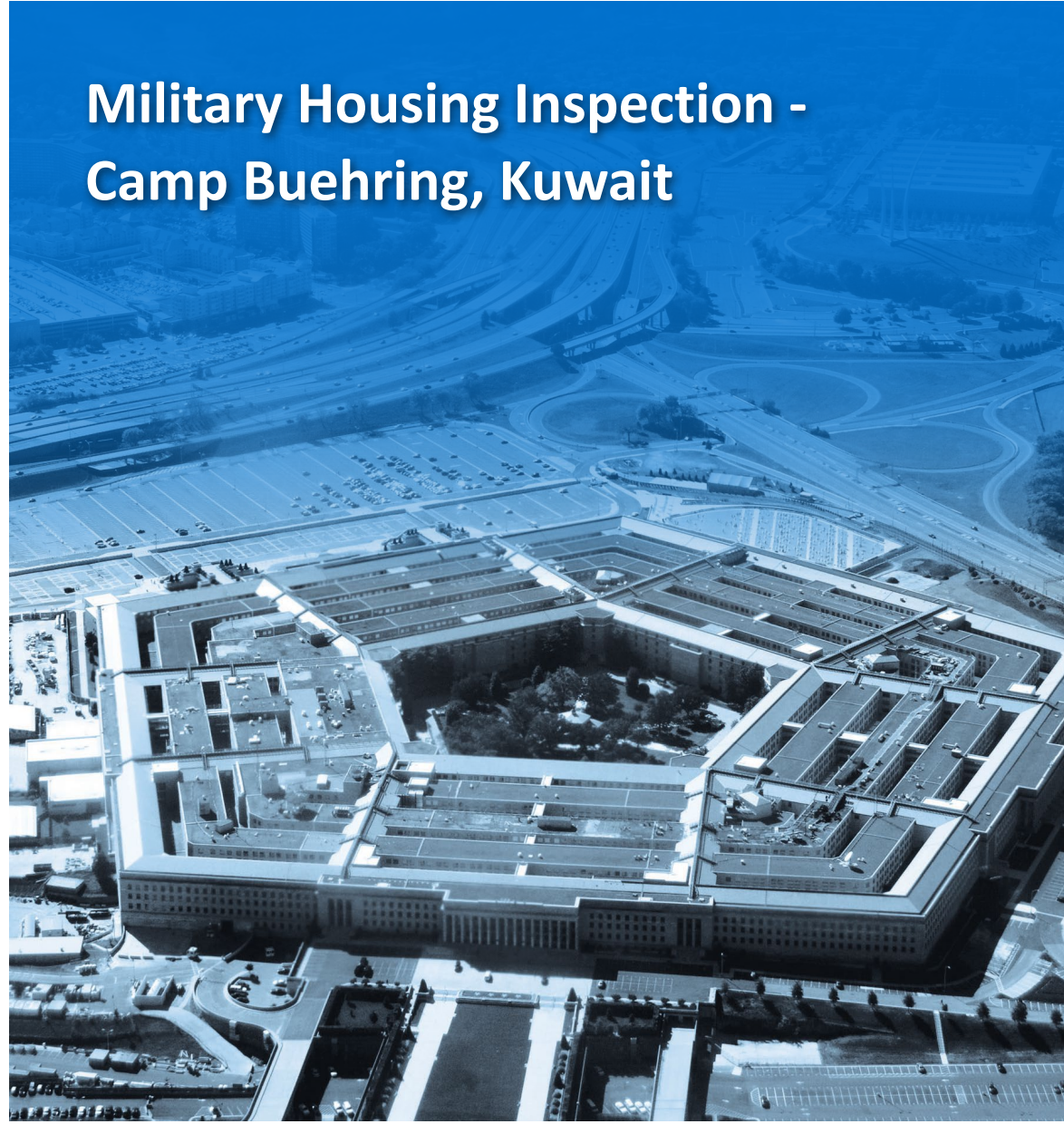




INSPECTOR GENERAL

U.S. Department of Defense

SEPTEMBER 30, 2016



Military Housing Inspection - Camp Buehring, Kuwait

INTEGRITY ★ EFFICIENCY ★ ACCOUNTABILITY ★ EXCELLENCE

INTEGRITY ★ EFFICIENCY ★ ACCOUNTABILITY ★ EXCELLENCE

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Results in Brief

Military Housing Inspection - Camp Buehring, Kuwait

September 30, 2016

Objective

Our objective was to inspect U.S. military-occupied facilities at Camp Buehring, Kuwait, to verify compliance with DoD health and safety policies and standards regarding electrical and fire protection systems.

Findings

We found significant deficiencies in electrical and fire protection systems during the physical inspections of the U.S. military-occupied facilities at Camp Buehring. We identified a total of 538 deficiencies that could affect the health, safety, and well-being of warfighters: 198 related to electrical systems and 340 related to fire protection systems. The majority of those deficiencies resulted from insufficient inspection, inadequate maintenance, lack of an effective maintenance and inspection plan, and ineffective project oversight.

In addition, Camp Buehring did not have any permanent, Government-employed master electricians or fire protection engineers. The maintenance contract does not require that the contractor perform electrical maintenance to any specific standard. Also, the contract inspection, testing, and maintenance requirements for fire alarm and fire protection systems do not reference the appropriate Unified Facilities Criteria.

Recommendations

We recommend that the Commander, U.S. Army Central (USARCENT), initiate the following remedies:

- Conduct a root cause analysis and implement a corrective action plan for all 538 deficiencies identified in this report.

Recommendations (cont'd)

- Create and execute a plan for ongoing inspection and maintenance of all U.S. military-occupied facilities at Camp Buehring and other locations where the Commander, Area Support Group Kuwait (ASG-KU), provides base operations support and inspections. Ensure that the buildings and the maintenance of these locations comply with applicable electrical and fire protection safety codes and standards.
- Revise the Kuwait Base Operations and Security Support Services (K-BOSSS) contract W52P1J-10-C-0062 Performance Work Statement (PWS) to ensure that electrical and fire protection systems comply with appropriate codes or standards.
- Provide staff from contracting officer's representative (COR) office with the technical assistance of a master electrician and a fire protection engineer at Camp Buehring to evaluate and inspect contractor performance (as required by the revised contract). The evaluation and inspection should ensure that all military housing and other structures comply with applicable electrical and fire protection codes.

Management Comments and Our Response

The Assistant Chief of Staff, Engineers, responding for USARCENT, agreed with all our findings and recommendations. He also provided a status of the deficiencies that had been corrected in the 5 months after the inspection, and indicated that corrective action will continue. However, while he agreed with the recommendations to revise the contract PWS to ensure that the contractor maintains the electrical, and fire protection systems to the appropriate codes, and criteria, he did not provide any details on how or when this would be accomplished. Therefore, we request that USARCENT provide details on the implementation of these recommendations including an expected completion date. See the Recommendations Table on the next page.

Recommendations Table

Management	Recommendations Requiring Comment	No Additional Comments Required
Commander, U.S. Army Central	C.1 and C.2	A.1, A.2, B.1, B.2, C.3, and C.4



**INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
4800 MARK CENTER DRIVE
ALEXANDRIA, VIRGINIA 22350-1500**

September 30, 2016

MEMORANDUM FOR COMMANDER, U.S. ARMY CENTRAL

SUBJECT: Military Housing Inspection - Camp Buehring, Kuwait (Report No. DODIG-2016-139)

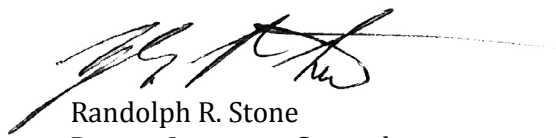
We are providing this report for your review and comment. We inspected U.S. military facilities at Camp Buehring, Kuwait, for compliance with DoD health and safety policies and standards regarding electrical and fire protection systems. This project relates to the overseas contingency operation, Operation INHERENT RESOLVE, and it was completed in accordance with our oversight responsibilities as described in Section 8L of the Inspector General Act of 1978, as amended.

We conducted this inspection in accordance with the Council of the Inspectors General on Integrity and Efficiency, "Quality Standards for Inspection and Evaluation." Our inspection identified a total of 538 deficiencies that could affect the health, safety, and well-being of the warfighters. The majority of the deficiencies identified during the inspections resulted from insufficient inspection, inadequate maintenance, lack of an effective maintenance and inspection plan, and ineffective project oversight. In addition, Camp Buehring did not have any permanent, Government-employed master electricians or fire protection engineers. Also, the maintenance contract does not require that the contractor perform electrical maintenance to any specific standard, and the inspection, testing, and maintenance requirements for fire alarm and fire protection systems do not reference the appropriate Unified Facilities Criteria.

We considered management comments on a draft of this report when preparing the final report. DoD Instruction 7650.03 requires that all recommendations be resolved promptly. Comments from the Assistant Chief of Staff, Engineers, responding for U.S. Army Central, partially addressed the recommendations; therefore, we request additional comments on Recommendations C.1 and C.2 by October 31, 2016.

Please send a PDF file containing your comments to [REDACTED]. Copies of your comments must have the actual signature of the authorizing official for your organization. We cannot accept the /Signed/ symbol in place of the actual signature. If you arrange to send classified comments electronically, you must send them over the SECRET Internet Protocol Router Network (SIPRNET).

Please direct questions regarding the content of this report to [REDACTED].


Randolph R. Stone
Deputy Inspector General
Policy and Oversight

cc:

Under Secretary of Defense for Acquisition, Technology, and Logistics
Under Secretary of Defense (Comptroller), Deputy Chief Information Officer
Commander, U.S. Central Command
Inspector General, Department of the Army

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Introduction

Objective

Our objective was to physically inspect U.S. military-occupied facilities at Camp Buehring, Kuwait, to verify compliance with health and safety policies and standards regarding electrical and fire protection systems. This project was conducted in support of the overseas contingency operation, Operation INHERENT RESOLVE and was completed in accordance with our oversight responsibilities, described in Section 8L of the Inspector General Act of 1978, as amended. See Appendix A for information about the scope and methodology.

Background

The DoD Office of Inspector General (OIG) regards the health and safety of the warfighter as a priority and has previously performed similar inspections of U.S. military-occupied facilities in Southwest Asia, Asia, the Middle East, and the United States. This inspection project verified whether the U.S. military-occupied facilities at Camp Buehring were in compliance with DoD health and safety policies and standards. This inspection was conducted onsite at Camp Buehring, Kuwait.

Camp Buehring, Kuwait

Camp Buehring is a desert camp located on the Udairi Range Complex 48 miles northwest of Kuwait City, the capital, which has 4.2 million inhabitants. Camp Buehring is approximately 25 miles from the Iraqi border. It was established as a temporary training camp, with joint training facilities for both U.S. and Kuwaiti military personnel.

Inspection Process and Criteria

We inspected U.S. military-occupied facilities at Camp Buehring to verify compliance with DoD health and safety policies and standards. We reviewed DoD policies and standards to determine which Unified Facilities Criteria (UFC) and National Fire Protection Association (NFPA) codes were applicable for the fire and electrical system safety inspection. Although the U.S. military has occupied the facilities at Camp Buehring since 2002, all housing facilities are designated as temporary (life expectancy of 5 years or less) or semipermanent (life expectancy of less than 10 years). We therefore inspected to the UFC 1-201-01, "Non-Permanent DoD Facilities in Support of Military Operations," January 1, 2013, for temporary and semipermanent facilities as opposed to UFCs for enduring facilities.

We also inspected to base policies, such as the Department of the Army, Area Support Group Kuwait (ASG-KU) Command Policy Memorandum 13, "Fire Prevention," August 13, 2015. See Appendix B for a list of inspection standards and criteria. We inspected housing facilities, which included buildings with internal and external room entries, trailer billets, tents, latrines, showers, and laundry and mechanical rooms. We also inspected the new Kuwaiti Energy Efficiency Project (KEEP) buildings; which provide energy-efficient, modular billeting.

Government contract administration policies and practices were not the focus of this inspection. However, the inspection team included an audit subject matter expert (SME) who reviewed the Kuwait-Base Operations and Security Support Services (K-BOSSS) contract W52P1J-10-C-0062 Performance Work Statement (PWS) with regard to electrical and fire protection requirements and interviewed the electrical and fire protection contracting officer's representatives (CORs). We also interviewed residents, maintenance personnel, and other installation SMEs. DoD OIG onsite inspectors were accompanied by representatives from the Directorate of Public Works (DPW) and the maintenance contractor. After our inspection was completed, we briefed the results to the installation commander and his staff, and provided them a draft copy of all deficiencies identified.

Overall Findings and Recommendations

We inspected 59 buildings and 178 rooms. We identified a total of 538 deficiencies: 198 in electrical and 340 in fire protection. We provided draft copies of all deficiencies to U.S. Army Central (USARCENT) for review and comment and to expedite corrective actions. Any individual or combination of these deficiencies increases the risk of shock, fire, injury, and the loss of life or property. We found that multiple electrical and fire protection systems for U.S. military-occupied facilities at Camp Buehring were insufficient, unreliable, or unsafe. The majority of the deficiencies were the result of insufficient inspection, inadequate routine maintenance, lack of an effective maintenance and inspection plan, and ineffective project oversight. In addition, Camp Buehring did not have any permanent, Government-employed master electricians or fire protection engineers.

Army Contracting Command Rock Island awarded a cost-plus-award-fee contract W52P1J-10-C-0062 on September 29, 2010, to provide services in support of ASG-KU. If all option periods are exercised, the period of performance for this contract can extend to March 28, 2017.

The inspection team conducted a review of the K-BOSS PWS with regard to electrical and fire protection system-related requirements. The PWS did not require that the contractor perform electrical maintenance to any specific standard. Also, the PWS inspection, testing, and maintenance requirements for fire alarm and fire protection systems did not reference the appropriate UFC criteria.

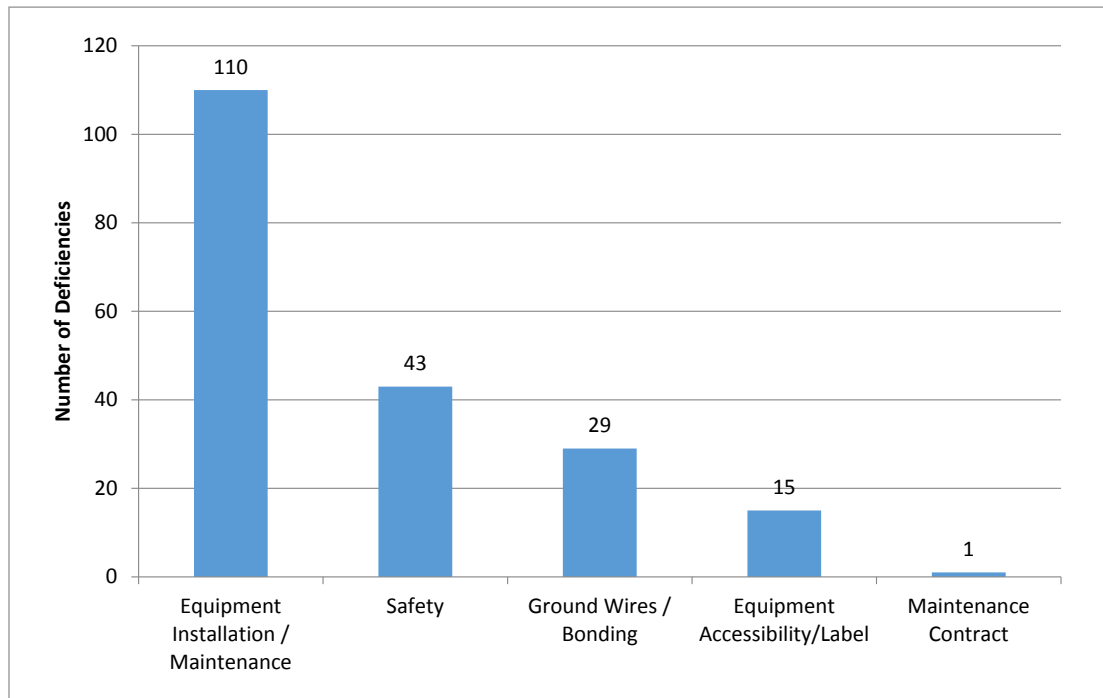
Finding A

Camp Buehring Electrical System Deficiencies

We identified 198 electrical code deficiencies. These deficiencies could have been mitigated if USARCENT had ensured that electrical installation and maintenance was performed as required by applicable UFC codes and standards and base policy. As a result, these deficiencies pose an increased risk of shock, electrocution, and fire.

We documented 198 deficiencies related to electrical systems (see Figure 1). The deficiencies were related to equipment installation and maintenance, safety, ground wires and bonding, equipment accessibility and label, and maintenance contract. Maintenance contract is a deficiency related to electrical systems, and it will be discussed in Finding C. All of these deficiencies pose a risk of shock, electrocution, or fire.

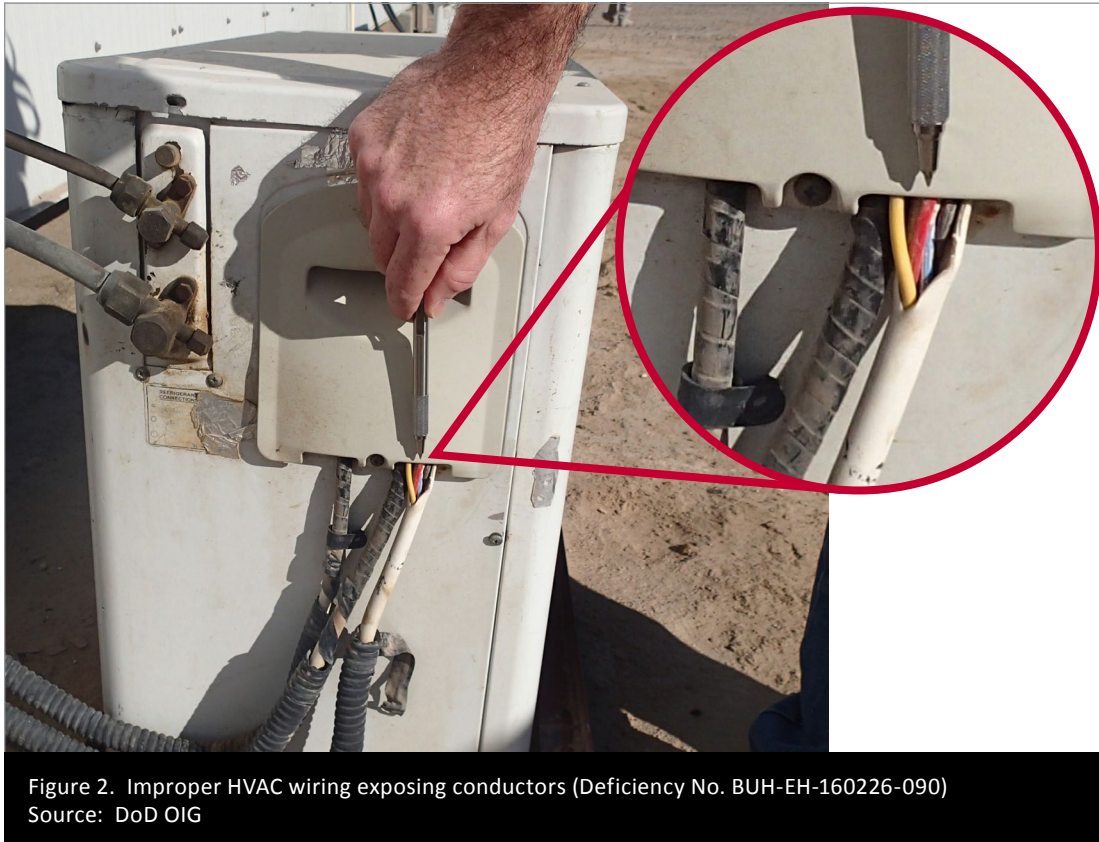
Figure 1. Camp Buehring Electrical Deficiencies by Category



Source: DoD OIG

We found that electrical equipment installation and maintenance at Camp Buehring had not been performed in a manner consistent with the National Electrical Code (NEC). We identified 34 instances of improper attachment of electrical wires to heating ventilation and air conditioning (HVAC) units and outdoor lighting fixtures. These wires are required to have sheathing or flexible conduit secured

inside the HVAC unit or electrical box. The improper attachment of these wires exposes live conductors to the elements and increases potential for damage to insulation (Figure 2). This increases the risk of electrical shock or electrocution.



We found 58 examples of poorly maintained and installed electrical panels. Electrical box front cover panels were missing breaker blanks or had openings due to imprecise cuts for additional breaker switches. An electrical box and its front cover panel are not energized and are an enclosure used to protect the user or operator from accidentally touching bare electrically energized parts, such as connections to various electrical appliances in the panel.

We also found 14 electrical boxes installed in damp areas or outdoors that were not installed with proper filler blanks necessary to seal external openings. Without filler blanks, moisture, rodents, and dirt may infiltrate the electrical boxes and come into contact with internal components. These conditions can create a conductive path across live conductors, resulting in increased risk of shock, electrocution, and fire.

Electrical circuits under maintenance were not secured in a safe manner. These circuits are required to be secured using a “lockout/tagout” procedure. A lockout/tagout procedure secures the electrical panel so that it cannot be inadvertently

energized while undergoing maintenance. We observed that none of the electrical panels undergoing maintenance had the panels or circuit breakers locked or tagged to prevent someone from inadvertently energizing the circuit. This increases the risk of shock or electrocution to anyone using or working on the electrical circuit or working on an electrical appliance connected to the circuit.

We also inspected new housing constructed under KEEP. These buildings are energy efficient, relocatable billeting designed to reduce power consumption through R-25 insulation in the walls, floor, and roof. Additionally, some KEEP buildings have rooftop solar array panels to supplement power generated onsite. Electrical panels installed in new KEEP buildings had electrical components, which were used beyond their design capacity. These panels have neutral busbars without enough terminals to allow each neutral conductor to be connected to its own terminal, as required. Therefore, instead of using a properly sized busbar, the installers put two neutral conductors under busbar terminals meant for only one conductor (Figure 3). A busbar is a thick strip of metal that allows multiple electrical connections and conducts electricity within an electrical panel. The size of the busbar is important in determining the maximum amount of current it can safely carry. Attaching more conductors to a busbar than it was designed to carry may increase the electric current beyond its design capacity causing it to overheat and increase the risk of fire.

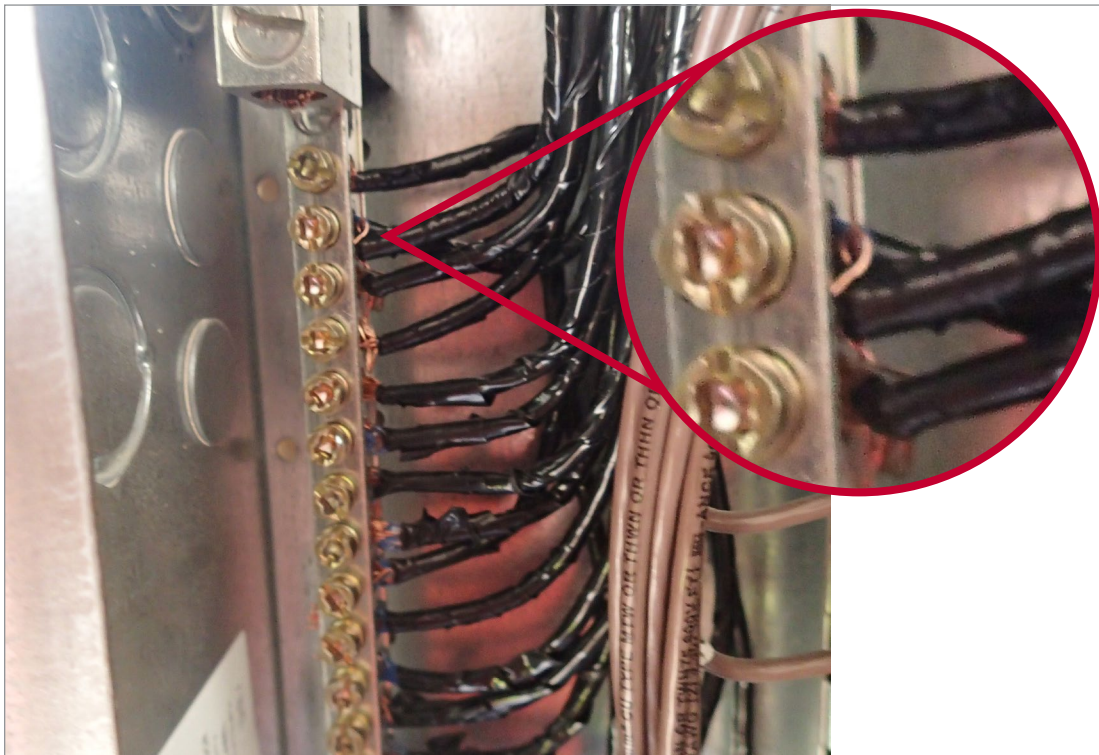


Figure 3. Two neutral conductors under busbar terminals meant for only one conductor (Deficiency No. BUH-EL-160226-147)
Source: DoD OIG

Tenants engaged in unsafe practices with electrical cords and electrical devices. We found 13 examples where tenants in housing and administrative areas daisy chained power cords and transformers (Figure 4). Daisy chaining electrical power strips together can result in overloaded and overheated power cables increasing the risk of fire. Tenants used transformers that were not approved by a recognized safety laboratory, such as UL or Conformité Européenne. Tenants connected American-style power cords approved for 125 volts to British-style 220-volt receptacles, making it easy to exceed the approved power rating of an extension cord or appliance. Also, heat-generating appliances, such as coffee makers and microwave ovens, were often found in sleeping quarters. The use of unapproved electrical devices or devices not used in accordance with their approved design are at a higher risk for malfunction resulting in shock, fire, or electrocution.

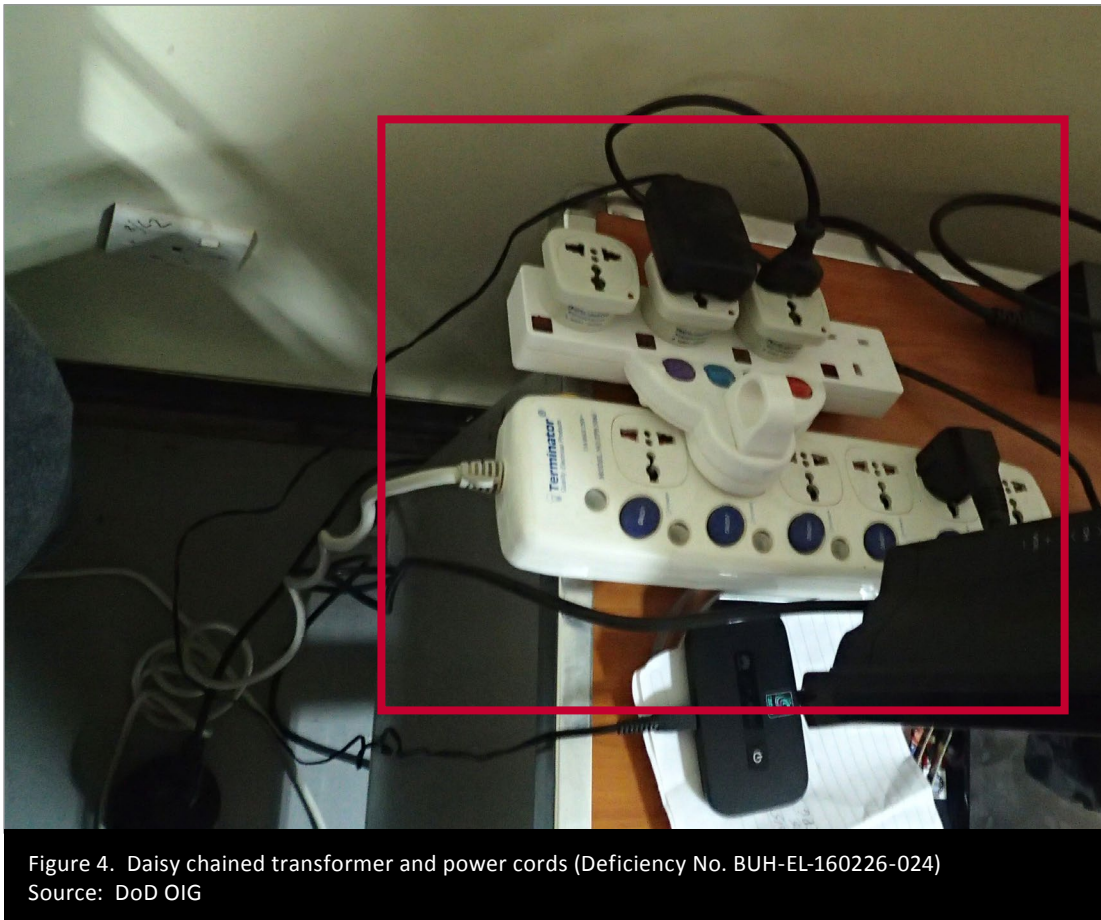


Figure 4. Daisy chained transformer and power cords (Deficiency No. BUH-EL-160226-024)
Source: DoD OIG

For grounding and bonding deficiencies, we found eight light switches and outlet receptacles in the trailers without proper equipment grounding. Also, light switches in the trailer park-style housing were improperly grounded due to a manufacturing defect. Instead of the wires being properly wrapped around the screw, or an appropriate wire termination lug applied, the ground wires were simply connected to the metal box by a sheet metal screw driven through the insulated ground wire conductors (Figure 5). This unapproved method fails to guarantee a secure ground and can leave a receptacle without proper equipment grounding, thereby increasing the risk of shock or fire.

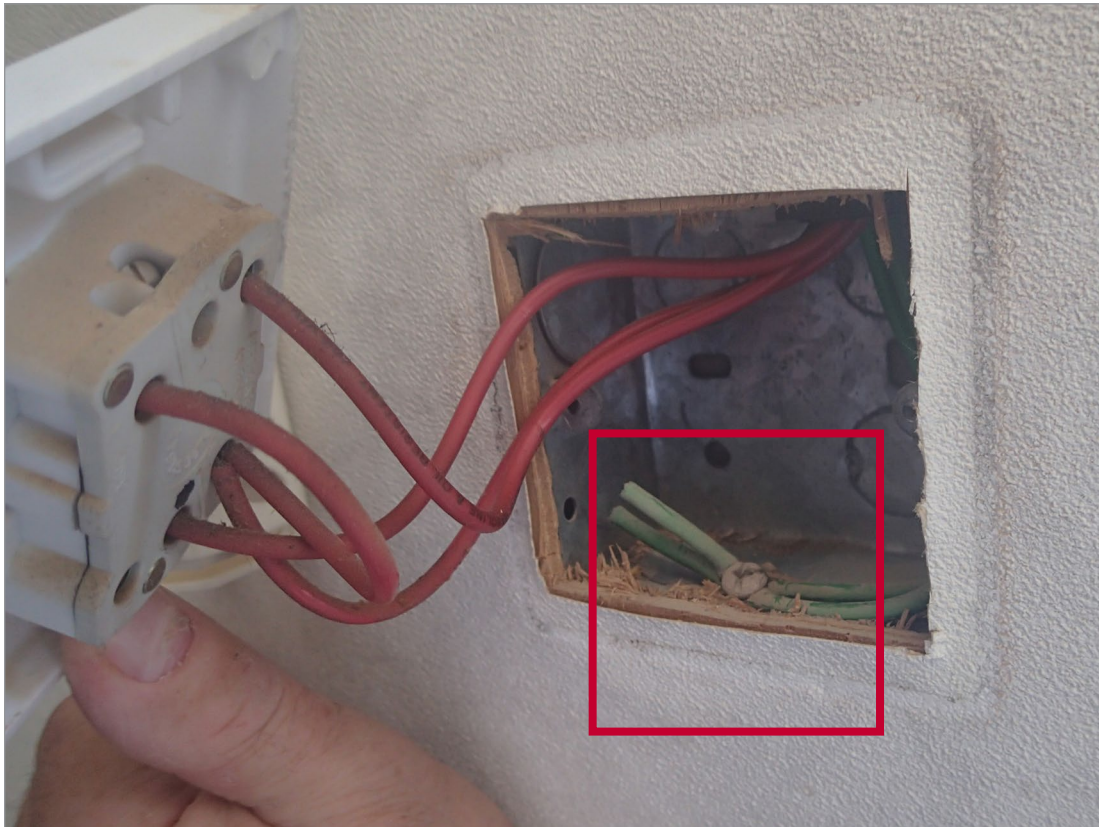


Figure 5. Improperly grounded light switch (Deficiency No. BUH-EL-160226-056)
Source: DoD OIG

Exterior metal stairs were not properly electrically bonded to the frame of the attached building. Paint on the stairs and sheet metal building siding had not been removed at the attachment locations prior to connecting the bonding jumper cable; unscrapped paint inhibits conductivity at the bonding jumper cable connection. Loosely-connected, improper self-tapping sheet metal screws were used to bond jumper cables to painted stairs and to the sheet metal siding on the building. The use of unapproved self-tapping screws for bonding purposes prevents the minimal metal-to-metal contact provided by the threads of the proper screws and

reduces conductivity to the frame. These conditions either separately or together reduce conductivity at the bonding connections. Without the required conductivity, fault current is prevented from going to ground. As a result, the stairs become energized, creating a potential for shock or electrocution.

For equipment accessibility and labeling, we found blocked access to electrical panels and 11 instances where electrical panels were not properly labeled identifying the facility to which it supplied power. These panels were also missing proper labeling describing the function of their individual circuits (Figure 6). This lack of information presents a shock or electrocution hazard in an emergency situation where a circuit may need to be de-energized.



Figure 6. Unlabeled electrical distribution panel (Deficiency No. BUH-EL-160226-054)
Source: DoD OIG

Recommendations, Management Comments, and Our Response

Recommendation A

We recommend that the Commander, U.S. Army Central:

1. **Conduct a root cause analysis and implement a corrective action plan for all electrical deficiencies identified in this report.**
2. **Create and execute a plan for ongoing inspection and maintenance of all U.S. military-occupied facilities at Camp Buehring and other locations where the Commander, Area Support Group Kuwait, provides base operations support and inspections to ensure that inspections and maintenance of these locations complies with applicable electrical codes.**

U.S. Army Central Comments

The Assistant Chief of Staff, Engineers, responding for USARCENT, agreed, and provided a root cause analysis and corrective action plan for all electrical deficiencies identified in this report. The root cause analysis identified

requirements for fire and electrical inspection capabilities and professional engineering disciplines at Camp Buehring to provide quality assurance to the contractor on the K-BOSS. USARCENT has previously identified the need for fire and electrical inspections and resources with Task Force Protect Our Warfighters and Electrical Resources (TF POWER). This seven-man team provides the knowledge and expertise to conduct inspections and immediate repairs needed to ensure life, health, and safety of U.S. forces.

Our Response

Comments from the Assistant Chief of Staff, Engineers, addressed all specifics of the recommendation, and no further comments are required.

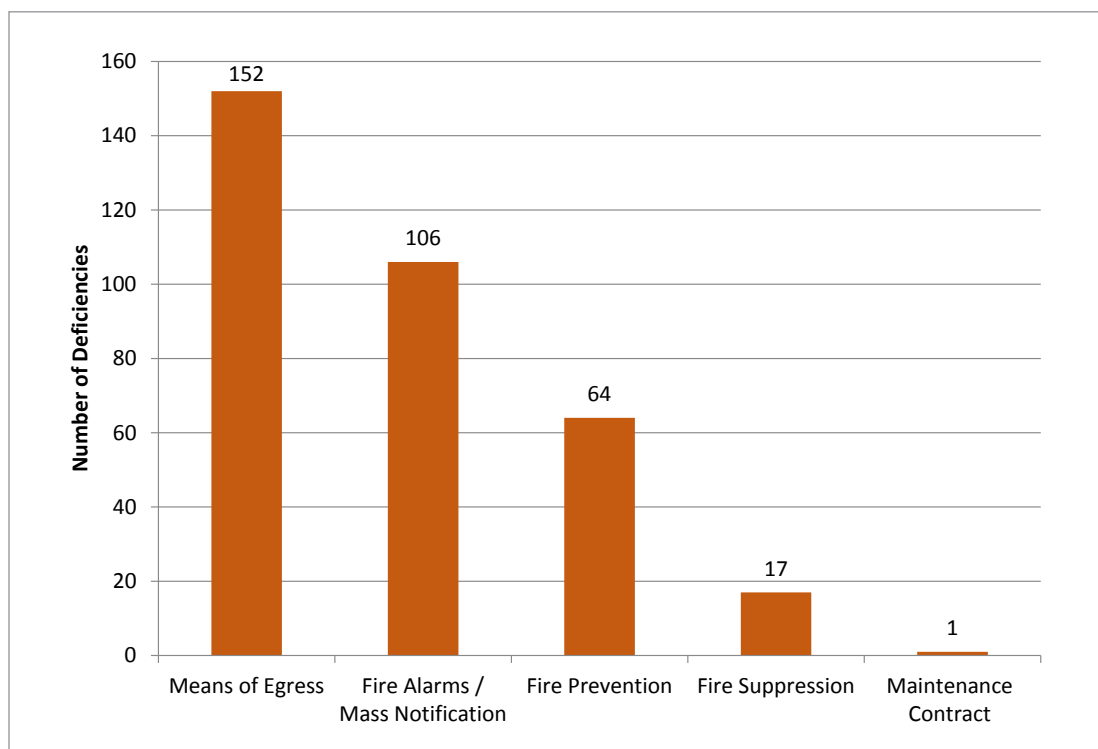
Finding B

Camp Buehring Fire Protection System Deficiencies

We identified 340 fire protection deficiencies. These deficiencies could have been mitigated if USARCENT had ensured that fire protection system installation, maintenance, and inspection were performed as required by applicable UFC codes and standards and base policy. As a result, these deficiencies pose an increase in the risk of fire, injury, and loss of life or property.

We documented 340 deficiencies related to fire protection systems (Figure 7). The deficiencies related to means of egress, fire alarm and mass notification, fire prevention, fire suppression, and maintenance contract. Maintenance contract is a deficiency related to fire protection systems that will be discussed in Finding C. These deficiencies increase the risk of fire, injury, or death.

Figure 7. Camp Buehring Electrical Deficiencies by Category



Source: DoD OIG

Means of egress available for immediate use by occupants is required by NFPA 101. Inadequate means of egress could inhibit occupants' ability to escape in the event of fire, leading to injury or death. We found 31 exit stairs external to the barracks without handrails. The lack of handrails on exit stairs makes it difficult to navigate the stairs and can also contribute to a loss of balance and falls while going up or down the stairs. This deficiency was identified in 30 facilities. Also, we found 38 exit stairs with stair risers of inconsistent dimensions. For instance, the height of the first and last stair would be different than the height of the remaining stairs. Inconsistent riser dimensions inhibit means of egress as they are difficult to navigate and can create a tripping hazard to users. We found newly installed guard rails at the KEEP buildings that have excessive openings in the ornamental pattern (Figure 8). This was found at a building that had been accepted by the U.S. Government. Guard rails are to be arranged such that the ornamental pattern does not permit a sphere four inches or greater in diameter to pass through any opening in the guard rail extending up to a height of 34 inches above the landing, stair, or floor. Improperly designed guard rails can present a fall through hazard for personnel using the stairs.



We found 15 windows in 11 barracks sleeping areas with fixed (bolted) bars across each window. We also found eight windows blocked by furniture (Figure 9). The required secondary means of escape is rendered unusable when windows are blocked by non-removable bars or furniture. If a fire blocks the primary means of egress (for example, the door to the corridor) and the window is blocked occupants can become trapped, posing a significant risk to life.

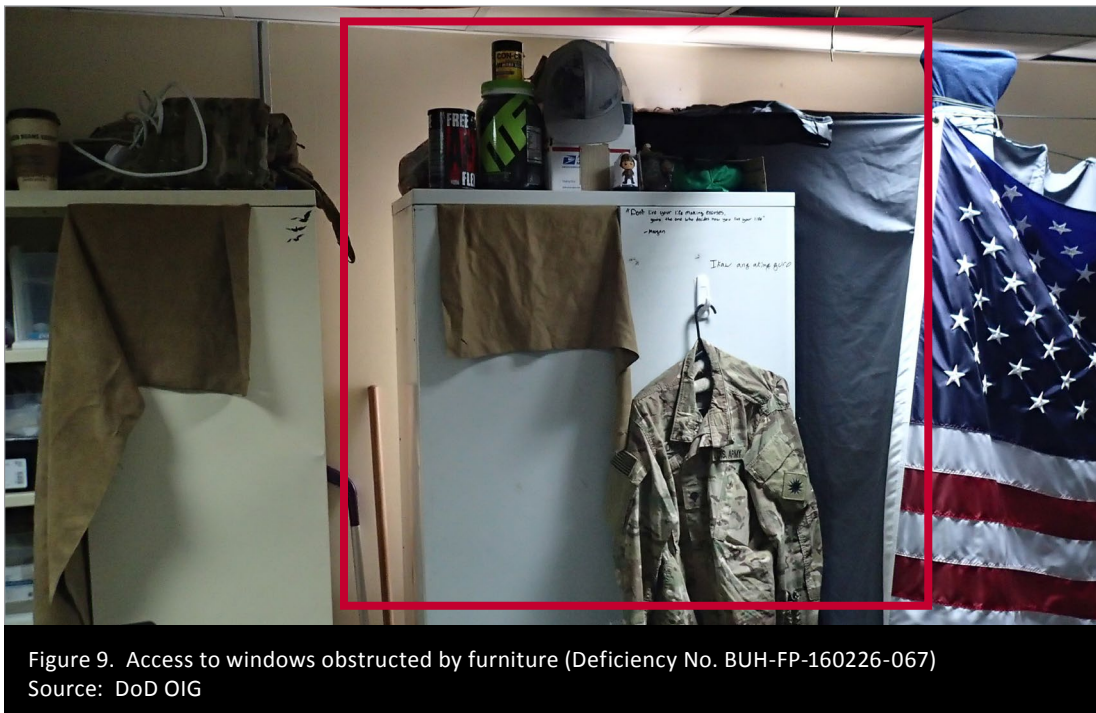


Figure 9. Access to windows obstructed by furniture (Deficiency No. BUH-FP-160226-067)
Source: DoD OIG

We found inadequate smoke detection coverage. For example, we found two smoke detectors covering a space that requires a minimum of four detectors. According to code, the distance between smoke detectors shall not exceed a nominal spacing of 30 feet. We found disabled smoke detectors in rooms where newer functioning smoke detectors had been installed. Providing, but not maintaining non-required smoke detection can result in a false sense of security, and can lead to confusion upon activation of the fire alarm system. These conditions individually or collectively result in an increased risk of fire, injury, or death. Also, provision of unnecessary fire protection devices contributes to the maintenance workload burden.

We found a Fire Alarm System (FAS) out of service without the required notification posted in all occupied rooms. When a FAS is out of service, the fire department must post notification in all occupied rooms in that building informing personnel that the fire alarm is incapable of sounding in the event of a fire. Also, we found two building

FASs with a “TRB” on the information panel indicating “trouble” conditions (Figure 10). Trouble condition notifications indicate operational issues with the system; these notices were active for 4 to 6 days without correction. This could cause significant delay in the fire department response to an emergency or fire.



Figure 10. Alarm system displaying trouble condition uncorrected (Deficiency No. BUH-FP-160226-212)
Source: DoD OIG

We found the FAS of multiple buildings daisy chained together, so that a single communication line was connecting each building FAS in series, running from building to building, and then back to the main FAS in one of the buildings. If FASs are daisy chained, a single break in the communication line would disable the fire alarm reporting capability of multiple buildings. Additionally, these buildings lacked required remote annunciators. Remote annunciators are information and limited control function panels required in each building linked to the main FAS panel. They provide the firefighter with necessary information to identify and locate a fire in that building.

We found that the Mass Notifications Systems in the KEEP buildings do not meet DoD standards. The mass notification functions were inaccessible (behind a locked panel), the paging microphone was inoperable, there were no prerecorded messages, strobe lights did not operate properly, and there was no air distribution shutdown. A central air distribution shut down is necessary in the event it becomes necessary to turn off all HVAC units to prevent unwanted chemical vapors from entering into the building, or prevent the air handlers from feeding air to a fire. Also, there was only a single communication line to the fire department; two lines are required for redundancy in case of a break or failure to connect on one of the lines. This could

result in the fire department not being notified in the event of an emergency or fire, a first responder rendered incapable of notifying occupants of an emergency condition, or incapable of shutting off air handling units to control the spread fire, or of toxic fumes inside the sleeping quarters.

For fire prevention, we found that required clearance areas around buildings were obstructed by vehicles, storage, and vegetation. According to the UFC fire protection regulation, 30 feet of clearance is required between the building and the parking zone. We found vehicles parked within building separation zones (Figure 11). We also found inadequate separation between tent structures, and between housing and non-housing structures. Storage of combustibile materials, or parking of vehicles too close to structures presents a risk of exposure to fire should the materials or vehicles ignite. They also obstruct firefighting equipment and personnel, and can delay or prevent the firefighter's response in the event of fire. These conditions increase unsafe and hazardous conditions.



Figure 11. Vehicles parked in a building clearance area in violation of fire prevention policy (Deficiency No. BUH-FP-160226-077)
Source: DoD OIG

For fire suppression, we found fire extinguishers that did not have inspection tags, were improperly mounted, were not easily accessible, and did not have the required performance verification mark. Fire extinguishers must have a performance verification mark indicating their approval by a nationally recognized testing laboratory, such as UL, Factory Mutual or Conformité Européenne. Without approval from a recognized testing laboratory, the function of the fire extinguisher is in question, thus increasing the risk of injury or death.

Recommendations, Management Comments, and Our Response

Recommendation B

We recommend that the Commander, U.S. Army Central:

1. **Conduct a root cause analysis and implement a corrective action plan for all fire protection deficiencies identified in this report.**
2. **Create and execute a plan for ongoing inspection and maintenance of all U.S. military-occupied facilities at Camp Buehring and other locations where the Commander, Area Support Group Kuwait, provides base operations support and inspections to ensure inspections and maintenance of these locations complies with applicable fire protection safety codes and standards.**

U.S. Army Central Comments

The Assistant Chief of Staff, Engineers, responding for USARCENT, agreed, stating that TF POWER will be used for quality assurance for inspections of Camp Buehring electrical and fire protection upgrades and for repairs to correct deficiencies identified in this report. The TF POWER team will ensure all K-BOSSS contractor repairs are performed in compliance with the appropriate UFC codes.

Our Response

Comments from the Assistant Chief of Staff, Engineers, addressed all specifics of the recommendation, and no further comments are required.

Finding C

Camp Buehring Inspections

As noted in Finding A and B, we identified electrical and fire protection work that was not inspected to applicable electrical and fire protection codes and standards. Inspections were not conducted to code because the K-BOSSS PWS did not provide requirements to ensure that the inspections are adequate. The CORs do not have the technical expertise to ensure compliance with the appropriate UFC and base policies, codes, and standards.

We reviewed the K-BOSSS contract W52P1J-10-C-0062 PWS with regard to the maintenance contract electrical systems requirements. The Department of the Army, Area Support Group Kuwait (ASG-KU) Command Policy Memorandum 13, "Fire Prevention," August 13, 2015, requires all electrical wiring, plugs, outlets, switches, and similar devices to be installed or modified only by ASG-KU DPW electricians or a certified contractor, in accordance with the NEC. Also, NEC criteria are referenced in the applicable UFC 1-201-01. Therefore, the contractor is required to maintain power to facilities, and is required to perform electrical maintenance to any specific standard such as the NEC. Sections C.5.7.7.8 and C.5.7.7.8.1 of the contract require that interior and exterior electrical systems are maintained and power is supplied, but does not reference a relevant safety standard. The contract PWS needs to provide clearer guidance on electrical safety requirements to hold the K-BOSSS contractor accountable for observed safety deficiencies in maintenance work to minimum NEC requirements, as prescribed in the ASG-KU policy memorandum and UFC 1-201-01.

We also reviewed the K-BOSSS contract PWS with regard to the maintenance contract fire protection requirements. The contract lacked references to the appropriate UFC for inspection, testing, and maintenance (ITM) of fire protection systems. Specific sections of the contract related to inspection, test, and maintenance requirements for fire alarm and fire protection systems do not reference the appropriate UFC criteria. For example: (1) Contract section C.5.10.3.7.5.2.2.3 states, "Fire alarm system testing and maintenance shall be performed in accordance with manufacturers' specifications, and the United States Government UFC;" (2) Contract section C.5.10.3.7.4.2 states, "Project site inspections shall be conducted IAW ASG-KU engineering guidelines; using approved statements of work & submittals, procedural memorandums, Fire

Prevention regulations, all applicable NFPA codes and standards to include fire protection UFC;” and (3) Contract section C.5.10.3.7.3 states, “Contractor shall test and inspect wet pipe fixed fire suppression systems IAW appropriate manufacturer or USG specifications.”

General references to all UFC criteria as well as manufacturer’s specifications and NFPA requirements result in confusion and the inability to effectively monitor the contractor performance. It can also result in excessive inspection, testing, and maintenance taskings that may overburden the contractor performing these necessary tasks, and result in unnecessary additional cost to the Government. The UFC 3-601-02, “Operation and Maintenance: Inspection, Testing, and Maintenance of Fire Protection Systems,” provides requirements for ITM of engineered fire protection features in DoD facilities. Deviation from this document is not allowed without prior approval of the component office of responsibility Authority Having Jurisdiction. This document should be the primary reference for ITM of fire alarm and fire suppression systems.

Based on the review of the PWS electrical and fire protection-related requirements and interviews with ASG-KU CORs, we identified a lack of Government oversight for these sections of the PWS. The inspection team interviewed the COR assigned to the Electrical and Generator sections of the PWS, which contain the electrical requirements of the contract. He explained that he has a background in electrical work, but is not a master electrician. He also stated that he does not always know what to specifically look for when he conducts his inspection of the contractor’s work. Furthermore, the base command does not have a master electrician on site, and although the contractor is required to have one master electrician, it would be inappropriate to have this master electrician inspecting his own work. As a result, the COR cannot ensure that ASG-KU is receiving quality products and services from the contractor.

We also interviewed the COR assigned to the Security, Fire, and Emergency Services section of the PWS, which contain the fire protection requirements of the contract. The COR is not a fire protection engineer, and the base command does not have a fire protection engineer on staff. The contractor does not have a fire protection engineer onsite, although, as previously stated, it would be inappropriate use the contractor because he would be inspecting his own work. As a result, the COR cannot ensure that the contractor is meeting the PWS performance measurements and that the ASG-KU is receiving quality products and services from the contractor.

Conclusion

The contract did not require the contractor to meet applicable electrical safety standards. Also, the contract has general fire alarm and fire protection references to all UFC criteria, manufacturer's specifications, and NFPA requirements. These imprecise requirements resulted in confusion and the inability to effectively monitor the contractor performance. Furthermore, the CORs did not have the requisite technical expertise to conduct the appropriate inspections.

Recommendations, Management Comments, and Our Response

Recommendation C

We recommend that the Commander, U.S. Army Central:

- 1. Revise the contract Performance Work Statement to ensure that the contract requires the contractor to maintain the electrical systems to the National Electrical Code.**
- 2. Revise the contract Performance Work Statement to ensure the contract requires the contractor to maintain the fire protection systems to Unified Facilities Criteria 3-601-02.**

U.S. Army Central Comments

The Assistant Chief of Staff, Engineers, responding for USARCENT, agreed with these recommendations, but did not provide any details on how or when the Performance Work Statements would be revised.

Our Response

Comments from Assistant Chief of Staff, Engineers, responding for USARCENT, did not address Recommendations C.1 and C.2. The comments from USARCENT stated that he agreed with the recommendations, but did not specify how or when Recommendations C.1 and C.2 would be implemented. Therefore, we request further comments specifying how and when these actions will be completed.

- 3. Provide the contracting officer's representative staff with the required technical assistance of a master electrician at Camp Buehring to evaluate and inspect contractor performance (under the Performance Work Statement revised in Recommendation C.1) to ensure that all military housing and other structures comply and maintain compliance with applicable electrical codes.**

- 4. Provide the COR with the required technical assistance of a fire protection engineer at Camp Buehring to evaluate and inspect contractor performance (under the PWS revised in Recommendation C.2) to perform inspections, design reviews, and acceptance testing, and verify that all military housing and other structures meet UFC codes, standards, and policies for fire protection systems.**

U.S. Army Central Comments

The Assistant Chief of Staff, Engineers, responding for USARCENT, agreed, stating that ASG-KU Safety and DPW North recommends retaining the services of permanent, Government employees as a resident master electrician, HVAC technician, plumber, structural engineer, electrical engineer, mechanical engineer, civil engineer, fire protection engineer, environmental engineer, and safety engineer. These personnel would perform inspections, design reviews and acceptance testing, and would verify that all military housing and other structures meet applicable codes, policies, and standards.

Our Response

Comments from USARCENT addressed the specifics of recommendations, and no further comments are required.

Appendix A

Scope and Methodology

We conducted the onsite physical inspection from February 16 through 26, 2016. We limited our inspection of Camp Buehring, Kuwait, to U.S. military-occupied facilities. We inspected to applicable UFC standards in accordance with the Council of the Inspectors General on Integrity and Efficiency, “Quality Standards for Inspection and Evaluation.” Those standards require that we plan and perform the inspection to obtain sufficient appropriate evidence to provide a reasonable basis for our findings and conclusions based on our inspection objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our inspection objectives.

We independently selected living facility units based on size, type, age, and work orders. Also, some were selected at random. We also interviewed CORs, residents, maintenance personnel, facility management, and other installation SMEs.

Use of Computer-Processed Data

We did not use computer-processed data to perform this inspection.

Use of Technical Assistance

During this inspection, we used the assistance of SMEs in the areas of electrical system safety, fire protection engineering, and quality assurance. SMEs were certified in their associated fields.

Prior Coverage

During the last 5 years, the DoD OIG issued several reports discussing military housing inspections. Unrestricted DoD OIG reports can be accessed at <http://www.dodig.mil/pubs/index.cfm>.

Report No. DODIG-2016-106, “U.S. Military – Occupied Facilities Inspection – King Abdullah II Special Operations Training Center,” July 7, 2016

Report No. DODIG-2015-181, “Continental United States Military Housing Inspections – Southeast,” September 24, 2015

Report No. DODIG-2015-162, “Continental United States Military Housing Inspections – National Capital Region,” August 13, 2015

Report No. DODIG-2015-160, "U.S. Army Generally Designed Adequate Controls to Monitor Contractor Performance at the King Abdullah II Special Operations Training Center, but Additional Controls Are Needed," August 7, 2015

Report No. DODIG-2015-013, "Military Housing Inspections – Republic of Korea," October 28, 2014

Report No. DODIG-2014-121, "Military Housing Inspections – Japan," September 30, 2014

Report No. DODIG-2013-099, "Compliance with Electrical and Fire Protection Standards of U.S. Controlled and Occupied Facilities in Afghanistan," July 18, 2013

Appendix B

Inspection Standards and Criteria

Federal Laws and Standards

Occupational Safety and Health Act of 1970, Section 19, "Federal Agency Safety Programs and Responsibilities"

Federal Regulation Notice 29 CFR Standard 1910, "Basic Program Elements for Federal Employees - Occupational Safety and Health Programs"

Executive Order 12196, "Occupational Safety and Health Programs for Federal Employees"

Federal Fire Prevention and Control Act of 1974

DoD Policies and Standards

DoD Instruction (DoDI) 6055.01, "DoD Safety and Occupational Health (SOH) Program," October 1, 2014

DoDI 6055.05, "Occupational and Environmental Health," November 11, 2008

DoDI 6055.06, "DoD Fire and Emergency Services (F&ES) Program," December 21, 2006

DoDI 4165.63, "DoD Housing," July 21, 2008

DoD Directive (DoDD) 4715.1E, "Environmental Safety and Occupational Health," March 19, 2005

DoD 4165.63-M, "DoD Housing Management," October 28, 2010

Under Secretary of Defense for Acquisition, Technology, and Logistics Memorandum, "Department of Defense Unified Facilities Criteria," May 29, 2002

Department of the Army, Area Support Group Kuwait (ASG-KU) Command Policy Memorandum 13, "Fire Prevention," August 13, 2015

Unified Facilities Criteria

UFC 1-201-01, "Non-Permanent DOD Facilities in Support of Military Operations," January 1, 2013

UFC 1-202-01, "Host Nation Facilities in Support of Military Operations," September 1, 2013.

UFC 3-410-01, "Heating, Ventilating, and Air Conditioning Systems," Change 1, October 1, 2014

UFC 3-520-01, "Interior Electrical Systems," Change 2, July 1, 2012

UFC 3-560-01, "Electrical Safety, O&M," Change 5, May 1, 2012

UFC 3-600-01, "Fire Protection Engineering for Facilities," Change 3, March 1, 2013

UFC 3-601-02, "Operation and Maintenance: Inspection, Testing, and Maintenance of Fire Protection Systems," September 8, 2010

National Fire Protection Association Standards

Electrical Criteria

NFPA 70, "National Electrical Code (NEC)," 2015 Edition

Fire Protection Criteria

NFPA 1, "Fire Code," 2014 Edition

NFPA 10, "Standard for Portable Fire Extinguishers," 2013 Edition

NFPA 13, "Standard for the Installation of Sprinkler Systems," 2013 Edition

NFPA 13R, "Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies," 2013 Edition

NFPA 25, "Standard for the Inspection Testing and Maintenance of Water-Based Fire Protection System," 2014 Edition

NFPA 30, "Flammable and Combustible Liquids Code," 2015 Edition

NFPA 70, "National Electrical Code," 2014 Edition

NFPA 72, "National Fire Alarm and Signaling Code," 2013 Edition

NFPA 80, "Standard for Fire Doors and Other Opening Protective," 2013 Edition

NFPA 101, "Life Safety Code," 2015 Edition

NFPA 720, "Standard for Installation of Carbon Monoxide Detection," 2012 Edition

General Environmental Health and Safety Criteria

AR 420-1, "Army Facilities Management," August 24, 2012

Directorate of Public Works Policy #3 – "Fire Alarm and Suppression System Standardization," June 29, 2015

"ASG-KBOSS FIRE AND EMERGENCY SERVICES Arifjan-Buehring-SPOD-KNB MASTER PLAN 2016"

Management Comments

Department of the Army, Assistant Secretary of the Army, Installations, Energy and Environment



DEPARTMENT OF THE ARMY
ASSISTANT SECRETARY OF THE ARMY
INSTALLATIONS, ENERGY AND ENVIRONMENT
110 ARMY PENTAGON
WASHINGTON DC 20310-0110

SAIE

12 Aug 16

MEMORANDUM FOR DOD Inspector General

SUBJECT: DODIG Military Housing Inspection – Camp Buehring, Kuwait – Draft report – (UNCLASSIFIED/FOUO) (DODIG D2016-D000pt-0058.000)

1. The Office of the Assistant Secretary of the Army for Installations, Energy and Environment has reviewed the USARCENT and ASG-KU response and corrective action plan and concur as written.
2. HQDA recognizes their request for assistance and will work to provide both near and long-term solutions.
3. The POC for this action is [REDACTED]

A handwritten signature in green ink, appearing to read "KATH", followed by a flourish and the letter "h".

KATHERINE HAMMACK

CF:
ACSIM
IMCOM
DCS, G3
DAIG

United States Army Central



DEPARTMENT OF THE ARMY
UNITED STATES ARMY CENTRAL
1 GABRESKI DRIVE
SHAW AIR FORCE BASE, SC 29152-5202

ACEN

8 August 2016

MEMORANDUM THRU CCJ4, United States Central Command (USCENTCOM), 7115 South Boundary Boulevard, MacDill Air Force Base, Florida 33621-5101

FOR Department of Defense (DoD) Inspector General (IG), 4800 Mark Center Drive, Alexandria, Virginia 22350-1500

SUBJECT: Response to the DoD IG Draft Report - Military Housing Inspection – Camp Buehring, Kuwait

1. Purpose: The DoD IG Official Draft Report requests United States Army Central (USARCENT) to comment on recommendations that are reflected in sections A1, A2, B1, B2, C1, C2, C3 and C4 of the Official Draft report.
2. Background: On 20 JUL 16, the DoD IG published a draft report in regards to Project No. D2016-D000PT-0058.000, a fire and electrical inspection of Camp Buehring, Kuwait (16-26 FEB 16). Camp Buehring, established in the fall of 2002, was formed as a temporary training camp with joint training facilities for both U.S. and Kuwaiti military personnel.
3. Request for Assistance: USARCENT Area Support Groups (ASGs) have a capability gap with respect to installation management. Accordingly, USARCENT requests HQDA assistance in providing a systematic review to Area Support Groups (ASGs) that will provide both near and long term solutions to baseline USARCENT ASGs with every other U.S. Army base.
4. Conclusion: USARCENT concurs with the DoD IG findings and recommendations. USARCENT concurs and supports the ASG-KU memorandum on the work being performed to correct all remaining deficiencies. The chart below references the current status of the total deficiencies identified during the inspection. There were no "Notice of Concerns" cited during this inspection.

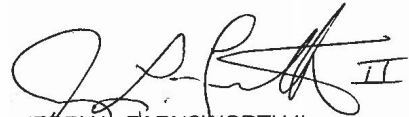
United States Army Central (cont'd)

ACEN
 SUBJECT: Response to the DoD IG Draft Report – Military Housing Inspection – Camp Buehring, Kuwait

	Total Deficiencies	Fire Protection	Electrical
Deficiencies identified by DoDIG Inspection 16-26 February, 2016	538	340	198
Corrected	122	31	91
Still in progress for correction, require CENTCOM waivers	416	309	107
Exemptions requested, require CENTCOM approval	0	0	0
Contested Deficiencies	0	0	0

5. The point of contact for this memorandum is [REDACTED]

- 3 Encls
 1. ASG-KU Response Memorandum
 2. Deficiency Tracker
 3. Official Draft Report



JERRY L. FARNSWORTH II
 Colonel, USA
 Assistant Chief of Staff, Engineers

Department of the Army, Area Support Group Kuwait



RELAY TO
AGENCY OF ORIGIN

DEPARTMENT OF THE ARMY
AREA SUPPORT GROUP-KUWAIT
CAMP ARIFJAN, KUWAIT
APO AE 09304

ACKU-CO

8 August 2016

MEMORANDUM FOR RECORD

SUBJECT: ASG-KU Response to "US Military-Occupied Facilities Inspection – Camp Buehring, Kuwait

1. **Purpose.** To provide an update on the actions taken by ARCENT and ASG-KU in response to DODIG, Camp Buehring, audit findings.
2. **Background.** The DoD IG conducted facility inspections on Camp Buehring Kuwait (CBKU) 16-26 February 2016. The inspections were specific to billeting and support facilities. The inspections were focused on health and safety policies and standards regarding electrical and fire protection systems. The inspection resulted in a Results in Brief- Inspection of United States Military Occupied Facilities at Camp Buehring (Discussion Draft) identifying 538 total findings (198 Electrical, 340 Fire Protection) with recommendations. The inspection team found Zero (0) Notices of Concern (NOC) which would have indicated an immediate threat to life, health or safety.
 - a. Recommendation A.
 - (1) A.1. Conduct a root cause analysis and implement a corrective action plan for all 538 deficiencies identified in this report.
 - b. Recommendation B
 - (1) B.1. Create and execute a plan for ongoing inspection and maintenance of all U.S. military-occupied facilities at Camp Buehring and other locations under Commander, U.S Army Central.
 - (2) B.2. Ensure inspection and maintenance of these locations complies with applicable electrical and fire protection safety codes and standards.
 - c. Recommendation C
 - (1) C.1. Retain the services of a permanent government employed resident master electrician, and fire protection engineer at Camp Buehring to perform inspections, design reviews, and acceptance testing.

Department of the Army, Area Support Group Kuwait (cont'd)

ACKU-CO

SUBJECT: ASG-KU Response to "US Military-Occupied Facilities Inspection – Camp Buehring, Kuwait

(2) C.2. Verify that all military housing and other structures meet applicable codes, policies and standards.

(3) C.3. Provide COR staff with the required technical assistance of a master electrician to evaluate and inspect contractor performance.

(4) C.4. Provide the COR with the required technical assistance of a fire protection engineer to evaluate and inspect contractor performance.

3. Response to DoDIG Recommendations A, B, and C.

a. Recommendation A.1. a root cause analysis has identified requirements for fire & electrical inspection capabilities and professional engineering disciplines capabilities in Camp Buehring to provide quality assurance (QA) to the contractor on the Kuwait-Base, Operations and Security Support Services (K-BOSSS) contract (See enclosure 1). USARCENT has previously identified the need for a fire and electrical inspections and resourced with Task Force Protect Our Warfighters and Electrical Resources (TF POWER). This seven man team provides the knowledge and expertise to conduct inspections and immediate repairs needed to ensure life, health, safety of U.S. Title 10 forces. The TF POWER team provides support to all U.S. forces for which USARCENT executes base operations support and integration.

b. Recommendation B.1. integration of TF POWER as Quality Assurance Representatives (QA) for the inspection of Camp Buehring, Kuwait (CBKU) electrical and fire protection upgrades and repairs identified as deficiencies by the DoD IG. The TF Power team is ensuring all K-BOSSS contractor repairs meet the appropriate Unified Facilities Criteria (UFC) codes.

c. Recommendation B.2. weekly meetings between TF POWER, ASG-Kuwait Safety, the USG-Kuwait Department of Public Works- North (DPW-N), and the K-BOSSS contractor to discuss the status of the repairs and inspections.

d. Recommendation C.1 the ASG-Kuwait Safety, DPW-N, and TF POWER implemented a plan to inspect all facilities in CBKU occupied by Title 10 forces for which USARCENT has BOS-I every 3-6 months in order to ensure compliance with the UFCs. The status of identified faults are briefed to the ASG-Kuwait Commander bi-weekly of every month as part of the existing battle rhythm event.

e. Recommendation C.2, C.3, C.4, the ASG-Kuwait Safety and DPW-N recommends retaining the services of permanent government employees as a resident master electrician, HVAC technician, plumber, structural engineer, electrical engineer, mechanical engineer, civil engineer, fire protection engineer, environmental engineer, and safety engineer to perform inspections, design reviews, and acceptance testing, and to verify that all military housing and other structures meet applicable codes, policies and standards.

Department of the Army, Area Support Group Kuwait (cont'd)

ACKU-CO

SUBJECT: ASG-KU Response to "US Military-Occupied Facilities Inspection – Camp Buehring, Kuwait

4. The ASG-Kuwait Safety, the DPW-N, and TF POWER produced a spreadsheet to track all the deficiencies identified by DoD IG. The deficiencies identified in this inspection have been categorized into two areas with their current status. These two areas are:

a. Corrected/Working: 160 Electrical and 34 Fire Safety deficiencies were repaired as work orders by the K-BOSSS contractor. 91 Electrical and 31 Fire Safety deficiencies were repaired, quality assured, and validated as work orders by the K-BOSSS contractor, DPW-N, and TF POWER.

b. Projects: There are 6 fire deficiencies that will be submitted as projects due to physical defects which meet the category of life, safety, and welfare deficiencies.

5. Point of contact for this memorandum is [REDACTED]

Enclosures:
1. Action Plan
2. Root Cause Analysis


JOSEPH W. POWER IV
COL, IN
Commanding

Acronyms and Abbreviations

AR	Army Regulation
USARCENT	U.S. Army Central
ASG-KU	Area Support Group Kuwait
COR	Contracting Officer's Representative
DoD OIG	Department of Defense Office of the Inspector General
DPW	Director Public Works
FAS	Fire Alarm System
HVAC	Heating, Ventilation, and Air Conditioning
IAW	In Accordance With
ITM	Inspection, Testing, and Maintenance
K-BOSSS	Kuwait-Base Operations and Security Support Service
KEEP	Kuwaiti Energy Efficiency Project
NEC	National Electrical Code
NFPA	National Fire Protection Association
OIG	Office of Inspector General
PWS	Performance Work Statement
SME	Subject Matter Expert
TF POWER	Task Force Protect Our Warfighters and Electrical Resources
UFC	Unified Facilities Criteria



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U.S. DEPARTMENT OF DEFENSE

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For more information about DoD IG reports or activities, please contact us:

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