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Office of Inspector General
Office of Audits and Inspections

INSPECTION REPORT

The Readiness of the Department's Federal
Radiological Monitoring and Assessment
Center

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Department of Energy
Washington, DC 20585

August 28, 2014

MEMORANDUM FOR THE ASSOCIATE ADMINISTRATOR, OFFICE OF EMERGENCY
OPERATIONS, NATIONAL NUCLEAR SECURITY
ADMINISTRATION

Sandra D. Bruce

FROM: Sandra D. Bruce
Assistant Inspector General
for Inspections
Office of Inspector General

SUBJECT: INFORMATION: Inspection Report on "The Readiness of the
Department's Federal Radiological Monitoring and Assessment Center"

BACKGROUND

The Federal Radiological Monitoring and Assessment Center (FRMAC) is a multi-agency Federal asset whose mission is to manage radiological, environmental monitoring and assessment activities during a nuclear or radiological incident within the United States. The National Nuclear Security Administration's (NNSA) Office of Emergency Operations is responsible for the management of FRMAC and ensuring its operational readiness. However, FRMAC also includes representation from other agencies such as, the Department of Homeland Security, the Department of Defense, the Environmental Protection Agency, the Department of Health and Human Services, the Federal Bureau of Investigation and other Federal agencies. The majority of FRMAC's core initial response assets, to include equipment and personnel, are deployed from NNSA's Remote Sensing Laboratory at the Nellis Air Force Base in Las Vegas, Nevada. To assist with providing timely responses to any nuclear or radiological emergency in the United States, Department of Energy (Department) Order 153.1, *Departmental Radiological Emergency Response Assets*, stipulates that FRMAC equipment and personnel be maintained in a constant state of readiness.

Because of the national importance of FRMAC's ability to respond to radiological and nuclear incidents, we initiated this inspection to determine if FRMAC was operationally ready to accomplish its mission in the critical areas of personnel, training, lessons learned and equipment.

RESULTS OF INSPECTION

Our inspection found that FRMAC was generally operationally ready to accomplish its mission. However, we did identify issues with aging equipment and potential reliability issues that could adversely impact the timeliness of FRMAC's response to radiological emergencies. Specifically,

our evaluation of FRMAC's equipment, revealed that some equipment was aging and was near, or had reached, the end of its life cycle as defined by NNSA policy. We did not identify any issues in the critical areas of personnel, training and lessons learned.

Equipment Readiness

During our evaluation of FRMAC equipment we found issues that could impact future performance. Specifically, some of FRMAC's equipment was aging and near, or had reached, the end of its life cycle. NNSA's Office of Emergency Response developed criteria for determining when emergency response equipment should be replaced. Specifically, NNSA's Office of Emergency Response Policy Note 10, *Equipment Recapitalization Program*, established guidelines for the recapitalization of FRMAC equipment. The Equipment Recapitalization Program is designed to procure and replace non-expendable aging equipment or to upgrade aging equipment in support of emergency response operations. The Program focuses on the procurement or upgrade of high value, high priority equipment such as communications and radiological measuring equipment that has reached its 5 to 7 year life cycle. Further, the policy stated that aging equipment impacts the Office of Emergency Response's ability to perform its emergency mission.

We sampled 50 equipment items, examined the maintenance records and witnessed live test demonstrations of the equipment. We found that FRMAC's equipment received maintenance and testing on a scheduled basis. However, during our examination and testing of the equipment, we observed that FRMAC equipment was aging. For example, during a live test of five Multipath Communication Devices,¹ one of the devices failed and had to be replaced. We also found that these devices were nearing the end of the established life cycle, had a number of power supply failures and repair parts were difficult to obtain.

Similarly, during an evaluation of the emergency power system at the Remote Sensing Laboratory, which houses critical FRMAC assets, we noted that the building had an emergency power generator that was almost at the end of its life cycle. Although the generator received scheduled maintenance and testing, it failed during a power outage in 2012. We learned that repair parts for the generator were difficult to obtain. Consistent with the Equipment Recapitalization Program, NNSA prepared a list of equipment replacement needs that included the Multipath Communication Devices and the emergency generator.

When we discussed the matter of aging equipment with an NNSA official, we were told that only about \$1 to \$3 million a year was being spent on equipment purchases due to competing budget priorities. With this level of funding and NNSA's current rate of recapitalization, we determined that it would take approximately 7 years to replace all of FRMAC's high priority equipment such as the Multipath Communications Devices and radiological measuring equipment, and almost 19 years to replace the lower priority equipment, such as portable radios and computer equipment.

¹ Multipath Communication Devices are essential to FRMAC emergency operations because they are used to transmit radiological data from remote locations.

Several FRMAC officials stated that if the identified critical equipment failed, contingency plans were in place to ensure the completion of its mission. For example, if the Multipath Communication Devices failed, field personnel could manually record radiological data and then telephone or hand deliver the information. In addition, if the emergency generator at the Remote Sensing Laboratory failed, the FRMAC Consequence Management Home Team could set up a portable centralized home base operating from portable generators.

Personnel and Training

We determined that personnel and training readiness were effectively managed. Department Order 153.1 establishes a requirement to develop a program that ensures a 24 hour readiness response for emergency responders. Per Department Order 153.1, responders will participate in all training required to remain qualified in each position they fill. According to a FRMAC official, personnel are deemed ready if they are trained to the level of their position and are available to respond in a timely manner.

We determined that, consistent with Department Order 153.1, there was a program in place to ensure the readiness of emergency personnel. Furthermore, FRMAC had developed a detailed operations manual that defined the type and number of positions required for FRMAC operations to include the training requirements for each position. We also determined that FRMAC had trained personnel to serve as back up for key positions and personnel to ensure an adequate number of qualified emergency personnel.

In addition, FRMAC utilized an integrated database called the Asset Readiness Management System to document, track, and evaluate personnel and training requirements and to ensure readiness compliance. The database was used to monitor training, ensure training was current, and provide notification of any deficiencies to FRMAC management. Personnel readiness and training were scored and reviewed weekly by FRMAC management and NNSA headquarters personnel were briefed on readiness quarterly. Our review of training status reports for all FRMAC Department personnel revealed that training requirements were appropriately satisfied for those holding FRMAC positions.²

In order to ensure personnel were available to respond to a radiological event, a weekly call-out list was developed which required 100 percent availability of specified personnel during the designated timeframe. The automated call-out system tracked compliance with response times and was tested weekly. The results were scored and reviewed by management. We witnessed two full call-out testing sessions that required a mandatory call-in by FRMAC personnel within a 45 minute time period: the response was 100 percent.

Lessons Learned

We found FRMAC had conducted evaluations, reviews, and prepared written after action reports on deployments and training exercises in order to assess the need for operational improvements

² We did not evaluate other Federal agency personnel training requirements.

at the local level and agency-wide. According to Department Order 153.1, after action reports should be prepared for actual responses and exercises, and any lessons learned should be applied to training and emergency response assets. Consistent with this requirement, we found that lessons learned were being applied when necessary. For example, one of FRMAC's most notable deployments was during the Fukushima Daiichi Nuclear Power Plant disaster in Japan. During this incident, FRMAC personnel and assets were deployed to Japan within three days of the disaster and remained there for over two months. We noted that detailed evaluation reports were written, resulting in a number of lessons learned that were applied to both local and agency-wide operations. For instance, during this deployment FRMAC personnel recognized the need to be able to deploy aerial radiological measurement equipment on aircraft that were not normally used and equipped for FRMAC activities. Subsequently, the equipment needs and specifications were developed and operationally tested on non-dedicated aircraft.

Impact

Despite contingency plans regarding FRMAC equipment, failure of aging equipment during a radiological emergency could delay the timely measuring, recording, transmitting, and analysis of radiological information and could impact public health and safety. It is particularly concerning that the replacement cycle for some FRMAC equipment could take up to 19 years based on the current rate of replacement. Such an extended replacement period seems unreasonable considering the importance of FRMAC's mission.

SUGGESTED ACTIONS

In order to maintain this key emergency response asset, we believe further action is necessary to ensure the timely recapitalization of FRMAC equipment. Therefore, we suggest that the Associate Administrator, Office of Emergency Operations, ensure the timely replacement of aging FRMAC equipment critical to its operational readiness.

We are not making any recommendations and a formal response is not required. We appreciate your staff's cooperation during our inspection.

Attachments

cc: Deputy Secretary
Under Secretary for Nuclear Security
Chief of Staff

OBJECTIVE, SCOPE AND METHODOLOGY

OBJECTIVE

The objective of this inspection was to determine if the Federal Radiological Monitoring and Assessment Center (FRMAC) was operationally ready to accomplish its mission in the critical areas of personnel, training, lessons learned and equipment.

SCOPE

The inspection was performed between August 2013 and August 2014, and focused on FRMAC assets located at Nellis Air Force Base in Las Vegas, Nevada. The inspection was conducted under Office of Inspector General Project Number S13IS012.

METHODOLOGY

To accomplish our objective, we:

- Reviewed Federal, Department and FRMAC policies, procedures and manuals related to FRMAC's readiness;
- Interviewed officials from the National Nuclear Security Administration Headquarters, Nevada Field Office and FRMAC;
- Conducted on-site testing of FRMAC personnel, equipment and training readiness; and
- Obtained and analyzed documents, records and reports, including lessons learned reports on training exercises and deployments.

This inspection was conducted in accordance with the Council of the Inspectors General on Integrity and Efficiency's *Quality Standards for Inspection and Evaluation*, January 2012. Those standards require that we plan and perform the inspection to obtain sufficient, appropriate evidence to provide a reasonable basis for our conclusions and observations based on our inspection objectives. We believe the evidence obtained provided a reasonable basis for our conclusions and observations based on our inspection objective. The inspection included tests of controls and compliance with laws and regulations to the extent necessary to satisfy the inspection objective. Because our inspection was limited, it would not necessarily have disclosed all internal control deficiencies that may have existed at the time of our inspection. Finally, we relied on computer-processed data, to some extent, to satisfy our objective. We confirmed the validity of such data, when appropriate, by conducting interviews and analyzing source documents. Also, we assessed FRMAC's compliance with the *Government Performance and Results Modernization Act of 2010* and found that performance measures had, in general, been established.

An exit conference was held on August 7, 2014.

FEEDBACK

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