

ANS Issues Clarification on ANSI/ANS-8.3-1997 (R2003), “Criticality Accident Alarm System.”

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Inquiry:

I am seeking clarification on ANSI/ANS-8.3-1997 (R2003), Section 4.3.3. What is the intent of the manual reset? Is it to silence the audible alarms? Should the meter reading drop to zero and measure again? Assistance will be appreciated.

Response:

It is important to understand that the recommendations are correlated with the requirement in this section. The intent of the requirement is to ensure that the audible alarm continues to operate even if the detectors no longer function or the radiation level drops. This is to preclude inadvertent personnel entry into the facility in which the accident occurred whether it is continuing or terminated.

There are three recommendations concerning manual resets of the signal generators that are correlated to this requirement.

- The first recommendation is that the manual resets be provided.
- The second recommendation is that resets be access limited, meaning that only a select group of personnel, e.g., incident commanders, should have the ability to reset the signal generators. (Presumably this would be accomplished only after all personnel have been accounted for and access to the facility is otherwise controlled.)
- The third recommendation is for the manual resets to be located outside the area that requires evacuation so that undue risk to personnel is not required to reset the generators.

The intent of manual reset is to support the subsequent official emergency response, which may include personnel entry to the evacuated areas for such reasons as to verify that the accident has self-terminated, or to take action to terminate an ongoing or intermittent accident. Following reset of the alarm signal generators, the overall system may then provide warning to re-entry personnel, should the criticality event resume. The recommendation applies to the signal generators. It presumes that the detector portions of the system will continue to operate and are not fixed in an alarm mode.

The intent of the manual reset is unrelated to the primary function of the alarm system (to promote prompt detection of an accident and prompt personnel evacuation from high-hazard radiation areas). Although emergency response actions (other than the initial evacuation of personnel) are outside the scope of ANS-8.3, ANS-8.3 recommends an alarm signal reset capability to aid in such actions. Once an accident has occurred, it is too late to determine if a reset capability is needed based on specifics of the particular accident incurred. The manual reset capability, if provided, must be part of the design and function of that equipment and therefore falls under ANS-8.3.