem. All candidates were able to determine that the Radiation Monitor was required to be operable for the conditions given in the stem. However, 3 of 6 candidates incorrectly determined the operability status. Conditions were given in the stem that would result in a loss of flow through the radiation monitor. The stem also stated that prior to the event the radiation monitor was operable.

The bases for the technical specification states in part:

When flow in the monitored system is terminated, which would occur if the system was being taken out of service for maintenance, the monitor will go into an alarmed condition due to loss of sample flow. If this alarmed condition is due solely to the termination of the flow in the monitored system, and the process monitors were OPERABLE prior to flow termination, then these radiation monitors should be considered OPERABLE. Therefore, the performance of ACTION 28 is not appropriate or required for this condition. During this condition, the monitors are effectively in a standby state and are capable of automatically performing their intended safety function once flow is reestablished in the monitored system.

SRO Question 20

Given:

- A full core offload is in progress.
- The Normal Spent Fuel Pool Heat Exchanger is in service.
- The Backup Spent Fuel Pool Heat Exchanger is secured and available.

The RAB Watch has reported a leak on the Normal Spent Fuel Pool Heat Exchanger that requires isolating CCW to the Heat Exchanger.

Based on this report,

- A. The full core off load may continue after placing the Backup SFPHX provided Spent Fuel Pool temperature is maintained $< 140^{\circ}\text{F}$.
- B. The full core off load may continue after placing the Backup SFPHX provided Spent Fuel Pool temperature is maintained $< 155^{\circ}\text{F}$.
- C. The full core off load must be secured. Both the Normal and Backup Heat Exchangers are required to be available to perform a full core off load.
- D. The full core off load must be secured until a heat load calculation is performed to ensure the heat load does not exceed $15.3 \times 10^6 \text{ BTU/HR}$.

This question required the applicants to determine whether core offload could be continued based on the sudden unavailability of the Normal Spent Fuel Pool Heat Exchanger. OP-002-006 Precaution and Limitation 3.2.10 requires that both the Normal and Backup Spent Fuel Pool Heat Exchangers be available for a full core offload. Four candidates selected a distractor that implied the offload could be recommenced after a heat load calculation verifies heat load is within the capacity of the backup heat exchanger. This calculation only applies for partial core offloads per OP-002-006 Precaution and Limitation 3.2.7. The remaining distractors are also incorrect in that they allow the core offload to continue, contrary to procedure OP-002-006.