

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, D.C. 20555-0001

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NRC INFORMATION NOTICE 2002-25: CHALLENGES TO LICENSEES' ABILITY TO
PROVIDE PROMPT PUBLIC NOTIFICATION AND
INFORMATION DURING AN EMERGENCY
PREPAREDNESS EVENT

Addressees

All holders of operating licenses for nuclear power reactors, except those who have permanently ceased operations and have certified that fuel has been permanently removed from the reactor vessel.

Purpose

The U.S. Nuclear Regulatory Commission (NRC) is issuing this information notice (IN) to alert addressees to licensee problems with the Alert and Notification System (ANS) and the Emergency Alert System (EAS) and to the effect of call-inhibiting devices such as the "TeleZapper™". This IN is intended to ensure that licensees are able to provide prompt public notification and information during an emergency preparedness event. The NRC expects recipients to review the information for applicability to their facilities and consider taking actions, as appropriate, to avoid similar problems. However, the suggestions contained in this information notice do not constitute NRC requirements and, therefore, no specific action or written response is required.

Background

The emergency notification requirements are given in planning standard 10CFR50.47(b)(5):

Procedures have been established for notification, by the licensee, of State and local response organizations and for notification of emergency response personnel by all organizations; the content of initial and followup messages to response organizations and the public has been established; and means to provide early notification and clear instruction to the populace within the plume exposure pathway Emergency Planning Zone have been established.

These requirements are amplified in Appendix 3 of NUREG-0654 FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants":

NRC and FEMA recognize that the responsibility for activating the prompt notification system . . . is properly the responsibility of the State and local governments. NRC and FEMA also recognize that the responsibility for demonstrating that such a system is in place rests with the facility licensee.

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Appendix 3 also states that the licensee's plan shall include the capability for 24-hour a day alerting and notification and provisions for using the media and/or other methods to communicate emergency instructions to the public.

Description of Circumstances and Discussion

ALERT AND NOTIFICATION SYSTEM (ANS)

- **Inability To Detect Siren Failures**

In September 2000, Peach Bottom Atomic Power Station and Limerick Generating Station reported that jumper wires had been installed in numerous siren boxes which bypassed the failure detection circuitry. As a result, several sirens tested as operable when they were not. During its investigation, the licensee determined that siren testing maintenance records had been falsified by contract technicians. In an actual emergency, emergency management officials could not have detected the failure of sirens that had jumpers. The jumpers could have prevented (or delayed) route alerting for residents in the vicinity of the inoperable sirens. The licensee recalculated its PI data for the affected period and one of its sites crossed the green-white performance threshold. Based on the licensee's root cause investigation, NRC attributed the unauthorized jumper wire installation to: (1) poor oversight of contractor and utility personnel; (2) failure to enforce contractual requirements; (3) over reliance on the failure detection system; and, (4) inadequate self-assessment. Considering that the contractor technicians willfully installed the jumper wires and that the licensee identified the issue and took effective corrective actions, the NRC determined this issue to be a Severity Level III violation with no civil penalty. The NRC Office of Investigations issued an inspection report on August 30, 2001 detailing the violation (ADAMS accession number ML01240456).

- **Failure To Test and Maintain Personal Home Alert Devices (PHADs)**

The original ANS design report submitted by Beaver Valley Power Station to the Federal Emergency Management Agency (FEMA) stated that the physical means of alerting the public were 110 sirens, approximately 1200 PHADs and route alerting. PHADs are small sirens mounted on residential electric meters. The report stated that the pole-mounted sirens might not attain the required decibel level in blind spots in the EPZ. Therefore, PHADs and route alerting were planned as "supplemental" alerting modes. However, elsewhere in the report, it referred to the PHADs as a "complementary" system installed at houses in sparsely populated areas or in blind spots of the pole-mounted sirens. The licensee's emergency plan mentions two types of sirens (large pole-mounted sirens and PHADs). The emergency plan also states: "In certain areas of the EPZ, the terrain makes it impossible to adequately notify everyone by use of the pole-mounted sirens. Some residents of the EPZ live outside the effective audible range of the sirens. Therefore, the utility has installed PHADS adjacent to the electric meter at each of these residents." During an inspection, the NRC identified concerns with the licensee's efforts to maintain the PHADs. Specifically, there were no approved testing procedures, no test records, no feedback mechanism to identify PHAD deficiencies, and no evaluation of the current adequacy of the PHADs. The failure to test and maintain the PHADs was an apparent failure to meet the risk significant

planning standard 10 CFR 50.47(b)(5) for ANS coverage since the PHADs are integral to the ANS function as defined by FEMA. The finding was evaluated as low to moderate safety significance (white) as described in the final significance determination letter issued by the NRC on June 24, 2002 (ADAMS accession number ML021760594).

FEMA -REP-10, "Guide for the Evaluation of Alert and Notification Systems for Nuclear Power Plants," provides general acceptance criteria for special alerting methods in section E.6.2.4.1. Licensees which utilize special alerting methods should review their current testing and maintenance programs to ensure that commitments made in their original ANS design report are adhered to. Additionally, licensees should obtain FEMA acceptance and approval of ANS design changes prior to implementation.

- **Inability To Activate Sirens**

At Calvert Cliffs, during a well-publicized annual full-sounding siren test on November 5, 2001, none of the sirens in the central risk county activated. The apparent cause was that a computer contractor hired by the county to simplify the computer screen, removed the correct icon and incorrectly programmed the icon left on the screen. The licensee immediately addressed this issue and made the necessary changes. A well-publicized retest verified that the corrective actions were effective. The licensee investigation revealed that, despite successful weekly silent tests, the sirens were incapable of being activated by this county for several months. NRC inspection report IR05000317/2001-012, IR05000318/2001-012 (ADAMS accession number ML020280505) describes this event.

These situations show the need for counties to notify licensees before they work on and/or modify the siren activation system and the need for thorough post-maintenance testing following any modification.

EMERGENCY ALERT SYSTEM (EAS)

Radio and television stations began implementing the current EAS on January 1, 1997. EAS equipment at broadcast stations is either in an automatic or manual mode. If the equipment is in the automatic mode, State and local governments can transmit emergency instructions to the public through radio, television and cable stations 24 hours a day whether or not the station has staff present. The broadcaster or cable operator must set the EAS equipment to auto-forward the message.

As a result of an inadvertent siren activation, the "risk" county called the specified primary EAS radio station to broadcast an EAS message that there was no emergency. But, the on-duty technician at the radio station could not activate the system due to a lack of training. During the event investigation, the county discovered that the radio station had a shortage of personnel and that it was using an automated broadcasting format during off-hours (e.g., 10 pm to 2 am). Further, a local area plan had been submitted to the Federal Communications Commission (FCC) for approval (a new requirement stemming from the implementation of the EAS). FCC approval establishes a commitment by the radio station to provide EAS services. FCC rejected the local area plan because the backup radio station was in the same building. Since the plan was disapproved, the station had no commitment to provide the service.

This is not an isolated case. In several past instances, the primary EAS radio station was not manned 24 hours a day and did not have auto-forward capability. In these situations, the ability to promptly broadcast an emergency message is questionable. As stated in 10 CFR Part 50, Appendix E, Section IV.D.3: "The design objective of the prompt public notification system shall be to have the capability to essentially complete the initial notification of the public within the plume exposure pathway EPZ within about 15 minutes." Licensees should confirm that their EAS station(s) is committed to providing EAS services and the capability exists to broadcast an emergency message at all times.

CALL-INHIBITING DEVICES

In order to notify emergency workers or members of the public of a declared emergency, numerous licensees have either contracted the services of a high-speed telephone emergency notification company or installed a "predictive dialing" computer system (e.g., Community Alert Network (CAN®) or Dialogics®). Utilizing these methods, notification of a declared emergency event can be automatically made to a large number of people in a relatively short period of time.

However, another technological application has been devised (e.g., TeleZapper™ and Tel-A-Zap™) to inhibit the successful completion of an incoming call from an originator using predictive dialing computers normally identified by caller ID as "out of area" or "unavailable" (e.g., telemarketers). For these incoming calls, some of the devices emit a tone (the same tone heard when a number is dialed incorrectly), that acts as an "operator intercept", causing the receiving phone to hang up. Other variations of the device screen calls and request additional information that the predictive dialing computer is unable to provide. Yet other devices will only permit pre-programmed numbers and ignore those numbers it does not recognize.

In the situation where an individual has a call-inhibiting device installed, the ability to notify emergency responders or members of the public using predictive dialing computers may be impaired. Due to the variety of call inhibiting devices and predictive dialing computers, there is a myriad of postulated interactions between the systems.

The impact of call inhibiting devices on established notification methodology should be clearly understood by emergency responders. Additionally, members of the public may not be aware of the fact that call-inhibiting devices may prevent them from receiving emergency notifications.

This information notice does not require any action or written response. If you have any questions about this information notice, please telephone or e-mail one of the technical contacts listed below.

/RA/

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