

Post-Exam Comment Resolution – Ginna Written Retake Examination

Written Exam Question #2:

Given the following plant conditions:

- The unit is at 100% power
- A small RCS leak develops inside Containment
- The Operators take the necessary actions to stabilize Pressurizer level by raising charging flow
- Subsequent actions are then performed to determine the leak source

After Letdown is isolated, the following indications are observed:

- FI-134, Letdown Line Flow, indicates zero gpm
- PI-944, CNMT Narrow RNG Pressure, is 0.5 psig and lowering
- RCS pressure is 2235 psig and rising
- Pressurizer level is 65% and rising
- Charging flow is 40 gpm
- Containment radiation levels are lowering

Which ONE of the following describes:

(1) the reason for isolating Letdown,

AND

(2) a signal that would prevent the capability to re-open AOV-427, Isolation AOV to Regenerative HX, from the MCB?

- A. (1) to identify if the leak is downstream of the Letdown Isolation Valve
(2) manual Safety Injection
- B. (1) to identify if the leak is downstream of the Letdown Isolation Valve
(2) Containment Isolation
- C. (1) to obtain a more accurate leak rate determination
(2) manual Safety Injection
- D. (1) to obtain a more accurate leak rate determination
(2) Containment Isolation

Answer: B

Facility/Applicant Recommendation:

There is no correct answer. Remove question from the exam. A containment isolation (CI) from the control board gives a T-signal to close 427, which then reopens on the loss of air to containment caused by the same signal. Initiating a CI from the control board would have a

result of 426 being open. CI does not prevent 427 from being re-opened, as its failure position on a loss of air is “open”.

Pass-Fail Stats:

Two out of three SRO applicants missed this question. No applicant asked for any clarification of this question during exam administration.

NRC Comment Resolution:

Question is satisfactory as written; no change is needed.

While a loss of air may lead to repositioning of the valves, the capability to reopen 427 from the main control board is lost after a containment isolation signal. Distractor 'B' remains as the only correct answer; therefore, no change is needed.

Written Exam Question #8:

Given the following plant conditions:

- A LOCA has occurred
- Concurrently, one S/G has experienced a tube rupture
- Multiple electrical grid issues are also occurring
- The core is being cooled by reflux cooling

Which ONE of the following correctly completes the statements below?

- 1) The Operator must take action to ensure (1) in order to promote reflux cooling.
 - 2) Reflux cooling will occur in the ruptured S/G as long as the ruptured S/G (2) remains less than that of the RCS.
- A. (1) the intact S/G is fully depressurized
(2) pressure
- B. (1) water level is maintained in the intact S/G
(2) pressure
- C. (1) the intact S/G is fully depressurized
(2) temperature
- D. (1) water level is maintained in the intact S/G
(2) temperature

Answer: D

Facility/Applicant Recommendation:

Accept distractors 'B' and 'D' as correct answers.

Pass-Fail Stats:

All three SRO applicants missed this question. All applicants chose distractor 'B'. No applicant asked for any clarification of this question during exam administration.

NRC Comment Resolution:

Question 8 shall be deleted from the exam. All distractors are correct.

Since there is a LOCA and the RCS has lost inventory, it is necessary to keep the secondary system adequately full of water to promote reflux cooling (B1 and D1 correct). If the ruptured steam generator pressure was greater than RCS pressure, secondary side inventory would flow into the RCS through the ruptured steam generator tubes, and the cooling mechanism would no longer be reflux cooling. Therefore, ruptured steam generator pressure must be maintained less than RCS pressure for reflux cooling to occur (A2 and B2 correct).

A fully depressurized intact S/G would promote reflux cooling, and this full depressurization (to atmospheric pressure) is done in Step 39 of ECA-1.1 to achieve RHR system operating conditions and to reduce break flow (A1 and C1 correct). This is completed before Step 42 where reflux cooling is checked in order to maintain RCS heat removal. Additionally, reflux cooling will occur in the ruptured steam generator as long as the ruptured steam generator temperature remains less than that of the RCS (C2 and D2 correct). Since all 4 distractors are considered correct, the question shall be deleted.

Written Exam Question #37:

Given the following plant conditions:

- Plant is operating at 100% power
- PRZR parameters are initially at their normal program values
- A leak has developed on the weld at the point the reference leg taps off the Pressurizer for the controlling Pressurizer level detector
- PRZR level is changing approximately 1%/min
- PRZR pressure is changing approximately 20 psig/min

Which ONE of the following correctly describes the FIRST effect on the Pressurizer Control System? (Assume no Operator actions taken)

- A. Backup Heaters energize
- B. Spray Valves modulate OPEN
- C. Proportional Heaters turn OFF
- D. Proportional Heaters go to full voltage

Answer: D

Facility/Applicant Recommendation:

Accept distractors 'A' and 'D' as correct answers. Selected backup heaters are energized because the question stem discusses change in pressurizer level, but controller 428 is failing high and in accordance with P-10, 5.3.3.3.c.5 Backup Heaters ON if level fails greater than 5% above programmed.

Pass-Fail Stats:

One out of three SRO applicants missed this question. No applicant asked for any clarification of this question during exam administration.

NRC Comment Resolution:

Question is satisfactory as written; no change is needed.

Since this describes a leak and not a complete failure, the leak is not causing controller 428 to fail high instantaneously, but rather the level in the 428 control instrument is slowly rising as indicated by the fourth bullet in the stem. This would not cause the backup heaters to energize as the first effect on the pressurizer control system. If the leak were to cause an instantaneous high failure on this instrument, then backup heaters would energize (heat the in-surge of colder RCS), and distractor 'A' would be correct. Since level in 428 is not failing high immediately, distractor 'D' remains as the only correct answer.

Written Exam Question #61:

Which ONE of the following describes (1) an automatic feature; **AND** (2) a passive feature that prevents uncovering of the fuel in the Spent Fuel Pool (SFP) if a leak were to develop on the in-service SFP Cooling Pump?

- A. (1) Automatic trip of the 'A' SFP cooling pump on low water level, AND
(2) A siphon break in the SFP cooling water return line approximately at the normal spent fuel pool level
- B. (1) Automatic trip of the 'A' SFP cooling pump on low water level, AND
(2) A siphon break in the SFP cooling water return line approximately 5'4" above the top of the fuel racks
- C. (1) Automatic trip of the 'B' SFP cooling pump on low water level, AND
(2) A siphon break in the SFP cooling water return line approximately at the normal spent fuel pool level
- D. (1) Automatic trip of the 'B' SFP cooling pump on low water level, AND
(2) A siphon break in the SFP cooling water return line approximately 5'4" above the top of the fuel racks

Answer: C

Facility/Applicant Recommendation:

There is no correct answer. Remove question from the exam. The siphon break is not at approximately normal spent fuel pool (SFP) level. In accordance with UFSAR, 9.1.3.4.2, the siphon break hole is "located approximately 18 in. below the normal SFP water level." The answer for 'C' and UFSAR definition do not match.

Pass-Fail Stats:

Two out of three SRO applicants missed this question. No applicant asked for any clarification of this question during exam administration.

NRC Comment Resolution:

Question is satisfactory as written; no change is needed.

The plant has a siphon break (1/4" hole) located approximately at the normal spent fuel pool level. In actual plant configuration, it is on the discharge piping of the spent fuel pump line and is 18 inches below the normal spent fuel pool level. Distractors B2 and D2 are incorrect because they describe the suction piping penetration in relation to the top of the active fuel racks. This line does not have a siphon break. Distractor 'C' remains as the only correct answer.

Written Exam Question #67:

Given the following plant conditions:

- Plant start up is in progress following a Refueling Outage
- Main Turbine is being prepared to synchronize to the electrical grid
- Reactor power is being maintained between 15% and 20%

Which set of the following indications could be used to confirm Reactor power?

1. Feed Flow rate
2. RCS T_{AVG}
3. Steam Dump operation
4. RCS Loop Differential Temperature

- A. 1, 2, 3
- B. 1, 2, 4
- C. 1, 3, 4
- D. 2, 3, 4

Answer: C

Facility/Applicant Recommendation:

All distractors are correct. Remove question from the exam. Steam Dumps are placed in service in pressure control mode at 1005 psig in step 6.7.9 of O-1.2. The difference between T_{avg} and 547F gives an alternate indication of Reactor power. Furthermore, step 6.8.1 of O-1.2 states, "WHILE monitoring diverse indications of Reactor power level (pressure, flows AND temperature), CONTINUE power ascension using control rods AND steam dumps." This specifically identifies temperature as a diverse indication of reactor power. This means that all four indications presented in the question stem are indications that can be used to confirm reactor power.

Pass-Fail Stats:

All three SRO applicants missed this question. No applicant asked for any clarification of this question during exam administration.

NRC Comment Resolution:

RCS T_{avg} can be used as a diverse indication of reactor power. All distractors are correct, so this question shall be deleted.

Written Exam Question #81:

Given the following plant conditions:

- The operating crew has implemented ECA-1.1, Loss of Emergency Coolant Recirculation
- Crew is performing the Step which directs the crew to depressurize intact S/Gs to 260 psig slowly to inject SI Accumulators
- Both RCPs are OFF
- CNMT pressure is 6 psig and stable
- RVLIS level is 59% and stable
- Loop 'A' T_{COLD} is 408°F and slowly lowering
- Loop 'B' T_{COLD} rapidly lowered to 280°F and is currently 330°F and slowly rising
- Both S/G pressures are 300 psig and slowly lowering

(1) What parameter is monitored / maintained during S/G depressurization;

AND

(2) Based on plant conditions, what transition, if any, is required?

NOTE: FR-P.1, Response to Imminent Pressurized Thermal Shock Condition
FR-C.2, Response to Degraded Core Cooling

- A. (1) RVLIS level
(2) transition to FR-C.2
- B. (1) RVLIS level
(2) remain in ECA-1.1
- C. (1) RCS Cold Leg temperature
(2) transition to FR-P.1
- D. (1) RCS Cold Leg temperature
(2) remain in ECA-1.1

Answer: B

Facility/Applicant Recommendation:

Accept distractors 'B' and 'D' as correct answers. ECA-1.1, Step 7 directs the operator to "establish and maintain cooldown rate in cold legs less than 100°F/HR" to cold shutdown conditions, per the header of the step. Therefore, it is maintained and monitored continuously, including during the depressurization.

Pass-Fail Stats:

Two out of three SRO applicants missed this question. Both applicants chose distractor 'D'. No applicant asked for any clarification of this question during exam administration.

NRC Comment Resolution:

Question is satisfactory as written; no change is needed.

The licensee's comment addressed the first part of the question which asked, "What parameter is monitored / maintained during S/G depressurization?" The licensee states that step 7 (Initiate RCS cooldown to cold shutdown) of ECA-1.1, Loss of Emergency Coolant Recirculation, is a continuous action step which requires the operators to ensure that a 100°F/hr cooldown rate is not exceeded and thus it is an acceptable answer. However, with no information in the stem to indicate a cooldown rate of 100°F/hr was exceeded, it can be surmised that step 7 of ECA 1.1 was performed at a rate less than 100°F/hr. Furthermore, it should be noted that this question is referring to a specific action in the procedure. Specifically, it is stated in the second bullet that "Crew is performing the Step which directs the crew to depressurize intact S/Gs to 260 psig slowly to inject SI Accumulators." The wording of the question forces the applicants to consider the necessary actions to accomplish the intended purpose of this step. The purpose is to limit accumulator injection by monitoring and maintaining reactor vessel level to extend core cooling. Although monitoring T_{cold} is a continuous action, this parameter is secondary to the focus of this step in the question. According to the basis for ECA-1.1 step 36, RVLIS is the parameter to monitor and maintain (via S/G depressurization) to extend core cooling by controlling injection from accumulators. The depressurization of the S/Gs will affect the RCS pressure which in turn effects the injection of the accumulators. Thus, RVLIS indication, not T_{cold} , will inform the operators regarding the injection of the accumulators to accomplish the intention of this step. Therefore, distractor 'B' will remain the only correct answer.

Written Exam Question #100:

Which one of the following states a responsibility that the Emergency Director MAY delegate the authority for in accordance with EP-AA-1000, Standardized Radiological Emergency Plan?

- A. Authorize the issuance of Potassium Iodide (KI).
- B. Notification of offsite authorities (state, local, and NRC).
- C. Authorization of emergency exposure controls in excess of 5 Rem TEDE.
- D. Assuming the position of Decision Maker when a transition to Severe Accident Management Guidelines (SAMG) is initiated.

Answer: D

Facility/Applicant Recommendation:

Accept distractor 'B' and 'D' as correct answers. Distractor 'B' is a responsibility delegated to the Communicator. Also, verbiage in stem of question asks about designating authority, versus the procedure EP-AA-1000, where it asks if the responsibility itself can be designated. Communicator does perform notifications.

Pass-Fail Stats:

All three SRO applicants chose distractor 'B'. No applicant asked for any clarification of this question during exam administration.

NRC Resolution:

Question 100 shall be deleted from the exam. No distractors are correct.

The question asks for which responsibility the Emergency Director may delegate the authority to perform. The licensee's comment stated that because a parenthetical phrase ("approval of") was omitted from distractor 'B', the meaning of this distractor changed such that it would be a correct answer. In response, it should be noted that the word "authority" is in the stem of the question and therefore does not change the meaning of distractor 'B'. While the Shift Communicator may perform these notifications routinely, the Emergency Director maintains authority for these notifications when they are performed. Additionally, the licensee's argument implies that when the Shift Communicator carries out notifications, they do so because the Emergency Director has delegated that authority to them. That is not a true statement. The Shift Communicator works within the bounds of the position's responsibilities and is not delegated the authority to communicate with offsite agencies. Therefore, distractor 'B' remains incorrect.

The question asks about the authority that can be delegated by “the Emergency Director.” According to the Ginna Emergency Plan, there are individuals with the titles “shift emergency director”, “station emergency director”, and “corporate emergency director”. The question does not specify which of these emergency directors is intended. It is reasonable to conclude that when it mentions “the Emergency Director” that it is referring to the individual who has command and control based upon the definition of “Emergency Director” in the emergency plan which states in part that, “He has full authority and responsibility for meeting the emergency.” The explanation for distractor ‘D’ (the intended correct choice), was referring to the station emergency director. However, the explanation for why distractor ‘D’ is correct states that when the station emergency director does not have the command and control function (i.e., he is not the emergency director), he can assume the duties and responsibilities of the Decision-Maker when a transition to Severe Accident Management Guidelines is initiated. Therefore, since he cannot be the Decision-Maker while being “the Emergency Director,” he (as the emergency director) cannot delegate the responsibility or authority of the Decision-Maker. In other words, he cannot delegate an authority that he does not have. Therefore, there is no correct answer for this question and it will be deleted from the exam.