



**FEMA**

November 2, 2009

Mr. Paul Parmenter, Director  
Missouri State Emergency Management Agency  
2302 Militia Drive  
P.O. Box 116  
Jefferson City, Missouri 65102

Dear Mr. Parmenter:

This is to officially inform you of the U.S. Department of Homeland Security/Federal Emergency Management Agency's identification of one Deficiency finding during the Callaway Nuclear Power Plant Radiological Emergency Preparedness (REP) full-scale ingestion pathway exercise conducted on October 20-21, 2009.

A Deficiency is defined by FEMA as an observed or identified inadequacy of organizational performance in an exercise that could cause a finding that offsite emergency preparedness is not adequate to provide reasonable assurance that appropriate protective measures can be taken in the event of a radiological emergency to protect the health and safety of the public living in the vicinity of a nuclear power plant.

The Missouri State Emergency Operations Center (EOC) received one Deficiency finding under **Emergency information and instructions for the public and the media – Criterion 5b1 – Offsite Response Organizations provide accurate emergency information and instructions to the public and the news media in a timely manner (reference NUREG-0654, E.5., 7., G.3.a, G.4.a.b.c).**

The Deficiency assessed is based on our findings that the performance of the Missouri State EOC and radio station KTXY did not ensure that the plans, procedures, training, and response are adequate to protect the health and safety of the public. As demonstrated during this exercise, the general public would not have received all critical information concerning protective actions (including recommended evacuation) in a timely manner.

More detailed information regarding the Criterion 5b1 process and performance is included in the enclosed issue paper. This issue was discussed with State Emergency Management Agency representatives involved in the post exercise participants meeting conducted on October 23, 2009.

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Because of the potential impact this finding has on public health and safety, this Deficiency must be corrected within 120 days after the exercise date – **no later than Thursday, February 18, 2010** - through a remedial exercise.

Please coordinate with this office regarding a Schedule of Corrective Actions, including the date, time, and identification of those organizations and participants by title participating in the remedial exercise and any other actions no later than Thursday, November 12, 2009.

Your cooperation in this matter is sincerely appreciated. Please be assured we stand ready to assist you and your staff in any way possible to resolve this matter. If you have any questions, please contact Ronald L. McCabe, Chairman, Regional Assistance Committee, at (816) 283-7007.

Sincerely,



Arthur Freeman  
Acting Regional Administrator

Enclosure

cc: Vanessa Quinn & Lisa Banks-Robinson, HQ REP  
Lisa Gibney, NRC HQ  
Bill Maier, NRC Region IV  
Kevin Bruckerhoff, Ameren UE

## **Issue: Missouri State Emergency Operations Center**

### **Condition:**

The State Emergency Operations Center (EOC) failed to ensure that the public was notified, in a timely manner, of the need for the evacuation of subareas C1, C2, and C3 in Callaway County, Missouri.

This failure was the result of four (4) interrelated causes: a delay between notification to the state by the plant and the decision to evacuate affected populations; an equipment failure within the State EOC; the decision to record the Emergency Alert System (EAS) message rather than to broadcast it simultaneously with its recording; and a failure by radio station personnel to recognize the urgency of the evacuation message and to broadcast it immediately.

The specific chronology of this issue is as follows:

At 11:32 a.m., the Missouri State Emergency Operations Center (EOC) was notified that the Callaway Nuclear Power Plant had declared a General Emergency at 11:22 a.m.

Eleven minutes later at 11:43 a.m., the Operations Officer of the State EOC entered an ongoing conference call involving the Forward Command Post/Emergency Operations Center and the EOCs in the counties of Osage, Gasconade, Callaway, and Montgomery. The purpose of this conference call was to coordinate the county decisions in response to the utility's recommendation to evacuate Sectors P, Q, and R (sub-areas C-1, C-2, and C-3) of the emergency planning zone in light of an ongoing release of radioactive materials from Callaway Nuclear Power Plant. This call was terminated at 11:47 a.m. with all parties in agreement to evacuate the cited sub-areas.

At 11:51 a.m., the Operations Officer advised the EOC control room to contact Callaway County to "sound sirens now."

Just prior to this time the State EOC staff assigned to operate the EAS messaging system, a computer-based "Digi-Cart" system, had assembled two stacks (or strings) of related, prerecorded messages pertaining to this evacuation decision. In prior discussion with the Operations Officer and as the result of the need (prompted by a simulated earthquake and resultant damage to roadway infrastructure) to modify prescribed messages detailing evacuation routes, the agreed upon plan was to transmit "Stack One" to radio station KTXY (the primary EAS station), then inject live evacuation route updates before transmitting "Stack Two."

This process was initiated between 11:51 a.m. and 11:52 a.m. The Digi-Cart system failed repeated attempts to transmit "Stack One." As a result, transmission of the multi-part message did not commence until the Digi-Cart operated properly at 11:59 a.m., and the full message package was not completely transmitted until 12:03 p.m.

At this point, thirty-one (31) minutes had elapsed from the time the State EOC was advised of the General Emergency, and sixteen (16) minutes had elapsed from the time the decision was made to evacuate sub-areas C-1, C-2, and C-3 and advise the public of this decision through activation of the EAS system.

Broadcast of the EAS message at 12:03 p.m., twelve (12) minutes after the sounding of the sirens was delayed further by a lack of clear communication to the EAS board operator at KTXY and/or lack of clear, written procedures. Concurrent evaluation of the KTXY operation revealed that the KTXY board operator, previously instructed (at Site Area Emergency) to broadcast EAS messages every fifteen (15) minutes "until further notice," did not recognize the primacy of the evacuation message and waited, subsequently, four (4) additional minutes to broadcast the message at the pre-directed fifteen-minute interval despite the State EOC operator's request to "broadcast the message now."

As a result, the evacuation message was not transmitted to the public until thirty-five (35) minutes after the notification to the State EOC of the General Emergency classification, twenty (20) minutes after the decision was made to evacuate sub-areas C-1, C-2, and C-3, and sixteen (16) minutes after Callaway County was requested to sound the sirens.

This is not considered timely notification.

In all respects, the content of the messages were complete and accurate; however, provision of the information to the public was unduly delayed.

**Possible Cause(s):**

There are four (4) possible causes for this issue:

1. Fifteen (15) minutes elapsed between notification to the State (and the counties) of the General Emergency and the conclusion of the coordination call between the State and county EOCs;
2. Failure, for a period of approximately eight (8) minutes, of the Digi-Cart messaging system at the State EOC;
3. The decision to wait to broadcast the message until it was received 'in toto' by KTXY rather than broadcasting it 'live' and recording it for subsequent replay and,
4. Failure of the KTXY personnel to broadcast the message immediately.

**Reference:**

NUREG-0654, E.5., 7, G.3.a, G.4.a.b.c.

**Effect:**

The initial effect was untimely delayed delivery of evacuation information to the affected population of the emergency planning zone. The evacuation message was not transmitted to the public until thirty-five (35) minutes after the notification of the General Emergency and twenty (20) minutes after the decision to evacuate sub-areas C-1, C-2, and C-3. In addition, the sirens alerting the public were sounded sixteen (16) minutes prior to the broadcast of the evacuation message. This delay in the broadcast of evacuation information and the gap between the siren and the message, potentially placed persons within the Emergency Planning Zone at greater risk as they would not have been instructed to evacuate in a timely manner.

**Corrective Actions:**

1. This criterion must be redemonstrated.
2. Efforts should be made to find ways to expedite coordination of decision-making between units of government having jurisdiction for protective actions. While complex situations can and do arise that require time for full consideration, a sense of urgency must be maintained.
3. The Digi-Cart system currently in use is proprietary in source, somewhat complex to operate, and susceptible to undiagnosed failure, and it should be replaced with currently-available, supportable technology when funding streams to permit replacement can be identified.
4. To expedite delivery of information, plans and procedures should be modified to permit KTXY to simultaneously record and broadcast EAS messages.
5. Written procedures for KTXY should be developed and used as the basis for training, and subsequent EAS operation to avoid future uncertainty or confusion about message handling.

It is further recommended, in all instances to include both this issue and general operations, that a means of synchronizing clocks between the State EOC, the risk county EOCs, and KTXY for the purpose of efficiently coordinating and documenting activities, be agreed upon and implemented.