

Management Assistance Report: Improper Installation of Key Components of U.S. Embassy Kabul, Afghanistan's Fire Alarm System Needs Prompt Attention

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Summary of Review

During the course of an audit of Bureau of Overseas Buildings Operations (OBO) construction projects at the U.S. Embassy in Kabul, Afghanistan, the Office of Inspector General (OIG) was alerted to potential risks to personnel and property due to the improper installation of the embassy's fire alarm system. OIG concluded that the system was, in fact, improperly installed and did present safety risks. OIG is therefore issuing this Management Assistance Report to prompt immediate action to address the identified deficiencies.

OBO and the Bureau of Administration have undertaken a major office and residential expansion at the U.S. Embassy in Kabul. As part of this expansion, in June 2010, the bureaus contracted with Caddell Construction, Inc. (Caddell), to build a number of new facilities at the embassy. These facilities include residential and office buildings, warehouses, parking and vehicle maintenance facilities, power plants, perimeter walls, guard towers, and compound access control facilities. Caddell is required to install fire alarm systems in each of the new buildings throughout the compound as part of its contract.

Fire alarm control panels installed in 23 buildings on the embassy compound are key components of the fire alarm system. Fire alarm control panels monitor and control each fire alarm-initiating and signaling device through microprocessors and system software. Fire alarm control panels are connected throughout the embassy compound via fiber optic cables that transmit data between each building and to Post One, a communications center staffed by Marine Security Guards. The Marine Security Guards at Post One are on duty 7 days a week, 24 hours a day and are responsible for ensuring that communications are routed to appropriate responders during emergencies or security threats. When a fire emergency occurs at any building on the embassy compound, Post One is alerted through the network of fire alarm control panels. Post One, in turn, alerts the embassy fire department and other emergency response personnel.

In July 2017, the embassy's principal operations and maintenance (O&M) contractor, PAE Government Services (PAE), discovered that underground fiber optic cables on the west side of the embassy compound were accidentally cut by a construction worker. As a consequence of the damage to the fiber optic cables, fire alarm control panels in eight buildings could not transmit data to Post One for more than 6 months. After completion of OIG's fieldwork in January 2018, OIG shared its findings with OBO officials. In response, embassy facility managers took steps to repair the damaged fiber optic cables and restored connectivity between the affected buildings and Post One.

OIG also found that the existing fiber optic cable network does not have a separate redundant path as required by Section 12.3.7 of the National Fire Protection Association (NFPA 72) code.¹ According to NFPA, a redundant path helps ensure the network's continued functionality if

¹ NFPA 72: National Fire Alarm and Signaling Code, 2013 Edition. The NFPA is a global nonprofit organization, established in 1896, devoted to eliminating death, injury, property, and economic loss due to fire, electrical, and related hazards. Its' codes and standards are designed to minimize the risk and effects of fire by establishing criteria for building, processing, design, service, and installation around the world.

one of the cables is damaged. Without a redundant path, damage in one location can render sections of the network inoperable. Additionally, OIG found that seven fire alarm control panels on the east side of the embassy compound are not connected to Post One. Rather, these seven control panels are on a separate network connected to a guard post staffed by contractor security guards on the east side of the compound. Engineers in OBO's Office of Fire Protection told PAE that this configuration is inconsistent with OBO standards and that ideally all fire alarm control panels on the embassy compound should be connected to the Post One communications center.

According to OBO officials, because the fiber optic cable network is part of a larger project involving the construction of multiple buildings and facilities, there is no requirement to install a redundant path until the end of the entire construction project, which is currently scheduled to be completed in March 2019. Furthermore, according to OBO officials, because the seven fire alarm control panels on the east side of the embassy compound are in temporary structures, there is likewise no requirement that those structures be connected to Post One. Notwithstanding OBO's position, OIG made two recommendations to Embassy Kabul, in coordination with OBO, to take immediate actions to correct the identified deficiencies because they pose potential risks to the safety of embassy personnel and property.

Embassy Kabul deferred to OBO on the recommendations, stating that OBO has jurisdictional authority over the report's recommendations. OIG accepted the transfer of the action office of primary responsibility from Embassy Kabul to OBO and changed the recommendations accordingly. OBO did not concur with Recommendation 1, which called for the immediate establishment of a separate redundant path for the fire alarm system. OIG considers this recommendation unresolved and will track its implementation during the audit compliance process. OBO neither agreed nor disagreed with Recommendation 2 but made a determination, as OIG recommended, regarding the seven fire alarm control panels on the east side of the embassy compound. OIG therefore considers this recommendation closed, although, as described in more detail subsequently, OIG remains concerned regarding the safety issues implicated by the current situation. A synopsis of OBO's comments to the recommendations and OIG's reply follow each recommendation in the Audit Results section of this report. In addition to comments related to the recommendations, OBO provided general and technical comments to a draft of this report. Embassy Kabul's and OBO's comments are reprinted in their entirety in Appendix A and B, respectively. OIG's replies to OBO's general and technical comments are presented in Appendix C.