

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

April 2, 1996

NRC INFORMATION NOTICE 96-19: FAILURE OF TONE ALERT RADIOS TO ACTIVATE WHEN RECEIVING A SHORTENED ACTIVATION SIGNAL

Addressees

All holders of operating licenses or construction permits for nuclear power reactors.

Purpose

The U.S. Nuclear Regulatory Commission (NRC) is issuing this information notice to alert addressees to the possibility that tone alert radios may not reliably activate when receiving a shortened activation signal. It is expected that recipients will review the information for applicability to their facilities and consider actions, as appropriate, to avoid similar problems. However, suggestions contained in this information notice are not NRC requirements; therefore, no specific action or written response is required.

Description of Circumstances

In a report made pursuant to Section 50.72(b)(1)(v) of Title 10 of the Code of Federal Regulations (10 CFR 50.72(b)(1)(v)), Event Number 29907, dated January 30, 1996, the licensee for the Callaway site reported a problem with tone alert radios. During a test of the Emergency Alert System (EAS), a radio station engineer observed that a tone alert radio receiver did not activate. An investigation by the licensee found that the length of the broadcast activation signal was insufficient to reliably activate the tone alert radio receiver model in use at the radio station. The broadcast duration of the activation signal had been reduced from 20 seconds to 8 seconds as permitted by current Federal Communications Commission (FCC) regulations. The radio station restored the duration of the activation signal broadcast to the original 20-second length and observed that the tone alert radio receiver activated as expected.

Discussion

Section 50.47(b)(5) of 10 CFR requires emergency response plans for nuclear power reactors to include a means of providing early notification and clear instruction to the populace within the plume exposure pathway emergency planning zone (EPZ) in the event of an emergency. Many nuclear power reactor sites have integrated tone alert radios into alert and notification systems used to notify and provide instructions to members of the general public near the site during emergency situations.

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These radios may serve as supplements to a siren system by filling in voids in siren coverage, or they can be the principal means of notifying the EPZ population. Tone alert radio receivers are used in conjunction with the EAS.

On December 28, 1994, the FCC issued a Report and Order (59 FR 67090) concerning the Emergency Broadcast System (EBS). This Report and Order replaced the EBS with what is now known as the EAS. This change allowed for the creation of a new generation of alerting equipment embracing digital technology. The change also modified some of the old EBS requirements. One of the changes permits the use of a shorter duration tone activation signal to activate tone alert radio receivers. This change may have decreased the reliability of some tone alert radios currently in use to activate when required.

Before July 1, 1995, the broadcast duration of the signal that activates tone alert radios was required to be between 20 and 25 seconds. After July 1, 1995, the broadcast duration of the signal that activates tone alert radios was permitted to be between 8 and 25 seconds. The FCC encourages the use of the longer (up to 25 seconds) tone during emergencies.

Tone alert radio receivers are, and have been, available from various manufacturers for several years. Depending on the specifications provided by the purchaser, the threshold for activation has been built into receivers. The signal duration needed for some tone alert radio receiver models may be longer than the currently approved 8-second minimum signal duration now allowed by FCC regulations.

The FCC regulations permit individual radio stations to select the duration of the activation signal they broadcast, provided it is within the limits of 8 to 25 seconds. To reliably activate a tone alert radio receiver the duration of the activation signal broadcast by the radio station must be long enough to meet the activation threshold built into tone alert radio receivers in service in a particular reception area. If the duration of the activation signal broadcast is not compatible with the threshold set in a receiver, the reliability of the receiver response is questionable. Either the duration of the activation signal broadcast or the threshold for activation built into receivers may need to be modified to ensure compatibility.

This information notice requires no specific action or written response. If you have any questions about the information in this notice, please contact one of the technical contacts listed below or the appropriate Office of Nuclear Reactor Regulation (NRR) project manager.

  
Dennis M. Crutchfield, Director  
Division of Reactor Project Management  
Office of Nuclear Reactor Regulation

Technical contacts: D. M. Barss, NRR  
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Attachment: List of Recently Issued NRC Information Notices

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**LIST OF RECENTLY ISSUED  
 NRC INFORMATION NOTICES**

<b>Information Notice No.</b>	<b>Subject</b>	<b>Date of Issuance</b>	<b>Issued to</b>
96-18	Compliance with 10 CFR Part 20 for Airborne Thorium	03/25/96	All material licensees authorized to possess and use thorium in unsealed form
95-03 Supp. 1	Loss of Reactor Coolant Inventory and Potential Loss of Emergency Mitigation Functions While in a Shutdown Condition	03/25/96	All holders of OLs or CPs for PWR power plants
96-17	Reactor Operation Inconsistent with the Updated Final Safety Analysis Report	03/18/96	All holders of OLs or CPs for nuclear power reactors
96-16	BWR Operation with Indicated Flow Less Than Natural Circulation	03/14/96	All holders of OLs or CPs for boiling-water reactors
96-15	Unexpected Plant Performance During Performance of New Surveillance Tests	03/08/96	All holders of OLs or CPs for nuclear power reactors
96-14	Degradation of Radwaste Facility Equipment at Millstone Nuclear Power Station, Unit 1	03/01/96	All holders of OLs or CPs for nuclear power reactors
96-13	Potential Containment Leak Paths Through Hydrogen Analyzers	02/26/96	All holders of OLs or CPs for nuclear power reactors
96-12	Control Rod Insertion Problems	02/15/96	All holders of OLs or CPs for nuclear power reactors

OL = Operating License  
 CP = Construction Permit

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OFFICE	PERB:DRPM:NRR	SC/PERB:DRPM	C/PERB:DRPM:NRR
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DATE	03/18/96	03/18/96	03/18/96

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NAME	BCalure*	JBirmingham*	A <sup>TKH for ALD</sup> EChaffee <sup>all</sup>	DMCrutchfield
DATE	03/ /96	03/21/96	03/22/96 VSB	03/ /96

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DATE	03/18/96	03/18/96	03/18/96

OFFICE	TECHED:RPB	PECB:DRPM:NRR	C/PECB:DRPM:NRR	D/DRPM:NRR
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DATE	03/ /96	03/ /96	03/ /96

OFFICE	TECHED:RPB <i>Bae</i>	PECB:DRPM:NRR	C/PECB:DRPM:NRR	D/DRPM:NRR
NAME	<i>B. Caluso</i>	JBirmingham	AEChaffee	DLCrutchfield
DATE	03/14/96	03/ /96	03/ /96	03/ /96

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