



DEPARTMENT OF THE ARMY
UNITED STATES ARMY TACOM LIFE CYCLE MANAGEMENT COMMAND
6501 EAST 11 MILE ROAD
WARREN, MICHIGAN 48397-5000

REPLY TO
ATTENTION OF:

July 31, 2007

Safety Office

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

Dear Sir/Madam:

An incident was reported by phone on 2 July 07 to the NRC Operations Center Under 10 CFR 30.50, concerning Event Number 43468, Nuclear Regulatory Commission (NRC) License 21-01222-05, Docket No. 030-11612. It involved a Tester, Density and Moisture (Soil and Asphalt) Nuclear Method Campbell Pacific Model MC-1 (CCE), NSN 6635-01-030-6896, Serial Number M17112095. The MC-1 Tester had on manufacture (in 1977) 10 mCi of Cesium 137 and 50 mCi of Americium 241/Be. The sources are solid, sealed, and double encapsulated. The MC-1 Tester is assigned to the 62nd Engineer Bn at Ft. Hood, TX and located there. The tester was with the unit that was deployed overseas and had returned to the unit location in December 2006. The tester has not gone back to the manufacturer (CPN) for any work in quite some time.

The incident occurred at the unit location. Unofficial notification was provided to our Command (NRC Licensee) on June 26, 2007 with official notification to our Command on July 2, 2007.

The incident involved the MC-1 Tester's locking mechanism not preventing the shaft of the guide tube from moving downward and exposing the Cesium 137 source through the different positions (i.e. safe, 6 inch, 8 inch and 12 inch). It will not lock at the different positions. The locking mechanism problem was related to a pin engaging defect. Also, the lead trap door is in place, but doesn't slide out of the way when the source rod is lowered. Thus it is preventing the source from being exposed or from coming out of the tester. The shutter is in place and closed. The rod is fully retracted with the rod and source inside of the tester housing. The tester is stored like normal in its transport case. There are no known personnel exposures.

The problem was discovered by the Local Radiation Safety Officer (LRSO) on June 26, 2007, after himself and the Alternate LRSO (both trained operators), checked out the tester. They were verbally told of the tester having a display problem on June 18, 2007. The LRSO and Alternate LRSO discovered that the tester display functioned, after they cranked down on the display screw. When they further checked out the tester, they discovered the handle wouldn't lock in the safe and other positions. They compared this to another tester and then determined that the tester had a problem needing maintenance. The LRSO then sent an e-mail on June 26, 2007 to the TACOM LCMC NRC licensee. The e-mail asked for maintenance or turn-in instructions. The e-mail was read on July 2, 2007 with immediate actions taken to verify the situation. The verification on that day resulted in NRC notification and an event number being assigned at 1703 hour as indicated above. A verbal update was provided to the NRC on July 3, 2007 at 1329 hour with a follow-on e-mail to the required NRC e-mail address.

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Investigation of the tester situation determined, that the tester had some difficulty overseas with the lead trap door not easily sliding out of the way, when the rod was pushed down, but it did function. The rod locking mechanism worked overseas. The maintenance check performed by the unit was the first check, since its arrival from overseas. The maintenance check involved ensuring proper function of the tester, the rod moving freely through the ranges and cleaning the tester of any dust and dirt. The unit had planned to use the tester, but after discovering the problem with it, they then used another tester. The testers at the unit have maintenance done every six months depending on the use of the equipment.

The tester is currently in a double locked room and the tester is in a locked DOT 7A container inside of a locked greenlee box. The only personnel having access to the keys and the testers are the LRSO and Alternate LRSO. This ensures that the tester is not used.

A leak test was performed on the radiation sources on June 27, 2007 with results indicating no leakage with 0.0 DPM and uCi. A radiation survey was performed on June 03, 2007, which indicated normal radiation levels for the storage area as compared to prior radiation surveys.

The unit was provided transportation instructions to Campbell Pacific International, the tester manufacturer, on July 10, 2007. The unit is presently preparing the tester for transport and has completed the required shipping container wipe tests. They will await the wipe test results, before shipping the tester to Campbell Pacific. Campbell Pacific International will determine if the tester is repairable. If it isn't repairable, the tester will be disposed of by Campbell Pacific. The tester if repaired will be sent back to the depot for future fielding.

Users of the MC-1 Testers were notified via newsletters, conferences and training schools of the requirement to report testers with safety defects. A reminder e-mail to unit LRSOs and their Commands were sent out on July 5, 2007. The reminder e-mail indicated another tester failure since the last one in 2005. The e-mail identified that testers are having this type of failure and provided reporting requirements. We have also indicated a priority need to the US Army Engineer School to look at replacing the testers, due to the age of the devices and now a second failure involving the testers. If you have any questions regarding this matter, please contact Mrs. Karen Lapajenko McGuire at (586) 574-7635/6194.


George C. Jarvis
Safety Director

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