

PEMP Notable 8.0, Objective 8.1, Goal 8.0

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Emergency Management

Fiscal year 2019 (FY'19) PEMP notable for Emergency Management is represented in the table below.

Goal 8.0	Sustain and Enhance the Effectiveness of Integrated Safeguards and Security Management (ISSM) and Emergency Management Systems	Director
Objective 8.1	Provide an Efficient and Effective Emergency Management System	Chief Safety Officer
Notable Outcome	FSO: Identify necessary enhancements in the Emergency Operations Center that will improve the room's ease of use, reliability and functionality, and implement solutions.	Michels

Significant improvements have been made to the Fermilab Emergency Management program, its preparedness efforts and also to the readiness of the Emergency Operation Center (EOC), the EOC personnel and its overall functionality. It is the intention of this document to provide a summary of completed actions to meet this PEMP Goal 8.0; Objective 8.1, Notable Outcome. These actions are captured in iTrack review #49386.

Notable Outcome - Completed Actions & Summary of Achievements

Identify necessary enhancements in the Emergency Operations Center that will improve the room's ease of use, reliability and functionality, and implement solutions.

At the start of the fiscal year, the Chief Safety Officer, Deputy Chief Safety Officer and Emergency Planner met as an ad-hoc group to develop a strategy to improve performance and operability of the Emergency Operations Center. The following provides detailed information on these strategies and improvements.

It had been noted during two EOC activations the sound quality and noise levels in the EOC were affecting its operations and internal/external communications. Two closets located in the back of the EOC provided significant noise levels drowning out conversations between EOC personnel and conference line attendees. The first housed a computer rack, housing all the necessary technology for the Security Communication Center and the EOC. The aged computer rack fan provided a majority of the noise. The second closet housed a transformer, which had a consistent loud electric "buzzing" noise, so much so the closet door had to be kept closed during an EOC occupation. To eliminate the noise levels in the computer closet, a replacement computer rack was installed. This task was completed in November 2018 and has eliminated all the noise. In closet number two, the transformer room, the doors could not be kept closed as it caused high temperature levels and heat up the closet. The Emergency Planner collaborated with FESS Engineering to scope and complete the installation of an exhaust fan between the transformer closet and outside hallway of WHGF-East side. The exhaust fans provide a means for heat to be evacuated from the room and allowing the closet doors to be kept closed. Completion of this project occurred on March 23, 2019 and has eliminated the noise coming from the transformer closet room.

A necessary improvement in the EOC sound quality and communication capabilities was also identified by the ad-hoc team. During EOC activations, the desk and cellular phone systems were prohibitive to effective conversations and communications between EOC personnel and off-site attendees. The issue, conference call sessions had to be conducted with multiple separate phones, on separate speaker lines and attendees could not hear, or communicate with each other. Limited, to poor, cellular phone reception inhibited the ability of EOC personnel to communicate effectively with department personnel. The strategy outlined by the CSO, DCSO and EP to resolve these issues was to upgrade the EOC to a "ZOOM room" and install a cellular repeater.

Emergency Planning collaborated with Computing and FESS to scope and complete the installation of Zoom technology, speakers, microphones and iPad. The Zoom room now allows easy, effective and cohesive communication between onsite EOC personnel and external personnel. This task was completed on March 22, 2019 and training on the use of Zoom conferencing capabilities was completed on April 1, 2019 for David Esterquest, Joe Rogers, Lori Limberg and Deb Sebastian. EOC Zoom conferencing capabilities were successfully integrated and utilized during three emergency tabletop exercises in July 2018. The EOC has the standard three Zoom microphones located at the main EOC table, this is consistent with other Fermilab Zoom enabled rooms. It was determined cost prohibitive to install additional microphones in the EOC.

United Radio in March 2019 completed the installation and testing of a cellular repeater located in both the EOC and Security Communications Center. The cellular repeater allows and ensures that cellular communication capabilities are continuous during an EOC activation, or site event, emergency. Cellular repeater capabilities were integrated and utilized during three emergency tabletop exercises in July 2019.

Emergency management concept identifies to assess the local communities EOC capabilities in an effort to identify best practices. The ad-hoc team strategy to meet this included a review of nearby EOCs – Northern Illinois University, DuPage County, and Northwestern Medicine Delnor Hospital.

The purpose of the three EOC visits was to evaluate, observe and understand some best practices, lessons learned and physical design of their respective EOC's. Fermilab's EOC is designed, organized and structured very similarly to all three EOC's. As compared to NIU and Delnor, the DuPage County EOC was most robust in its floorplan, layout and access to breakout rooms and technology. DuPage County's budget and space availability played a key factor in their design. A written summary has been created in docdb #5254. Based on the personnel interviews and knowledge gained during each of the three visits, the following recommendations were completed for the Fermilab EOC operations:

- Implement a standard system for information management, specifically it is recommended to create and implement EOC position job aids and related ICS forms. This is detailed further below.
- EOC personnel to become familiarized with their EOC position job-aids and related ICS forms and learn to utilize them during an emergency. This is detailed further below.

Fermilab specific EOC position job aids, EOC job aid forms, ICS forms and reference documents to include contact phone numbers were developed. The EOC position job aids/forms placed in binders are provided for each command and general staff position and outlines general actions or queues to take during an EOC activation/response. ICS forms are provided for emergency documentation purposes. Other reference documents include, EOC activation flowchart, EOC contact information, DOE-FSO contact and resources contact information. To socialize the implementation of these position binders, individual training sessions were conducted with EOC position personnel to orient them to their respective position forms, contact information and to seek their review and recommendation to enhance the binders. The EOC position binders and its contents were integrated and utilized during three emergency tabletop exercises in July 2019. The binders will continue to be used for all EOC activations or exercises.

It is imperative for EOC personnel to understand the fundamental concepts of emergency management through completion of ICS training. This training is a building block for additional Fermilab specific EOC training. To identify the EOC personnel who need to complete ICS training, assignments for Primary, Secondary and Tertiary EOC personnel occurred to align with recent Fermilab and DOE-FSO organization changes. The affected assignments include EOC Manager, PIO, Operations, Planning, Finance, DOE-FSO (Liaison) and WDRS positions. ICS 100 *“Introduction to the Incident Command System”* and ICS 700 *“An Introduction to the National Incident Management System”* was assigned to all EOC personnel. ICS course completion is tracked in TRAIN and the certificate(s) of completion are provided to the Emergency Planner. This is a one-time training and does not need to be completed again.

During Q3 and Q4 of FY2019 EOC briefing and preparedness training for all Primary, Secondary and Tertiary EOC personnel was conducted and completed. The purpose of this briefing training is to provide an overview of Fermilab EOC, its event response and support capabilities and the form and functional role of the EOC during an emergency or event. Training also allowed time for questions and answers related to the EOC and personnel roles and responsibilities. The training will be conducted annually for all EOC personnel.

FY 2019 was a very productive year for the emergency management program with expansion and enhancements in the Emergency Operations Center that improved the room’s ease of use, reliability and functionality. The physical and functional improvements in the EOC and emergency management training completed for EOC personnel has improved its readiness. In building upon these enhancements, and further prepare EOC personnel for a real-world event, a series of three (3) tabletop exercises (TTXs) were conducted in the month of July 2019. Each TTX was a separate session provided to the primary, secondary and tertiary personnel, invitees included external healthcare providers, Accelerator Division Technicians, Fermilab Fire/EMS, Radiation Safety Officers (RSOs) and Radiological Control Technicians (RCT). The TTX scenario was a radiological contamination incident of a Mechanical Support Technician. The TTX scenarios tested EOC personnel’s ability to mitigate, respond to and recover from a radiological contamination event. In addition, the EOC improvements were incorporated into each TTX by allowing attendees Zoom availability, directing EOC personnel to utilize their position binders, referencing the cellular enhancements and noting the reduction of noise levels. It was noted during the TTX that additional meetings and follow up is needed with external healthcare agencies, RSO’s, FFD and Emergency Management, this will occur in Q1 FY2020. The radiological AAR is summarized in docdb #3063

Continuous improvement in the Emergency Management program will be an ongoing effort. An aspect of continuous improvement is the Emergency Management, Security, Fire Protection and the FFD have begun developing a comprehensive Emergency Management exercise and training plan to test the skills of the EOC and lab staff in a wide variety of situations. This is a multi-year training/exercise program and identifies areas which can train, educate, test or stress various emergency management areas and its personnel.

Key Notes for our Stakeholders

The Emergency Management program has been evaluated and a progressive path forward to provide an efficient and effective Emergency Management System has been identified and is being implemented. In the summary above, and in the Achievements database, there are multiple functional areas of the emergency management program, its systems and personnel

which have made significant progress. These improvements are not isolated to physical and functional aspects of the EOC, but also to the EOC personnel who have been trained, educated and participated in EOC exercises. The addition of EOC position job aids, EOC forms and reference materials/documents allows the EOC to respond to an incident or event while providing structure supportive of an efficient emergency management program.

Barriers and Potential Risks

- The Site Alarm Monitor (SAM) program will no longer be supported. This will require the installation of other emergency voice alarms systems, such as fire voice alarm systems or a tone alert receiver (TAR).
- Funding to support the Emergency Management program and its systems should continue.