

SIGAR

Special Inspector General for
Afghanistan Reconstruction

SIGAR 19-16 Inspection Report

Marshal Fahim National Defense University: Phase III Construction Generally Met Contract Requirements, but Five Deficiencies and Inadequate Maintenance Increase Safety Risks for Building Occupants



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Special Inspector General for Afghanistan Reconstruction

WHAT SIGAR REVIEWED

In September 2008, the Air Force Center for Engineering and the Environment awarded contracts to construct facilities at the Afghan National Army's (ANA) Marshal Fahim National Defense University (MFNDU). Construction was completed in three phases under four contracts. This report focuses on the phase III construction.

The U.S. Army Corps of Engineers (USACE) awarded two contracts for the phase III construction: one to State Corps Limited and the other to Assist Consultants Incorporated. In July 2012, USACE awarded a \$24.6 million firm-fixed-price contract to State Corps to design and construct 8 buildings and 29 support facilities and other items. After 44 modifications, the contract's value increased by \$9.7 million to \$34.3 million. In February 2013, USACE awarded a \$15.4 million firm-fixed-price contract to Assist Consultants to design and construct 13 buildings and 20 support facilities and other items. After 21 modifications, the contract's value increased by \$3 million to \$18.4 million. The final value of the MFNDU phase III construction was \$52.7 million and included the construction of 21 buildings and 49 support facilities and other items.

By July 2015, the Combined Security Transition Command-Afghanistan (CSTC-A) had accepted and transferred all phase III buildings and facilities to the Afghan Ministry of Defense (MOD). The 1-year warranties expired in 2016.

The objectives of this inspection were to determine whether the MFNDU phase III buildings and facilities (1) were constructed according to contract requirements and applicable construction standards, and (2) are being used and maintained.

January 2019

Marshal Fahim National Defense University: Phase III Construction Generally Met Contract Requirements, but Five Deficiencies and Inadequate Maintenance Increase Safety Risks for Building Occupants

SIGAR 19-16 INSPECTION REPORT

WHAT SIGAR FOUND

During five site visits to the MFNDU between November 2017 and August 2018, SIGAR found that State Corps and Assist Consultants generally built the phase III buildings and facilities according to contract requirements and technical specifications. However, SIGAR found five deficiencies that create safety risks for building occupants. Specifically, SIGAR found that State Corps and Assist Consultants installed noncertified fire doors in all 21 phase III buildings, instead of certified doors as required by the contracts. Noncertified fire doors increase the risk of injury or death for building occupants should a fire occur. SIGAR also found that State Corps and Assist Consultants installed lightning protection systems in only 3 of 21 buildings, even though the systems were required in all buildings. Finally, SIGAR found that Assist Consultants did not install seismic bracing on 20 119-gallon water heaters that required this bracing; welded propane gas supply pipes together instead of using the threaded fittings as required; and installed threaded connectors instead of the required flexible quick disconnect connectors on the stoves in the dining facility.

SIGAR also found that the ANA was using all of the MFNDU phase III buildings and facilities, except for the wastewater treatment plant. The phase III wastewater treatment plant was constructed to augment the wastewater treatment plant built under phase I should the number of personnel at the MFNDU exceed 12,000. However, the phase I wastewater treatment plant stopped working in 2015 due to a lack of maintenance, and the phase III system has never been operational. According to the MFNDU facility manager, there is not sufficient funding to maintain the phase III wastewater treatment plant once it becomes operational. Because the MFNDU does not have a functioning wastewater treatment plant, the ANA is discharging untreated wastewater into ditches that flow toward a nearby village. This could potentially contaminate the village's water supply.

In addition, SIGAR found that the phase III buildings were not being well maintained. SIGAR found broken and missing door lock assemblies, nonfunctioning smoke detectors, and empty and counterfeit fire extinguishers in all 21 buildings. SIGAR also found counterfeit fire extinguishers but could not determine whether they were installed during construction or replaced after CSTC-A turned the facilities over to the MOD. The MFNDU facility manager told SIGAR that the MOD, which has been responsible for operating and maintaining the phase III facilities since 2015, has not provided sufficient funds to purchase equipment and supplies to maintain the buildings and facilities. In 2018, CSTC-A and the MOD agreed that the ministry would establish repair and maintenance policies and procedures, and guidelines for hiring facility engineers, developing training, and awarding repair and maintenance contracts.

Because the Afghan government has been responsible for operating and maintaining the MFNDU's phase III buildings and facilities since 2015, the MOD has agreed to address facility maintenance, and CSTC-A has informed the MOD of the safety risks, SIGAR is not making any recommendations in this report.



SIGAR

Office of the Special Inspector General
for Afghanistan Reconstruction

January 28, 2019

The Honorable Patrick M. Shanahan
Acting Secretary of Defense

General Joseph L. Votel
Commander, U.S. Central Command

General Austin Scott Miller
Commander, U.S. Forces-Afghanistan and
Commander, Resolute Support

Lieutenant General Todd T. Semonite
Commanding General and Chief of Engineers
U.S. Army Corps of Engineers

Lieutenant General James E. Rainey
Commander, Combined Security Transition Command-Afghanistan

This report discusses the results of SIGAR's inspection of the phase III construction of the Afghan National Army's (ANA) Marshal Fahim National Defense University (MFNDU). The U.S. Army Corps of Engineers (USACE) awarded two contracts for phase III. In July 2012, USACE awarded a \$24.6 million firm-fixed-price contract to State Corps Limited to design and construct 8 buildings and 29 support facilities and other items. After 44 modifications, the value of the contract increased by \$9.7 million to \$34.3 million. In February 2013, USACE awarded a \$15.4 million firm-fixed-price contract to Assist Consultants Incorporated to design and construct 13 buildings and 20 support facilities and other items. The value of this contract increased by \$3 million to \$18.4 million after 21 modifications. The final value of the MFNDU phase III construction was \$52.7 million and included the construction of 21 buildings and 49 support facilities and other items.

During our 2017 and 2018 site visits, we found that the phase III construction generally complied with contract requirements. However, we found that State Corps and Assist Consultants did not install certified fire doors, lightning protection systems, or seismic bracing on water heaters as required. In addition, Assist Consultants used noncompliant connections on the dining facility's propane supply pipes and installed noncompliant hose connectors on kitchen stoves. These deficiencies have created safety risks for building occupants. We found that the phase III buildings and facilities were being used, with the exception of the wastewater treatment plant, which has never been used. However, the buildings were not being well maintained. In 2018, the Combined Security Transition Command-Afghanistan (CSTC-A) and the Afghan Ministry of Defense agreed that the ministry would establish repair and maintenance policies and procedures, and guidelines for hiring facility engineers, developing training, and awarding repair and maintenance contracts.

Because the Afghan government has been responsible for operating and maintaining the MFNDU's phase III buildings and facilities since 2015, the ministry has agreed to address facility maintenance, and CSTC-A has informed the ministry of the safety risks, we are not making any recommendations in this report.

We provided a draft of this report to the Department of Defense for review and comment. USACE provided written comments, which are reproduced in appendix III. In the comments, USACE disagreed with some of the deficiencies we identified and disputed whether certain conditions we observed constitute safety risks.



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However, we maintain that the five deficiencies did result from noncompliance with the contracts and have created safety risks for ANA personnel. In addition, the U.S. Central Command provided technical comments.

We conducted this inspection under the authority of Public Law No. 110-181, as amended, and the Inspector General Act of 1978, as amended; and in accordance with the *Quality Standards for Inspection and Evaluation*, published by the Council of the Inspectors General on Integrity and Efficiency.

John F. Sopko
Special Inspector General
for Afghanistan Reconstruction

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ABBREVIATIONS

ANA	Afghan National Army
CSTC-A	Combined Security Transition Command-Afghanistan
DFAC	dining facility
IBC	International Building Code
MFNDU	Marshal Fahim National Defense University
MOD	Ministry of Defense
NFPA	National Fire Protection Association
USACE	U.S. Army Corps of Engineers

In September 2008, the Air Force Center for Engineering and the Environment awarded the first of four contracts to construct facilities at the Afghan National Army's (ANA) Marshal Fahim National Defense University (MFNDU) in Kabul.¹ The four contracts correspond to three phases of work. The Department of Defense funded the initial contracts for all three phases through the Afghanistan Security Forces Fund, while the completion of phase II was funded through the NATO Trust Fund.² The MFNDU includes the National Military Academy, the ANA Officer's Academy, a Non-Commissioned Officer's Academy, and a Joint Services Academy. This report focuses on our inspection of the phase III construction.³

The U.S. Army Corps of Engineers (USACE) awarded two construction contracts for the MFNDU phase III construction. On July 25, 2012, USACE awarded a \$24.6 million firm-fixed-price contract to State Corps Limited, an Afghan company, to design and construct five barracks, a headquarters building, a classroom building, a small arms storage building, a wastewater treatment plant, and multiple support facilities, such as a water distribution system and a communications system. USACE modified the contract 44 times, increasing its value by \$9.7 million to \$34.3 million.⁴ The Combined Security Transition Command-Afghanistan (CSTC-A) transferred the facilities to the Afghan Ministry of Defense (MOD) in June and July 2015, and the warranty expired on May 11, 2016. Appendix I provides a listing of the required phase III MFNDU buildings, support facilities, and other items

On February 22, 2013, USACE awarded a \$15.4 million firm-fixed-price contract to Assist Consultants Incorporated, an Afghan company, to design and construct six barracks, a library, a dining facility (DFAC), a DFAC dry storage building, a gymnasium, a laundry building, two assembly buildings, and multiple support facilities, such as a storm sewer system and a sanitary sewage collection system. USACE modified the contract 21 times, increasing its value by \$3 million to \$18.4 million.⁵ CSTC-A transferred the facilities to the MOD on July 14, 2015, and the warranty expired on July 13, 2016. The final value of the MFNDU phase III construction was \$52.7 million.

The objectives of this inspection were to determine whether the MFNDU phase III buildings and facilities (1) were constructed according to contract requirements and applicable construction standards, and (2) are being used and maintained.

We conducted our work in Kabul, Afghanistan, from July 2017 through January 2019, in accordance with the *Quality Standards for Inspection and Evaluation*, published by the Council of the Inspectors General on Integrity and Efficiency. The engineering assessment was conducted by our professional engineers in accordance with the National Society of Professional Engineers' *Code of Ethics for Engineers*. Appendix II contains a detailed discussion of our scope and methodology.

¹ On October 1, 2012, the Air Force Center for Engineering and the Environment, the Air Force Civil Engineer Support Agency, and the Air Force Real Property Agency merged to become the Air Force Civil Engineer Center.

² The Air Force Civil Engineer Center initially awarded the MFNDU phase II construction contract using Combined Security Transition Command-Afghanistan funding, but the resolicited completion contract was funded using German and Australian contributions to the NATO Trust Fund.

³ We issued an inspection report on MFNDU's phase I construction in September 2018. See SIGAR, *Marshal Fahim National Defense University: Phase I Construction Generally Met Contract Requirements, but Non-Compliant Fire Doors and Inadequate Maintenance Place Building Occupants at Risk*, SIGAR 18-76-IP, September 30, 2018.

⁴ The modifications included additional requirements for contractor-furnished material for \$2.8 million, the expansion of an entry control point for \$1.5 million, and upgraded exterior stucco finishes for all buildings for \$1.3 million.

⁵ The modifications included upgraded insulation and stucco finishes of building exteriors for \$1 million, additional requirements for contractor-furnished material for \$1 million, and the installation of additional low-voltage cables for \$0.4 million.

THE MFNDU PHASE III CONSTRUCTION GENERALLY MET CONTRACT REQUIREMENTS, BUT FIVE DEFICIENCIES CREATE SAFETY RISKS

During our five site visits to the MFNDU between November 1, 2017, and August 15, 2018, we found that State Corps and Assist Consultants generally built the phase III buildings and support facilities according to contract requirements and technical specifications. For example, we found that the 11 barracks were constructed with the required ceiling fans, doors and door hardware, windows, and mechanical equipment such as heating, ventilation, and air conditioning units. We also found that the lighting fixtures and electrical outlets were installed and working, and that the kitchen in the DFAC was built according to the required size. However, we found five deficiencies involving noncertified fire doors, lack of lightning protection systems, lack of seismic bracing for water heaters, noncompliant connections for propane supply lines, and noncompliant hose connectors on the stoves in the DFAC kitchen. Each of these deficiencies creates safety risks.

State Corps and Assist Consultants Installed Noncertified Fire Doors That Could Result in Injury or Death in the Event of a Fire

Both MFNDU phase III construction contracts required State Corps and Assist Consultants to install certified fire doors in all 21 buildings in accordance with the International Building Code (IBC) and National Fire Protection Agency (NFPA) standards. The IBC requires fire door manufacturers to have their products tested and certified to meet NFPA standards by one of three independent testing and certification agencies: Underwriters Laboratories, Factory Mutual Engineering and Research, or Warnock Hersey International. The IBC also requires the fire door manufacturer to affix a permanent label to the door at the factory showing the manufacturer's name, the door's fire protection rating in minutes, and the certifying agency's name or trademark logo.⁶ Further, the IBC and NFPA require a threshold with each fire door assembly.⁷

USACE approved State Corps to install 662 fire doors manufactured by either Artella Ahsap Kapi Sistemleri, a Turkish firm, or Abbasian Noor Construction Company, an Afghan firm.⁸ In addition, USACE approved Assist Consultants to install 748 fire doors manufactured by Abbasian Noor Construction Company. However, we determined that neither Artella Ahsap Kapi Sistemleri nor Abbasian Noor Construction Company was certified by one of three certification agencies to manufacture fire doors. Further, during our site visits, we randomly selected and examined 10 doors from each of the 21 buildings—8 buildings that State Corps constructed and 13 that Assist Consultants constructed—requiring fire doors, and found that none of the doors complied with the IBC or NFPA standards.⁹ Specifically, we found that the door labels (1) did not provide fire rating information or display the name and trademark logo of a certifying agency, or (2) were painted over and could not be read (see photos 1, 2, and 3). We also found that none of the doors had the required threshold (see photo 4).

⁶ The fire protection rating indicates the length of time the door should continue to function as an effective smoke and flame barrier during a fire.

⁷ A threshold is the plate on the bottom of a doorframe that creates a tight fit between the door and the floor. A fire door assembly is a combination of a fire door, doorframe, hardware, and other accessories that together provide a specific degree of fire protection. For this report, we use the term "fire door" to refer to all components of the fire door assembly.

⁸ The Artella Ahsap Kapi Sistemleri fire doors had labels that read "Yangin Dayanimli Kaplar" which translates from Turkish to English as "Wooden Fire Door." The company was identified by their web address, www.artella.com.tr, visible on the label.

⁹ SIGAR has identified other construction projects where the U.S. government accepted noncertified doors even though the contracts required certified fire doors. For example, see SIGAR, *Afghan Ministry of Interior Headquarters Project: Phases 1 and 3 Experienced Construction Deficiencies, Poor Oversight, and Increased Costs*, SIGAR 18-35-IP, March 23, 2018; and SIGAR, *Afghan National Army's Ground Forces Complex: Construction Generally Met Contract Requirements, but More Than \$400,000 May Have Been Wasted*, SIGAR 18-64-IP, July 30, 2018.

Photo 1 - Door Label with No Fire Rating or Name and Logo of a Certifying Agency



Source: SIGAR, November 2017

Photo 2 - Door Label with No Name and Logo of a Certifying Agency



Source: SIGAR, November 2017

Photo 3 - Door with Label Painted Over



Source: SIGAR, November 2017

Photo 4 - Door without Threshold



Source: SIGAR, November 2017

Fire doors are intended to protect building occupants from the spread of smoke and flames for the time that the specifications require. The noncompliant fire doors put MFNDU staff, students, and visitors at risk because the doors may not provide the required fire and smoke protection. Further, the substitution of noncompliant doors and doors without thresholds may have resulted in USACE overpaying State Corps and Assist Consultants. However, we could not determine or quantify any overpayment amount because the firm-fixed-price contracts and the contractors' invoices submitted do not identify the cost of the doors.

In October 2016, we alerted USACE and other Department of Defense officials of a serious safety issue involving noncertified fire doors installed at the Ministry of Interior headquarters in Kabul, Afghanistan.¹⁰ We suggested that USACE take steps to identify other completed and ongoing USACE construction projects in Afghanistan that required the installation of certified fire doors, and if noncertified doors were installed, take appropriate action to replace those doors. In May and July 2017, USACE issued bulletins to multiple recipients, including CSTC-A, expressing concern about the number of fire doors installed across Afghanistan that did not

¹⁰ See SIGAR, *Fire Doors at the MOI Compound in Kabul*, SIGAR 17-2-AL, October 5, 2016.

meet NFPA requirements.¹¹ The bulletins summarized the primary features of proper fire door assemblies and their proper installation and use. In addition, in June 2018, CSTC-A sent a letter to the MOD stating that SIGAR's inspections found that fire safety standards and equipment did not exist as designed or had been circumvented in some facilities. The letter also stated that this included fire doors and fire extinguishers, which may not be present, and, as a result, may affect the ability for personnel to address fire hazards effectively. CSTC-A recommended that the MOD inspect all of its facilities and consider assigning a primary and alternate fire warden to identify and resolve fire safety issues at each facility. CSTC-A also provided the MOD with a recommended checklist for the fire wardens to complete monthly to ensure that personnel and facilities are not at undue risk. This fire safety checklist includes items to (1) ensure that fire alarm systems function and are tested regularly; (2) determine whether portable fire extinguishers are in their proper location, fully charged, and properly tagged; and (3) determine whether flammable/combustible liquids are stored in an approved cabinet.

State Corps and Assist Consultants Did Not Install Required Lightning Protection Systems

According to their contracts, State Corps was required to install lightning protection systems in all 8 buildings, and Assist Consultants was required to install lightning protection systems in all 13 buildings. We found that State Corps installed a lightning protection system in the headquarters building and small arms storage building, but did not install lightning protection systems in the six remaining buildings.¹² Similarly, we found that Assist Consultants installed a lightning protection system in the DFAC but did not install lightning protection systems in the other 12 buildings.¹³ The 18 buildings did not have the lightning protection systems installed because the design drawings did not include the systems as required by the contract. Without lightning protection systems, occupants could be at increased risk of injury or death if lightning strikes the building.

State Corps and Assist Consultants Did Not Install Seismic Bracing on the Water Heaters

According to their contracts, State Corps and Assist Consultants were required to install seismic bracing to anchor floor-mounted water heaters. However, during our site visits, we inspected 20 floor-mounted, 119-gallon water heaters and found that none had seismic bracing. The lack of seismic bracing creates a safety hazard because the heaters could tip over during an earthquake and cause flooding or damage electrical wiring.

¹¹ USACE Headquarters Transatlantic District, U.S. Army Corps of Engineers Bulletin, "Fire Door Assemblies," May 19, 2017, updated July 12, 2017.

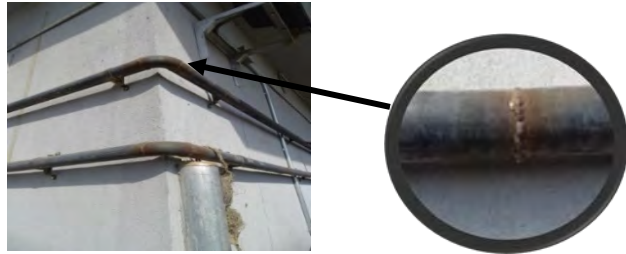
¹² The six buildings without lightning protection systems are the five barracks and the classroom building.

¹³ The 12 buildings without lightning protection systems are the 6 barracks, the 2 assembly buildings, the gymnasium, the laundry building, the library, and the DFAC's dry storage building.

Assist Consultants Used Noncompliant Connections on the DFAC Propane Supply Pipes

Assist Consultants' contract required the company to install 50-millimeter propane supply gas pipes in the DFAC. The NFPA requires pipes measuring 50 millimeters or less to be connected with threaded fittings.¹⁴ During our site visits, we found that Assist Consultants installed 50-millimeter propane supply gas pipes as required, but it welded the pipes together instead of using threaded fittings as required (see photo 5). In August 2018, USACE said its gas pipe installation met NFPA 58 requirements and was not a safety issue. However, we responded that the welded fittings do not comply with NFPA, which requires threaded fittings for pipes measuring 50 millimeters or less. These welded connections create a safety risk for personnel in the DFAC because the welded connections are more likely to form pores, or pinhole gaps, that result in gas leaks, which could cause an explosion and fire.

Photo 5 - Welded Propane Gas Supply Pipe Outside the DFAC Kitchen



Source: SIGAR, November 1, 2017

Assist Consultants Installed Noncompliant Hose Connectors on the DFAC Kitchen Stoves

Assist Consultants' contract required it to install flexible hoses with quick disconnect connectors on the 20 kitchen stoves in the DFAC that are connected to a gas supply line.¹⁵ However, during our site visits, we found that Assist Consultants did not install the flexible quick disconnect connectors to the propane gas burners on these stoves. Instead, Assist Consultants installed threaded connectors, which are more likely to deteriorate and develop gas leaks because the propane supply line is disconnected and reconnected frequently during stove cleaning and maintenance. This creates a safety hazard for personnel in the DFAC because a gas leak could cause an explosion and fire.

ALMOST ALL OF THE MFNDU PHASE III BUILDINGS AND FACILITIES ARE BEING USED, BUT THEY ARE NOT WELL MAINTAINED

Almost All Buildings and Facilities Are Being Used, Except for the Wastewater Treatment Plant

During our site visits, we found that students and staff were using almost all of the the MFNDU phase III buildings and support facilities. For example, they were using the barracks, the classroom building, the DFAC, the gymnasium, and the library. However, the wastewater treatment plant was not being used.¹⁶

We found that Assist Consultants constructed the phase III wastewater treatment plant as required by the contract and connected it to the MFNDU's sewer system. However, according to the MFNDU facility manager, the wastewater treatment plant has never been used. The facility manager told us the phase I wastewater treatment plant had sufficient capacity to process all wastewater at the facility for up to 12,000 people. As of

¹⁴ A threaded fitting connects two pipes together by screwing the fitting into the ends of each pipe.

¹⁵ Quick disconnect devices can be easily disconnected and reconnected without any tools, thereby reducing wear and tear on the hoses when they are cleaned or repaired.

¹⁶ A wastewater treatment plant converts raw sewage into water clean enough to reenter a lake, stream, or aquifer without causing harmful environmental or ecological consequences.

September 2018, there were approximately 6,000 people at the MFNDU. The facility manager said that when the phase I wastewater treatment plant reached capacity, the MFNDU planned to turn the phase III wastewater treatment plant on and operate both concurrently.

However, the facility manager told us the phase I wastewater treatment plant stopped working in 2015 because of broken equipment, including pumps and filters, and a lack of supplies, such as chlorine. The facility manager said the MFNDU does not have sufficient funds to purchase replacement equipment or supplies. When we asked why the MFNDU did not divert sewage to the phase III wastewater treatment plant when the phase I wastewater treatment plant failed, the facility manager said the MFNDU did not have sufficient funds to maintain the phase III wastewater treatment plant once it becomes operational. Because the wastewater treatment plants are not operational, the ANA is pumping raw sewage into a storage tank in the phase I wastewater treatment plant and discharging it into ditches that flow toward a nearby village. The untreated sewage is a health risk to MFNDU personnel and could create health risks for the villagers if it reaches the village's water source.

The Phase III Buildings Have Maintenance Issues

During our site visits, we found broken or missing interior door lock assemblies (see photo 6), empty fire extinguishers (see photo 7), and nonoperational smoke detectors in all of the phase III buildings. Not maintaining these items exposes building occupants to increased safety risks in the event of a fire. We also found that all of the phase III buildings contained counterfeit fire extinguishers. We inspected 190 of the 306 required fire extinguishers in all of the 21 phase III buildings and found that each was counterfeit. For example, all of the fire extinguishers had Buckeye Equipment Company labels displaying duplicate serial numbers (see photo 8). Genuine Buckeye fire extinguishers have a unique serial number on their labels. We could not determine whether State Corps and Assist Consultants installed the counterfeit fire extinguishers during construction, resulting in a construction deficiency, or whether someone replaced them after CSTC-A transferred phase III to the MOD. Either way, the counterfeit fire extinguishers expose building occupants to increased safety risks because they may not work properly in the event of a fire. As mentioned earlier, in April 2017, USACE issued a bulletin to multiple recipients, including CSTC-A, expressing concern about the number of counterfeit fire extinguishers installed in Afghanistan since 2012.¹⁷

Photo 6 - Missing Door Lock



Source: SIGAR, November 1, 2017

Photo 7 - Empty Fire Extinguisher



Source: SIGAR, November 1, 2017

¹⁷ USACE Headquarters Transatlantic District, U.S. Army Corps of Engineers Bulletin, "Counterfeit Hand-held Fire Extinguishers in Afghanistan," April 5, 2017.

Photo 8 - Fire Extinguishers with Identical Serial Numbers



Source: SIGAR, November 1, 2017

The MFNDU facility manager told us the MOD provides annual maintenance funds for the MFNDU, but said these funds are not sufficient to cover all of the MFNDU's maintenance needs. The facility manager also said the MOD has denied multiple requests from personnel at MFNDU for additional funding.

Since 2014, CSTC-A has provided the MOD with funding to operate and maintain its facilities through annual commitment letters. However, CSTC-A said it does not control how the MOD allocates those funds. In March 2018, the Department of Defense Office of Inspector General reported that CSTC-A does not manage and oversee U.S. funding provided to the MOD effectively, and recommended that the command identify and implement a more effective method to do so.¹⁸ In the May 2018 financial commitment letter, CSTC-A and the MOD agreed that the MOD would establish repair and maintenance policies and procedures, and guidelines for hiring facility engineers, developing training, and awarding repair and maintenance contracts.

CONCLUSION

Although most of the MFNDU phase III construction was completed according to contract requirements, five deficiencies have created safety hazards. Most significantly, the installation of noncompliant fire doors raises concerns because they increase the building occupants' risk of injury or death should a fire occur, as do the broken or missing interior door lock assemblies, nonoperational smoke detectors, and empty and counterfeit fire extinguishers. In response to these deficiencies, which we have noted in several inspections, USACE issued bulletins to help ensure that these safety hazards are identified. In addition, CSTC-A informed the MOD of potential hazards associated with noncompliant fire safety equipment at the MFNDU and other facilities in Afghanistan, and provided facility officials a checklist to identify and address potential safety issues.

The nonoperational wastewater treatment plants also create safety risks for MFNDU personnel and nearby residents. We were told that the MFNDU has not had sufficient funds to maintain the wastewater treatment plants or other buildings and support facilities at the site. Proper maintenance is critical to protect the United States' almost \$53 million investment in the MFNDU phase III facilities. The May 2018 agreement between CSTC-A and the MOD for the ministry to establish repair and maintenance policies and procedures, and guidelines for hiring facility engineers, developing training, and awarding repair and maintenance contracts is a step in the right direction.

¹⁸ See Department of Defense Office of Inspector General, *Summary Report on U.S. Direct Funding Provided to Afghanistan*, DODIG-2018-090, March 21, 2018.

Because the Afghan government has been responsible for operating and maintaining the MFNDU phase III buildings and facilities since 2015, and the MOD has agreed to address facility maintenance, we are not making any recommendations in this report.

AGENCY COMMENTS

We provided a draft of this report to the Department of Defense for review and comment. USACE provided written comments, which are reproduced in appendix III. In addition, the U.S. Central Command provided technical comments.

In the comments, USACE disagreed with some of the deficiencies we identified and disputed whether certain conditions we observed constitute safety risks. USACE also stated that it has no remedy to resolve these deficiencies because the contracts were completed, accepted, the warranty expired, and the contract closed. As noted in a draft of this report, because the Afghan government has been responsible for operating and maintaining the MFNDU phase III buildings and facilities since 2015, we did not make any recommendations.

In response to fire door and fire extinguisher noncompliance issues we previously reported on other inspections, USACE stated that it performed an extensive review of the fire door issue and concluded that the doors installed in the MFNDU phase III buildings met CSTC-A's Afghanistan National Security Force Construction Standards, which were applicable at the time the contracts were awarded. USACE also stated that it made "positive adjustments" to the contract design process to ensure that "current designs fully comply with published standards for host nation facilities." USACE added that it "implemented a training program for its project engineers, quality assurance representatives and local national quality assurance personnel" that entailed a "comprehensive review of fire door assemblies and the identification of counterfeit hand-held fire extinguishers." USACE concluded by stating that improvements in resolving these noncompliance issues have been made and that it believes improvement will continue on current and future projects. However, USACE did not incorporate the CSTC-A Afghanistan National Security Force Construction Standards into the contracts. Therefore, the contracts still required State Corps and Assist Consultants to install certified fire doors that complied with NFPA standards.¹⁹ The doors the contractors installed did not meet these standards and, as a result, did not comply with the terms of the contracts.

USACE stated that the contracts required lightning protection systems in only 3 of the 21 buildings. According to USACE, systems were installed in two of the three buildings, while the third—the small arms storage building—did not have a system installed. We found that the lightning protection systems were installed in the headquarters, DFAC, and small arms storage buildings as required by the contract, but disagree that the contracts did not require lightning protection systems for the other 18 buildings. The systems were referenced in the contract requirements, but were not installed because they were omitted from the designs. However, the contract specifies that the contract award document and referenced publications therein take precedence over design drawings; therefore, the apparent omission of the lightning protection systems from the drawings did not relieve the contractors of the requirement to install the systems.

USACE stated that it agreed the contracts required seismic bracing to be installed on the water heaters. However, USACE said it did not believe that the lack of bracing poses any risk to life or safety. We disagree. We calculate that each of the twenty 119-gallon water heaters weigh about 1,000 pounds when full. If a water heater of that size falls, there is a high risk that it will result in a safety incident or possible damage to plumbing or other systems installed in the same location.

¹⁹ USACE, Phase 3a Contract No. W912DQ-12-C-4008, awarded to State Corps, Specification Section 08 71 00, "Door Hardware 1.1," July 25, 2012; and USACE, Phase 3b Contract No. W912DQ-13-C-4007, awarded to Assist Consultants, Specification Sections 08 11 13-3.1.3, "Fire and Smoke Doors and Frames Installation," and 2.6.1, "Fire and Smoke Doors and Frames Labels, February 22, 2013.

USACE stated that it agreed that the contract required DFAC propane supply pipes 50 millimeters or smaller to be threaded, but that the pipes installed were welded instead. USACE stated that although the contractor did not meet contract requirements, it did meet another NFPA code requirement for pressure testing of pipes. USACE added the propane system met this code because it was pressure-tested, no leaks were detected, and it does not pose any safety hazards. However, USACE did not provide any documentation of pressure testing during our inspection and in its comments. As a result, we maintain that these noncompliant pipes do pose a safety hazard.

USACE stated that it disagreed that flexible hoses with quick disconnect connectors to propane gas burners were required by the contract or NFPA. However, both contracts required final gas connections to kitchen ranges using flexible hoses and quick disconnect connectors to afford access to coupling and to permit the movement of equipment for cleaning in accordance with standards issued by the American National Standards Institute and the Canadian Standards Association.²⁰

²⁰ A coupling is a short pipe used to join or weld two pipes together. USACE, Phase 3b Contract No. W912DQ-13-C-4007, awarded to Assist Consultants, Specification Sections 23 11 25-2.2.8a, "Flexible Connections," and 3.4.3, "Final Gas Connection," February 22, 2013.

APPENDIX I - MARSHAL FAHIM NATIONAL DEFENSE UNIVERSITY PHASE III BUILDINGS, SUPPORT FACILITIES, AND OTHER ITEMS

The U.S. Army Corps of Engineers' contracts with State Corp Limited and Assist Consultants Incorporated for the phase III construction of the Marshal Fahim National Defense University required the companies to design and construct 21 buildings and 49 support facilities and other items, as listed in table 1.

Table 1 - MFNDU Phase III Buildings, Support Facilities, and Other Items

Buildings, Support Facilities, and Other Items	Contractor and Quantity	
	State Corps	Assist Consultants
Barracks	5	6
Headquarters building	1	-
Classroom building	1	-
Small arms storage	1	-
Library	-	1
Dining facility (DFAC)	-	1
DFAC dry storage building	-	1
Assembly buildings	-	2
Laundry building	-	1
Gymnasium	-	1
Total Number of Buildings	8	13
Wastewater treatment plant	1	-
Weapons cleaning area	1	-
Training platforms	6	-
Athletic field	1	3
Parade ground with review stand	-	1
Flag poles	3	-
Roads, walkways, and parking	1	1
Building exterior stone veneer	1	1
Fencing and barricades	1	1
Trash collection point	4	6
Obstacle course	4	-
Electrical power	1	-
Campus signage	1	1
Water distribution system	1	1
Storm sewer system	1	1
Sanitary sewage collection system	1	1
Communications system	1	-
Propane storage shed	-	1
Wood storage shed	-	1
Exterior kitchen wood stove	-	1
Total Number of Support Facilities and Other Items	29	20

Source: USACE's contracts for MFNDU phase III.

APPENDIX II - SCOPE AND METHODOLOGY

This report provides the results of SIGAR's inspection of the phase III construction of buildings, support facilities, and other items at the Marshal Fahim National Defense University in Kabul. The objectives of this inspection were to determine whether the phase III buildings and facilities (1) were constructed according to contract requirements and applicable construction standards, and (2) are being used and maintained.

Specifically, we:

- reviewed contract documents, design submittals, and other relevant project documentation;
- conducted an engineering assessment of the project drawings and construction methods used;
- interviewed U.S. and Afghan government officials concerning the project's construction, use, and maintenance; and
- conducted five site visits on November 1 and 29, 2017; December 4 and 6, 2017; and August 16, 2018.

We did not rely on computer-processed data in conducting this inspection. We considered compliance with laws and indicators of fraud, other illegal acts, and abuse, and their potential impact.

We conducted our inspection work in Kabul, Afghanistan, from July 2017 through January 2019. This work was conducted in accordance with the *Quality Standards for Inspection and Evaluation*, published by the Council of the Inspectors General on Integrity and Efficiency. The engineering assessment was conducted by our professional engineers in accordance with the National Society of Professional Engineers' *Code of Ethics for Engineers*.

We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our inspection objectives. We conducted this inspection under the authority of Public Law No. 110-181, as amended, and the Inspector General Act of 1978, as amended.

APPENDIX III - COMMENTS FROM THE U.S. ARMY CORPS OF ENGINEERS



DEPARTMENT OF THE ARMY
UNITED STATES ARMY CORPS OF ENGINEERS
TRANSATLANTIC DIVISION
201 PRINCE FREDERICK DRIVE
WINCHESTER, VIRGINIA 22602-4373

19 DEC 2018

SUBJECT: Response to Special Inspector General for Afghanistan Reconstruction (SIGAR) Draft Report (Project Code SIGAR-I-045b), Marshal Fahim National Defense University: Phase III Construction Generally Met Contract Requirements, but Five Deficiencies and Inadequate Maintenance Increase Safety Risks for Building Occupants

Mr. John F. Sopko
Special Inspector General for Afghanistan Reconstruction
1550 Crystal Drive, Suite 900
Arlington, VA 22202

Dear Mr. Sopko:

The U.S. Army Corps of Engineers (USACE) concurs with the subject draft report's finding that the Phase III buildings and facilities were generally built according to contract requirements and technical specification. Although there are no recommendations in the draft report, USACE is providing the following comments for clarification concerning the five deficiencies discussed in the draft report.

The fire door and fire extinguisher findings have been identified by SIGAR in past engagements and are relevant to our older projects. This project was completed in mid-2015. As a result of the fire door and fire extinguisher noncompliance issues identified by SIGAR during previous inspections, USACE Transatlantic Afghanistan District personnel performed an extensive review of the fire door issue and concluded the installed fire doors met the Combined Security Transition Command - Afghanistan, Afghanistan National Security Force Construction Standards applicable at the time the construction contracts were awarded. USACE has made positive adjustments to its processes by centralizing design review of reach back district products at the Transatlantic Middle East District to ensure that current designs fully comply with published standards for host nation facilities. In addition, USACE implemented a training program for our project engineers, quality assurance representatives and local national quality assurance personnel entailing a comprehensive review of fire door assemblies and identification of counterfeit hand-held fire extinguishers. We have seen improvement in resolving this issue and believe this will continue with current and future projects.

SIGAR indicates in the draft report that 21 buildings required lightning protection systems. Our detailed review of the design drawings for the two contracts found that only three buildings required lightning protection systems. Of the three buildings requiring lightning protection systems only two had the systems installed. The small

arms building should have had lightening protection but it was not installed. Because the contract has been completed, accepted, warranty expired, and closed USACE has no remedy to resolve this issue after over 3 years.

SIGAR's comments regarding the lack of seismic bracing are correct; the floor mounted water heaters discussed in the draft report were required to have seismic bracing but the seismic bracing was not installed. However, in our opinion, the lack of seismic bracing does not pose any risk to life or safety. Because the contract has been completed, accepted, warranty expired and closed USACE has no remedy to resolve this issue after over 3 years.

SIGAR's draft report indicates non-compliant connections on the dining facility propane supply pipes were installed by welding the pipes together instead of using threaded fittings as required. SIGAR is correct in that according to the contract all propane supply lines 50 mm or smaller should have threaded connections and not welded connections. The drawings indicate all propane supply lines outside of the building are 50 mm or smaller and were welded and not threaded connections. Although the performance of the contractor did not specifically meet the contract, the contractor did meet the code requirements of the National Fire Protection Association (Paragraph 6.11.3.5 and Table 6.11.3.5A) for piping under pressures of 125 psig (which applies to the system installed). During installation the propane system was pressure tested and no leaks were detected. As installed the system meets code requirements and does not pose any safety hazards.

SIGAR indicates in its draft report that the contractor did not install the flexible hoses with quick disconnect connectors to the propane gas burners on the stoves. Instead, the contractor installed threaded connectors, which, according to SIGAR, are more likely to deteriorate and develop gas leaks because the propane supply line is disconnected and reconnected frequently during stove cleaning and maintenance. SIGAR's assessment is incorrect. Quick disconnect connections are not required in the contract and are not required by code. The contract does require flex connections per sheet P-903 of the contract drawings.

My point of contact for this response is Mr. George Sullivan, Transatlantic Division Internal Review Auditor. He may be reached by e-mail at George.a.sullivan@usace.army.mil or by telephone at 202-761-4573.

Sincerely,



MARK C. QUANDER
Colonel (P), EN
Commanding

APPENDIX IV - ACKNOWLEDGEMENTS

Steven Haughton, Senior Inspection Manager

Michael Kamin, Inspector-in-Charge

Ahmad Javed Khairandish, Civil Engineer

Abdul Rahim Rashidi, Program Analyst

Yogin Rawal, Professional Engineer

This inspection was conducted
under project code SIGAR-I-045.

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