

FACILITY POST-EXAMINATION COMMENTS AND NRC RESOLUTIONS

#46 Given the following plant conditions:

- Unit 1 is performing a surveillance test on the TDAFW pump when the following alarm is received on 1-M-3C:
 - AUX FWP TURBINE 1A-S MECHANICAL OVERSEED TRIP (Window A- 4)
- The cause of the alarm is determined to be 1-FIC-46-57 failed to control the pump outlet flow.

Which ONE of the following identifies:

- 1) The setpoint for this alarm

AND

- 2) After the Mechanical Overspeed mechanism is RESET and LATCHED, the action required prior to attempting to restart the TDAFW pump in accordance with 1-SO-3-2, "Auxiliary Feedwater System?"
 - A. (1) 4300 rpm
(2) Hold 1-HS-1-51A-S, Trip/Throttle Valve, closed for 10 seconds to clear the overspeed alarm **only**.
 - B. (1) 4300 rpm
(2) Hold 1-HS-1-51A-S, Trip/Throttle Valve, closed for 10 seconds to clear the overspeed alarm and place speed controller in MANUAL and set controller output at 20%.
 - C. (1) 4900 rpm
(2) Hold 1-HS-1-51A-S, Trip/Throttle Valve, closed for 10 seconds to clear the overspeed alarm **only**.
 - D. (1) 4900 rpm
(2) Hold 1-HS-1-51A-S, Trip/Throttle Valve, closed for 10 seconds to clear the overspeed alarm and place speed controller in MANUAL and set controller output at 20%.

Answer: D.

Candidate Comments:

55-24159 – I read the second half of the question as holding the HS for 10 seconds only clears the alarm **OR** holding the HS for 10 seconds clears the alarm, places the speed control to manual, and sets the output to 20%. I know that the HS does not do all these functions which makes "D" wrong and "C" correct.

55-24157 – I believe that the answer D, part (2), was misleading due to lack of proper punctuation. "Hold 1-HS-51A-S, Trip /Throttle Valve, closed for 10 seconds to clear the overspeed alarm and place speed controller in MANUAL and set controller output at 20%."

As written, to me, means that the one hand switch will perform all of those functions. I knew this was not correct, so I disregarded D as being a correct answer. That led me to choose answer C since I knew that 4900 rpm was correct and D could not be correct.

The statement could have been written better to clarify that the actions were separate actions, not tied to 1-HS-1-51A-S.

Possibly: "Hold 1-HS-1-51A-S, Trip/Throttle Valve, closed for 10 seconds to clear the overspeed alarm; then place the speed controller in MANUAL; then set the controller output at 20%."

55-24162- Answer C: (1) 4900 rpm (2) Hold 1-HS-1-51A-S, Trip/Throttle Valve, closed for 10 seconds to clear the overspeed alarm ONLY."

Answer D: (1) 4900 rpm (2) Hold 1-HS-1-51A-S, Trip/Throttle Valve, closed for 10 seconds to clear the overspeed alarm and place speed controller in Manual and set controller output at 20%.

I chose answer C due to eliminating answer D for the second part. I thought answer D part 2 said that holding 1-HS-1-51A-S for 10 seconds would also place the speed controller in Manual and set the controller output to 20%. I was confident this action would clear the overspeed alarm however I disagreed with the other 2 actions which is why I chose Answer C.

I clearly did not understand what part 2 of answer D was trying to say in that, we would be taking 3 separate actions. Based on the correct answer, this was not clear to me and the wording could be improved to make it clear the steps are 3 separate actions that must be taken.

55-24160 – I read the answer "D" to be saying all of the actions would occur from one manipulation. This led me to pick "C" because that action causes that response. I did not like the word "only" but given the choices of switch with correct action for the manipulation. I felt "C" was the most correct.

55-24167 – I chose not to select (D) based on the verbage of the answer. The answer made it sound like holding 1-HS-1-51A-S for 10 seconds would perform the 3 functions of clearing the alarm AND placing the controller to manual AND setting output to 20%. The answer had too many ANDS that made it sound unlikely.

Facility Response:

Although this question had been reviewed by several operators prior to submittal, SQN concurs with the candidate's concerns and confusion over the wording used in the second part of answers 8 and D. The lack of correct punctuation could cause the readers to conclude that the single action of holding the hand switch for 10 sees would cause multiple actions in the control circuit to occur. Since holding the control switch for 10 seconds ONLY is clearly not correct in that this action alone will not cause the trip/throttle valve to be reset and positioned correctly per the procedure guidance, C is not considered a correct answer. Considering that the confusing wording in D could lead the candidates to disregard this as correct, the site agrees with the candidate's comments and considers that there are really no correct answers provided. Based on this conclusion the site recommends that this question be removed from the exam.

NRC Resolution: Recommendation not accepted. The second part of question 46 is determining if the applicants know what actions are required prior to starting the TD AFW Pump. Answer D is taken from 1-SO-3-2:

[1.1.3] **ENSURE** Terry Turbine overspeed alarm in UCR is
CLEAR [M-3C, A4].

[1.2] **IF** an overspeed trip has occurred due to 1-FIC-46-57
failing to control pump outlet flow automatically, **THEN**

PLACE [1-HC-46-57-S] in **MANUAL** and set controller
output to 20 percent as seen on [1-FI-46-57-S] on M-3
prior to attempting restart of TDAFW pump.

The second part of answer D matches the procedure stated:

“Hold 1-HS-1-51A-S, Trip/Throttle Valve, closed for 10 seconds to clear the overspeed alarm and place speed controller in MANUAL and set controller output at 20%.”

It is the NRC’s opinion that answer D does not suggest that holding 1-HS-1-51A-S closed for 10 seconds will “place the speed controller in MANUAL” and that it is a separate action to be performed by the operator.

The applicant feedback during the post exam review suggests that they had knowledge of what actions were required prior to restarting the TD AFW Pump and yet they selected an answer that only required the action to reset the valve and clear the alarm which would clearly be incorrect.

“Hold 1-HS-1-51A-S, Trip/Throttle Valve, closed for 10 seconds to clear the overspeed alarm **only.**”.

There were no questions on question 46 during the exam therefore, the assumption can be made that there was no confusion as to what the answers were stating.

Therefore, there will be no changes to Question 46.

#72. Given the following plant conditions:

- The site is in a General Emergency with a large break LOCA in progress. Which ONE of the following completes the following statements

The Main Control Room Intake Monitors 0-RM-90-125 & 126 ___(1)___ isolated.

AND

If Main Control Room Intake Emergency Monitors 0-RM-90-205 and/or 206 alarm, they ___(2)___ send an automatic start signal to the MCR Emergency Pressurization fans.

- A. (1) are
(2) will NOT
- B. (1) are NOT
(2) will
- C. (1) are NOT
(2) will NOT
- D. (1) are
(2) will

Answer A.

Candidate Comments:

55-24162 – I chose answer C of part 1 because I thought the stem was asking if the Rad monitors isolated (in the sense of how equipment would be isolated for taking out of service, e.g. inlet and outlet isolation) as opposed to, does the fresh air flow path isolate, which was clearly what the question was trying to determine if we had knowledge on. From the standpoint of does the Rad monitor isolate, I was confident the inlet and outlet valves to 0-RM-90-125 & 126 were manual valves which will not auto close or be closed by procedure while in the EOPs, therefore I concluded the Main Control Room Intake Monitors 0-RM-90-125 & 126 are NOT isolated.

55-24159 – I read the first part of the question "The Main Control Room Intake Monitors 0-RM-90-125 & 126 ___isolated." Literally asking whether or not the monitors are isolated like RM-90-106/112 isolate on a Containment Vent Isolation. I know that the monitors do not isolate automatically which makes me believe that "C" is the correct answer.

55-24168- On this question, I interpreted the word "isolated" in reference to the MCR radiation monitors (90-125/126) as meaning the monitors themselves vice whether or not a CRI had occurred. With that interpretation, I chose the option available stating that the MCR radiation monitors had not isolated.

55-24166-When reading this question I could not decide if by asking if the RM was isolated or not meant it was isolated in the sense that the inlet and outlet were both closed or if it meant the RM was isolated from a flow path that it normally monitored. I wrote a question to attempt to clarify it and did not receive amplifying information. Based on all previous instruction concerning RMs being isolated or not I referred to our discussions about RM-106 or 112 being isolated is which both the inlet and outlet are both shut. Since this is not the case for RM-125/126, only the downstream flow path is isolated, and the upstream air inlet valves are still open during a CRI, I determined the RM was not isolated since both its inlet and outlet are still open, exposed to atmospheric pressure and environment. I think the term "isolated" was confusing and not readily clear as to its desired meaning

Facility Response:

After review of the question, the comments provided by students, and considering the technical clarity question asked during the exam administration, the site agrees with the student comment.

Tech reference research provided the following data:

EPM-4, SQN EOI Program Manual, User's Guide, Appendix A, definition:

"ISOLATE - Separate a component from its surroundings, usually mechanically, hydraulically, pneumatically, or electrically."

Per attached drawing 47W610-90-3A, Rad monitors 90-106 & 112 are Isolated by valves FCV-90-113 & 117 during conditions of a CNMT Vent Isolation (CVI). Also on this drawing Rad Monitors 90-125 & 126 indicate that they have manual isolation valves only and do not "Isolate" when a Control Room Vent Isolation is initiated. The dampers associated with these rad monitors (RM90-125 & 126) are

re-positioned such that the normal suction path is diverted away from the rad monitors, however per the definition of ISOLATED, RM-90-125 & 126 remain operating with their suction and discharge valves open.

Although the intent of original question was to ask if RM-90-125 & 126 will continue to sample their normal flow stream of air, the actual wording used in the question "if RM- 90-125 & 126 are/are NOT isolated, should be that they are NOT isolated. Thus SQN requests that the answer key for question #72 be changed from "A" to "C" to make the key reflect the technically correct answer.

NRC Resolution: Recommendation accepted in that credit will also be given for answer C. Based on reviewing comments stated above by the applicants and the system drawings and lesson plan, the following statements can be made:

1. Dampers downstream of RM- 90-125 & 126 close upon receiving a CRI signal (FCO-31A-105A, 106A) which is what the question proposes.
2. This prevents outside air from getting into the Control Room so the Control Room is effectively isolated from the outside air.
3. The Radiation Monitor however, is still in operation and monitoring what is essentially a "dead leg" of duct work that is open to atmosphere on one end.
4. There were questions during the exam on what was meant by the term "Isolated" which adds to the opinion that the question was not clear as it was written.

Based on this analysis, it can be said that while RM- 90-125 & 126 are not physically isolated from the airstream that they monitor (Answer C), they are isolated from the Control Room which is their function (Answer A).

Answers A & C appear as opposing answers (isolated or not isolated) which NUREG 1021, ES-403.D.1.c would recommend deleting as opposed to giving two correct answers. In this question however, the issue is not whether or not a specific damper closes but which dampers make up an isolation boundary. This aspect was not clearly defined in the question.

Therefore, answers A & C will be accepted for Question 72.