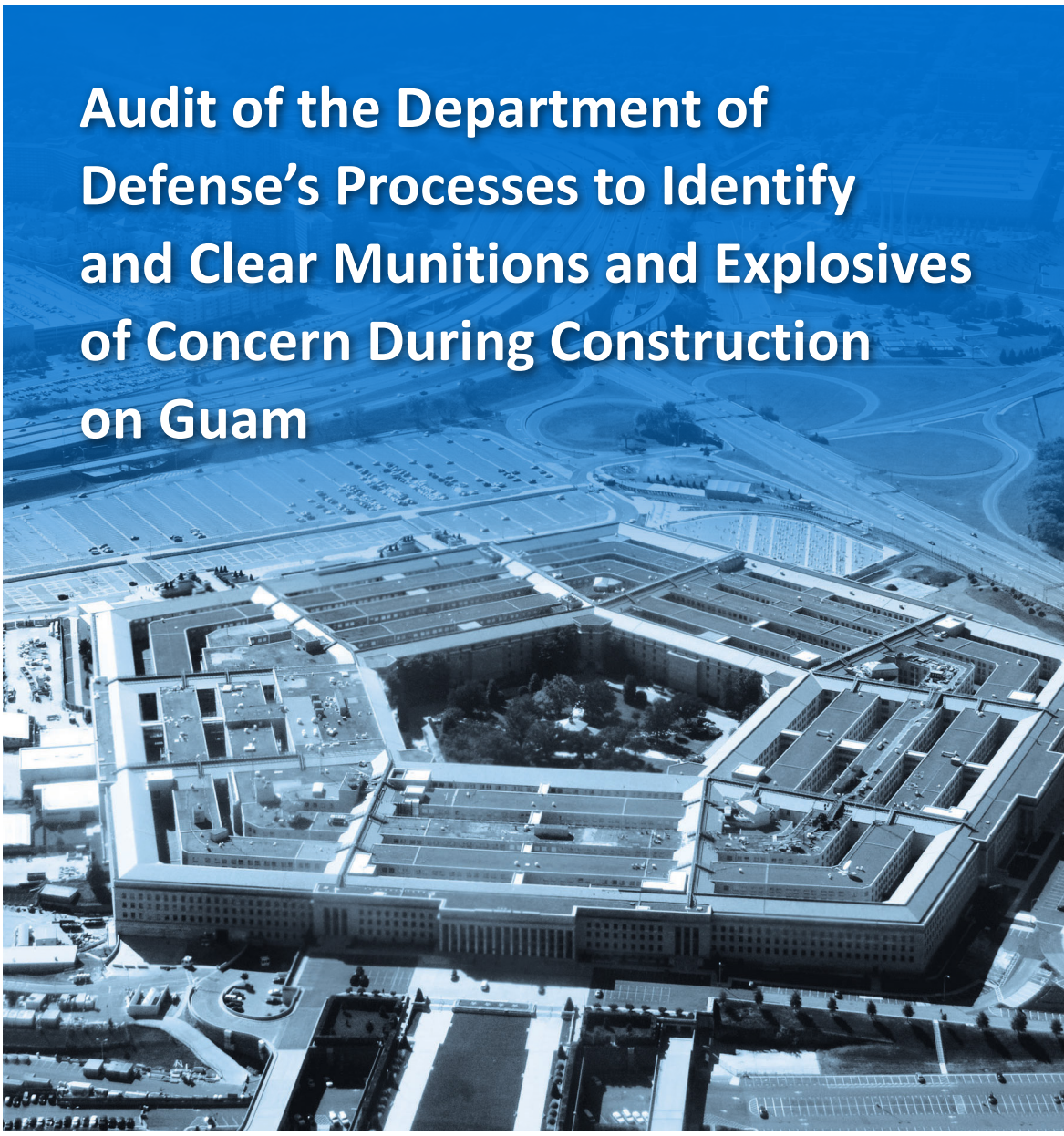
Report No. DODIG-2020-093

INSPECTOR GENERAL

U.S. Department of Defense

JUNE 16, 2020

Audit of the Department of Defense's Processes to Identify and Clear Munitions and Explosives of Concern During Construction on Guam



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INSPECTOR GENERAL
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Results in Brief

Audit of the Department of Defense's Processes to Identify and Clear Munitions and Explosives of Concern During Construction on Guam

June 16, 2020

Objective

The objective of this audit was to determine whether DoD personnel implemented safety standards and quality assurance controls for addressing munitions and explosives of concern during military construction projects on Guam, and whether DoD personnel properly managed safety concerns and readiness related to munitions and explosives of concern on Guam in accordance with military standards and risk-management instructions.

Background

We reviewed the overall munitions and explosives of concern (MEC) clearance process for military construction (MILCON) projects at Joint Region Marianas (JRM), the joint U.S. military command on Guam. MEC is unexploded ordnance, discarded military munitions, and munitions constituents present in concentrations high enough to pose an explosive hazard.[1]

The Battle of Guam during World War II resulted in an estimated 11,000 items of MEC because of air, sea, and land bombardments. DoD Directive 6055.09E, "Explosives Safety Management," requires DoD Components to implement and maintain an effective explosives safety management program. The DoD protects people and property from the effects of military

[1] Federal law defines munitions constituents as any materials originating from unexploded ordnance, discarded military munitions, or other military munitions, including explosive and non-explosive materials, and emission, degradation, or breakdown elements of such ordnance or munitions.

Background (cont'd)

munitions (including MEC), to execute the mission safely and effectively by exposing the minimum number of people required. Furthermore, the Directive provides explosives safety management principles and requirements that provide for immediate protection of people and property while ensuring that DoD Components are complying with applicable environmental regulations.

Findings

DoD personnel did not properly plan and manage the MEC program at the JRM. Specifically, DoD personnel did not consistently implement safety standards and quality assurance (QA) controls during MILCON projects because:

- DoD personnel did not always agree on how to interpret the scope and applicability of explosives safety standards when performing MEC clearance procedures for MILCON projects;
- JRM and Navy Facilities and Engineering Command (NAVFAC) officials did not provide appropriate resources or alternate funding sources for MEC clearance and monitoring of MILCON projects to ensure that contractors followed the proper standards; and
- Navy policies did not provide JRM officials the flexibility to manage risks related to MEC clearance by obtaining deviations from explosives safety standards in a timely manner; nor did the policies provide a way to propose alternative methods for MEC clearance that could potentially reduce safety risks to contractors.

In addition, DoD personnel did not establish adequate plans and processes for managing MEC clearance requirements and safety concerns for MILCON projects on Guam. Specifically,

- DoD personnel did not develop accurate budgets and schedules for MILCON projects that required MEC clearance. This occurred because personnel inconsistently identified MEC clearance costs in DD Forms 1391, "FY____ Military Construction Data"; had difficulty calculating MEC clearance costs when more stringent enforcement was made to the

Results in Brief

Audit of the Department of Defense's Processes to Identify and Clear Munitions and Explosives of Concern During Construction on Guam

Findings (cont'd)

implementation of MEC clearance methods than what was previously completed; and did not schedule sufficient time in projects to conduct clearance efforts.

- NAVFAC contracting officers did not clearly define MEC clearance specifications in MILCON contracts or assess the past performance of construction contractors as part of the evaluation and source-selection process for MILCON projects. This occurred because contracting officials did not leverage the expertise of each office involved in MEC clearance activities during the source-selection process to fully understand the requirements, and officials did not conduct an assessment of the MEC clearance methods and evaluations of previous MEC clearance activities by both the contractor and the subcontractor.
- NAVFAC personnel did not effectively administer the MEC portion of MILCON contracts related to QA and compliance with contract terms and conditions. This occurred because NAVFAC construction management engineers did not ensure that contractors followed JRM instructions to immediately notify emergency responders when MEC was located on sites. Additionally, NAVFAC personnel's efforts to address MEC in MILCON contracts were uncoordinated, conflicting, and in some cases outside the duties, responsibilities, or authorities of the various NAVFAC personnel.

From FYs 2015 through 2017, DoD personnel did not adequately plan for and implement MEC standards; therefore, JRM personnel incurred cost increases of about $100 million directly related to MEC clearance for MILCON projects. DoD officials responsible for executing MILCON projects also continued to have difficulty completing projects within the planned costs and schedules because of the need to address MEC.

In addition, because of the delays in completing critical MILCON projects, DoD officials are unable to conduct joint exercises in the region, decreasing readiness and negatively impacting DoD operations. Furthermore, because of inadequate staffing and resources, MEC QA personnel were unable to conduct adequate QA over MEC clearance activities, resulting in safety concerns for DoD personnel, contractors, and civilians on Guam.

Recommendations

Among other recommendations, we recommend that the Under Secretary of Defense for Acquisition and Sustainment issue guidance for estimating and presenting MEC clearance costs in DD Form 1391 that will enable personnel to assess the accuracy of the MEC budget and enable DoD leaders to refine future MILCON projects. We also recommend that the Chief of Naval Operations conduct analysis to determine if a more efficient process exists to approve deviation requests from installation commanders in a timely manner to reduce further schedule delays and associated cost increases for MILCON projects.

In addition, we recommend that the NAVFAC Commander perform a review of staffing levels and equipment required to perform adequate contract oversight at NAVFAC Marianas and identify potential solutions to address vacant positions; and conduct an analysis to examine potential funding sources to determine if a more accurate and equitable method is available for MEC clearance QA.

Management Comments and Our Response

The Deputy Assistant Secretary of Defense for Infrastructure, responding for the Under Secretary of Defense for Acquisition and Sustainment, agreed with

Comments (cont'd)

the recommendations; therefore, the recommendations to that office are resolved but will remain open. We will close these recommendations when the Deputy Assistant Secretary provides documentation of the policy or guidance to address these recommendations.

The Logistics - Supply Chain Operations Director, responding for the Chief of Naval Operations, agreed with the recommendation to assess the deviation request approval process; therefore, the recommendation is resolved but will remain open. We will close this recommendation when we confirm that the assessment is completed.

The NAVFAC Inspector General, responding for the NAVFAC Commander, NAVFAC Pacific Commander, and NAVFAC Marianas Commander agreed with 10 recommendations. Comments from the NAVFAC Inspector General:

- addressed the specifics for two recommendations related to reporting MEC encounters to appropriate authorities in a timely manner and distributing after-action reports. The associated actions addressed the recommendations; therefore, the recommendations are closed.
- addressed the specifics for six recommendations related to identifying staffing requirements, equipment necessary for quality assurance personnel, and alternate funding sources for performing MEC clearance; providing MEC training; assessing contractor capabilities before contract award; and reviewing past practices of contractor oversight personnel. Therefore, the recommendations are resolved, but will remain open until NAVFAC provides documentation that the proposed actions are completed.
- did not address the specifics for two recommendations related to obtaining after action reports on existing contracts and evaluating contractor-requested alternative methods for MEC clearance therefore, the recommendations remain unresolved.

We request the NAVFAC Inspector General provide additional comments on the final report related to the two unresolved recommendations.

The JRM Commander agreed with one recommendation regarding the use of privately owned vehicles; the comments and associated actions addressed the recommendation and we consider the recommendation closed. The JRM Commander agreed with five other recommendations related to developing a plan to ensure a tool to track MEC encounters is adequately resourced, implementing previously identified corrective actions, consistently processing deviation requests, construction planning, and developing policy to establish roles of the stakeholders in the MEC clearance process; however, the proposed actions do not meet the intent of the recommendations; therefore, the recommendations are unresolved and will remain open. We request the JRM Commander provide additional comments on the final report related to these five recommendations.

Please see the Recommendations Table on the next page for the status of the recommendations.

Recommendations Table

Management	Recommendations Unresolved	Recommendations Resolved	Recommendations Closed
Under Secretary of Defense for Acquisition and Sustainment		1.a, 1.b, 1.c	
Chief of Naval Operations		2	
Commander, Naval Facilities Engineering Command		3.a, 3.b, 3.c	
Commander, Naval Facilities Engineering Command Pacific	4.b	4.a, 4.c	4.d
Commander, Joint Region Marianas	5.b, 5.c, 5.d, 5.e, 5.f		5.a
Commander, Naval Facilities Engineering Command, Marianas	6.b	6.c	6.a

Please provide Management Comments by July 16, 2020.

Note: The following categories are used to describe agency management's comments to individual recommendations.

- **Unresolved** – Management has not agreed to implement the recommendation or has not proposed actions that will address the recommendation.
- **Resolved** – Management agreed to implement the recommendation or has proposed actions that will address the underlying finding that generated the recommendation.
- **Closed** – OIG verified that the agreed upon corrective actions were implemented.

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

June 16, 2020

MEMORANDUM FOR UNDER SECRETARY OF DEFENSE FOR ACQUISITION AND SUSTAINMENT
COMMANDER, U.S. INDO-PACIFIC COMMAND
AUDITOR GENERAL, DEPARTMENT OF THE NAVY
AUDITOR GENERAL, DEPARTMENT OF THE AIR FORCE

SUBJECT: Audit of the Department of Defense's Processes to Identify and Clear Munitions and Explosives of Concern During Construction on Guam (Report No. DODIG-2020-093)

This final report provides the results of the DoD Office of Inspector General's audit. We previously provided copies of the draft report and requested written comments on the recommendations. We considered management's comments on the draft report when preparing the final report. These comments are included in the report. Management agreed with all recommendations.

The Deputy Assistant Secretary of Defense for Infrastructure agreed to address Recommendations 1.a, 1.b, and 1.c; therefore, the recommendations are considered resolved and open.

The Chief of Naval Operations agreed to address Recommendation 2; therefore, the recommendation is considered resolved and open.

The Naval Facilities Engineering Command Inspector General agreed to address Recommendations 3.a, 3.b, 3.c, 4.a, 4.c, and 6.c; therefore, the recommendations are considered resolved and open. The Inspector General did not fully address Recommendations 4.b and 6.b; the recommendations are unresolved and remain open. The Inspector General's comments and associated actions addressed Recommendations 4.d and 6.a; therefore, we consider the recommendations closed.

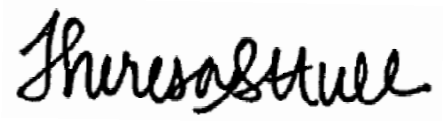
The Joint Region Marianas Commander's comments and associated actions addressed Recommendation 5.a; therefore, we consider the recommendation closed. The Commander did not fully address Recommendations 5.b, 5.c, 5.d, 5.e, and 5.f; the recommendations are unresolved and remain open.

As described in the Recommendations, Management Comments, and Our Response section of this report, Recommendations 1.a, 1.b, 1.c, 2, 3.a, 3.b, 3.c, 4.a, 4.c, and 6.c may be closed when we receive adequate documentation showing that all agreed-upon actions to implement the recommendations have been completed. Therefore, we request that the Under Secretary of Defense for Acquisition and Sustainment; Chief of Naval Operations; and Commander, Navy Facilities and Engineering Command, provide us within 90 days a response concerning specific actions in process or completed on these recommendations. The response should be sent to audacs@dodig.mil.

As discussed in the Recommendations, Management Comments, and Our Response section of this report, Recommendations 4.b, 5.b, 5.c, 5.d, 5.e, 5.f, and 6.b remain open. We will track these recommendations until an agreement is reached on the actions to be taken to address the recommendations, and adequate documentation has been submitted showing that the agreed-upon action has been completed.

DoD Instruction 7650.03 requires that recommendations be resolved promptly. Therefore, we request that the Commander of the Naval Facilities Engineering Command and the Joint Region Marianas Commander provide us within 30 days a response concerning specific actions in process or alternative actions proposed on the recommendations. The response should be sent to audacs@dodig.mil.

If you have any questions, please contact me at [redacted]



Theresa S. Hull
Assistant Inspector General for Audit
Acquisition, Contracting, and Sustainment

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Introduction

Objective

The objective of this audit was to determine whether DoD personnel implemented safety standards and quality assurance controls for addressing munitions and explosives of concern during military construction projects on Guam, and whether DoD personnel properly managed safety concerns and readiness related to munitions and explosives of concern on Guam in accordance with military standards and risk-management instructions. See Appendix A for scope and methodology and prior audit coverage.

Background

Joint Region Marianas (JRM) is a joint U.S. military command located on Guam. The JRM was established in accordance with congressional legislation implementing the recommendations of the 2005 Base Realignment and Closure Commission. The legislation required the consolidation of adjoining, but separate, military installations into a single joint base. The JRM began initial operational capability on January 31, 2009, and reached full operational capability on October 1, 2009. Under the JRM, U.S. Naval Base Guam and Andersen Air Force Base each maintain commanding officers, who oversee their respective mission requirements and operations, and JRM officials, who oversee support services, policies, and resources for the joint base.

In addition to this audit, we concurrently performed an audit on the military construction (MILCON) process at the JRM. The results of that audit are discussed in DODIG Report No. DODIG-2020-040, "Audit of Cost Increases and Schedule Delays for Military Construction Projects at Joint Region Marianas," December 11, 2019. The report states that the Deputy Assistant Secretary of Defense for Facilities Management, Naval Facilities Engineering Command (NAVFAC), Air Force, and Defense Logistics Agency (DLA) officials experienced schedule delays and cost increases for nine MILCON projects valued at $574.4 million at the JRM; however, Guam's unique characteristics and environment present challenges in planning and managing MILCON in the region.

Munitions and explosives of concern (MEC) was one of the eight causes discussed in the report for the schedule delays and cost increases. Of the nine projects, six experienced schedule delays and cost increases because DoD officials did not plan for the technical specifications of MEC clearance requirements as implemented by MEC Quality Assurance representatives. See Appendix E for additional details on the cost increases and schedule delays associated with MEC clearance.

Defense Policy Review Initiative

In October 2005, the United States and the Government of Japan agreed to move approximately 8,000 Marines and 9,000 dependents from Okinawa, Japan, to a new installation on Guam as part of the Defense Policy Review Initiative.[2] The United States later determined that some personnel would move to other locations, instead of all 17,000 personnel moving to Guam. As of January 2019, Marine Corps officials planned to station about 1,700 active duty Marines on Guam on a permanent basis, assign another 3,100 active duty Marines to Guam on a rotational basis, and allow about 1,700 dependents to accompany their sponsors to the island. Congress set the maximum threshold for the MILCON budget for the new installation at $8.7 billion, with the Government of Japan funding up to $3.1 billion. Marine Corps officials determined that the new installation would be named Camp Blaz and forces would start to transition to the island by 2024. See Appendix B for background information on the MILCON programming process.

Munitions and Explosives of Concern

MEC comprises unexploded ordnance, discarded military munitions, and munitions constituents present in concentrations high enough to pose an explosive hazard. Unexploded ordnance includes military munitions that have been primed, fused, armed, or otherwise prepared for action; have been fired, dropped, launched, projected, or placed in such a manner as to constitute a hazard to operations, installations, personnel, or material; and remain unexploded, whether by malfunction, design, or any other cause. Discarded military munitions are military munitions abandoned without proper disposal or removed from storage in a military magazine or other storage area for the purpose of disposal. Federal law defines munitions constituents as any materials originating from unexploded ordnance, discarded military munitions, or other military munitions, including explosive and non-explosive materials, and emission, degradation, or breakdown elements of such ordnance or munitions.[3] See the Glossary for key terms used in the report.

History of MEC on Guam

According to the book *Campaign in the Marianas*, Japanese aircraft bombed Guam on December 8, 1941, and after 2 days, the Japanese came ashore and assumed control of the island for the next 31 months.[4] On June 16, 1944, the cruiser *Honolulu*, battleships *Pennsylvania* and *Idaho*, and several destroyers, all supported by airplanes from accompanying aircraft carriers, bombarded the west coast of Guam for 2 hours. On July 8, 1944, the U.S. Navy conducted a naval bombardment

[2] An agreement between the Governments of Japan and the United States to move Marines and dependents from Japan to Guam.

[3] As defined in section 2710 (e)(3), title 10, United States Code (10 U.S.C. § 2710 [e][3]).

[4] *Campaign in the Marianas*, Philip A. Crowl, Center of Military History, U.S. Army, 1993 (first printed 1960).

of Guam that lasted 13 days. The Battle of Guam during World War II resulted in an estimated 11,000 items of MEC scattered across the island. Hazardous munitions have been found around Guam ranging from 20-millimeter projectiles to 1,000-pound bombs and including both U.S. and Japanese ordnance.

Because the MEC left behind by the air, sea, and land bombardment of Guam during World War II poses a safety threat, the DoD requires personnel at MILCON sites to follow a MEC clearance process. This process often complicates MILCON projects because, in some cases, soil from one location is relocated to a new site without being cleared for MEC or without proper documentation. In addition, the locations of buried burn pits and past discoveries of MEC have not been properly documented by DoD personnel, and civilians who have encountered MEC have improperly disposed of the ordnance or failed to inform the proper authorities, further complicating the logistics for the MEC clearance process for ongoing and future MILCON projects.[5]

MEC Clearance History

MEC clearance operations conducted during the first 70 years of MILCON projects on Guam became a "Recognize, Retreat, and Report" system for response by Explosives Ordnance Disposal teams. Contractors still use the "Recognize, Retreat, and Report" system for civilian construction on Guam that occurs outside the boundaries of the military installations. No records exist of any unintentional explosions or civilian casualties on Guam using the "Recognize, Retreat, and Report" method.

In 1974, the DoD established an explosives safety policy for MEC-contaminated land and initiated a study on the available capabilities to detect subsurface munitions. DoD officials also established procedures for handling contaminated real property. In 1983, a 37-millimeter projectile discovered in a canyon killed two 8-year-old boys playing near their home in California. In addition, in 2003, the Department of Defense Explosives Safety Board (DDESB) Technical Paper 16 established methodology to determine hazardous fragment distances considered in munitions safety distances.[6]

[5] A burn pit is an area devoted to the open-air combustion of trash.

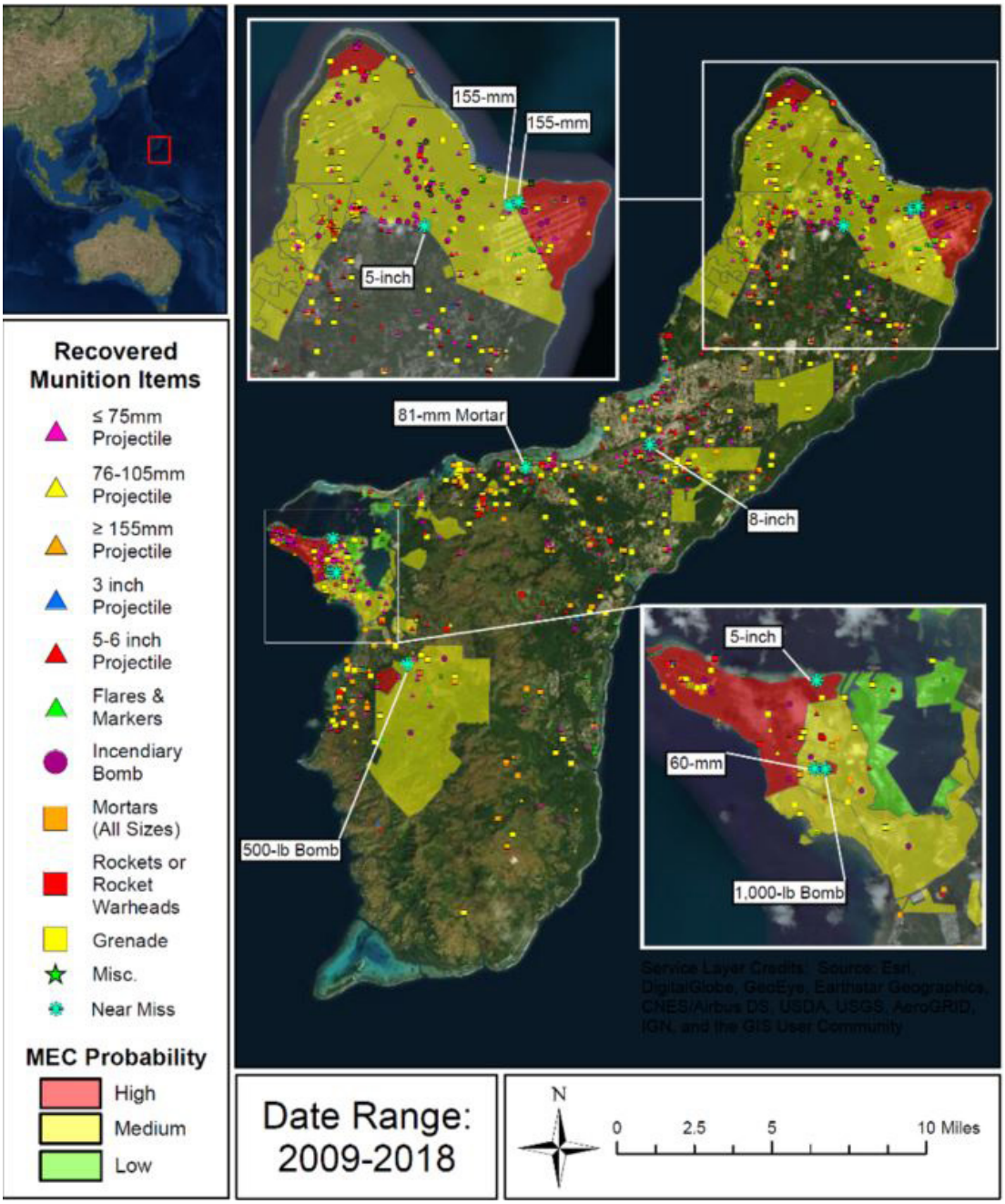
[6] DDESB officials are responsible for developing policy, conducting advocacy, and providing oversight of explosives safety within the DoD. DDESB Technical Paper 16, "Methodologies for Calculating Primary Fragment Characteristics," Revision 5, December 19, 2016. According to DoD 6055.09--STD, "DoD Ammunition and Explosives Safety Standards," August 21, 2009, the Hazardous Fragment Distance is defined as the distance at which the density of hazardous fragments become one per 600 ft^2 (55.7 m^2).

In 2004, a joint working group co-chaired by the Army and the DDESB and comprising representatives from the Navy, Air Force, and Marine Corps developed the current standards for clearing MEC in DoD Manual 6055.09.[7] The working group approved the manual to establish standards to protect personnel and property from explosives hazards associated with unexploded ordnance.

In September 2010, as planned military construction on Guam began to increase, the Commander of NAVFAC Pacific provided the Explosives Safety Submittal (ESS) for Guam to Naval Ordnance Safety and Security Activity (NOSSA) personnel for endorsement. In October 2010, NOSSA personnel endorsed the submittal and forwarded the document to the DDESB. The DDESB reviewed and approved the EES for construction support at the identified munitions response sites on October 18, 2010. Figure 1 shows MEC recovered on Guam from 2009 through 2018.

[7] DoD Manual 6055.09-M, volume 8, "DoD Ammunition and Explosives Safety Standards: Glossary," January 24, 2018. On January 13, 2019, the Under Secretary of Defense for Acquisition and Sustainment consolidated the eight volumes of DoD Manual 6055.09-M into a single publication, Defense Explosives Safety Regulation 6055.09, Edition 1. We did not review this publication as part of our audit because the construction processes we assessed were subject to DoD Manual 6055.09-M, volume 8.

Figure 1. MEC Recovered on Guam From 2009 Through 2018



Source: Naval Ordnance Safety and Security Activity.

DoD Organizations Responsible for MEC Clearance on Guam

Several DoD organizations are involved in the MEC clearance process. The DDESB, Office of the Chief of Naval Operations (OPNAV), and NOSSA personnel are responsible for issuing guidance, policy, and instructions regarding MEC clearance. NAVFAC Pacific and NAVFAC Marianas personnel provide pre- and post-award contracting and construction agent support for MILCON projects at the JRM.

DDESB

DDESB officials are responsible for developing policy, conducting advocacy, and providing oversight of explosives safety within the DoD. The DDESB consists of an executive director, a representative from each Military Service, civilians, and contractor staff. The DDESB executive director operates under the authority, direction, and control of the Deputy Assistant Secretary of Defense (Environment). The board issues technical papers for the DoD that include minimum qualifications for unexploded ordnance technicians and guidance for explosives safety site plans.[8] DDESB personnel are responsible for approving each ESS.

OPNAV

OPNAV officials issue instructions providing policy, defining authority, and assigning responsibilities for the explosives safety aspects of munitions response within the Navy. OPNAV Supply, Ordnance and Logistics Operations Division, N41, personnel are responsible for approving deviation requests submitted by Navy components.[9]

NOSSA

NOSSA officials issue instructions for the Navy that include explosives safety review, oversight, and verification of munitions responses. NOSSA staff provide technical clarification to Navy personnel relating to explosives safety criteria, and review deviation requests and make recommendations for approval or disapproval to OPNAV Supply, Ordnance and Logistics Operations Division, N41. In addition, NOSSA personnel are responsible for conducting periodic visits to Navy installations to assess their compliance with explosives safety criteria.

NAVFAC Pacific

NAVFAC Pacific officials provide engineering, environmental, acquisition, and infrastructure support to the Navy and Marine Corps within the Pacific region. As part of acquisition support, NAVFAC Pacific is responsible for awarding many of the MILCON projects on Guam before transferring the contracts to NAVFAC Marianas for post-award functions. NAVFAC Pacific officials awarded four of the seven MILCON projects discussed in this report. NAVFAC Marianas is one of five engineering commands operating under NAVFAC Pacific. See Appendix C for general information on each MILCON project discussed in this report.

NAVFAC Marianas

[8] DoD 6055.09-STD, "DoD Ammunition and Explosives Safety Standards," August 21, 2009, defines munitions response as response actions, including investigation, removal actions, and remedial actions to address the explosives safety, human health, or environmental risks presented by unexploded ordnance. Furthermore, the explosives safety submission provides a description of the reason for the munitions response, including the scope, significant differences anticipated, and maps.

[9] The term "deviation request" describes the group of various types of requests prepared by installation personnel to conduct work that does not conform to explosives safety standards.

NAVFAC Marianas personnel provide additional engineering, environmental, and acquisition support throughout the JRM.[10] NAVFAC Marianas awards MILCON contracts when the support is not provided by NAVFAC Pacific. NAVFAC Marianas personnel provide support for post-award MILCON projects on Guam, including construction and engineering support, contractor oversight, MEC clearance quality assurance, and contract closeout. The NAVFAC Marianas Commander also provides engineering support direction to the JRM Commander.

JRM

The JRM is 1 of 12 bases or regions established as a result of the 2005 Base Realignment and Closure recommendation to combine management support functions within the DoD to create joint bases. The Navy is the lead service at the JRM and the Commander of the Navy Installations Command controls and maintains infrastructure within the region. The JRM includes the installations known as Naval Base Guam and Andersen Air Force Base, as well as other DoD interests throughout the region, including the Marine Corps installation currently under construction on Guam. Specific geographic components of the JRM and the duties of their personnel relevant to this report include the following.

- **JRM Headquarters** – JRM command functions and explosives safety personnel are co-located with NAVFAC Marianas personnel on Nimitz Hill, situated near, but geographically separated from, Naval Base Guam.
- **Naval Base Guam** – Naval Base Guam is home to numerous Navy components supporting the Pacific fleet. Naval Base Guam is on the southern portion of the island and includes numerous noncontiguous parcels of land. Naval Base Guam Public Works officials complete most initial programming requests for MILCON projects for inclusion in the MILCON budget request. The site supports most of the Navy functions on Guam.
- **Andersen Air Force Base** – The 36th Wing is the installation host on Andersen Air Force Base in support of the Pacific Air Forces. The 36th Civil Engineering Squadron completes the initial programming for Air Force MILCON projects before providing the requests through the chain of command for inclusion in the Air Force MILCON budget request. Andersen Air Force Base is on the northern portion of Guam and also includes small parcels of land throughout the northern half of the island.

[10] The JRM includes Guam, Saipan, Tinian, and other islands.

- **Naval Base Guam Telecommunications Site, Finegayan** – This site is located in area of Guam adjacent to Andersen Air Force Base that will host the main cantonment area for the incoming Marine Corps personnel relocating as part of the Defense Policy Review Initiative. During our site visit to Guam in January 2019, the Marine Corps main cantonment area was undergoing site preparation and MEC clearance. The Marine Corps plans to construct more than 50 facilities on this site by FY 2024.

Air Force Civil Engineering Center–Pacific

Air Force Civil Engineering Center–Pacific officials provide construction-related support to Pacific Air Forces. Air Force Civil Engineering Center Pacific is one of the components within the Air Force that reviews and prioritizes MILCON projects and budgets for the projects completed by the Air Force on Guam.

Defense Logistics Agency

The DLA manages the global supply chain for the Military Services, other Federal agencies, and allied nations. In addition, DLA officials provide support to deployed warfighters, non-deployed warfighters, and U.S. military facilities and other U.S. Government agencies. Furthermore, DLA personnel were responsible for planning and programming an oil pipeline from Naval Base Guam to Andersen Air Force Base.

Explosives Ordnance Disposal Teams

Two Explosives Ordnance Disposal teams are located on Guam—the Navy's Explosives Ordnance Disposal Mobile Unit Five Detachment Guam and the Air Force's 36th Civil Engineering Squadron Explosives Ordnance Disposal team. These teams are responsible for disposing of identified MEC and have the option of either moving the MEC to a safe location for disposal, conducting render safe procedures, or destroying the unexploded ordnance where it is encountered.

MEC Quality Assurance Team

JRM and NAVFAC Marianas explosives safety personnel work together to complete MEC QA on Guam. The JRM Regional Explosives Safety Officer is responsible for the region's overall explosives safety program, of which MEC clearance is just one part. A JRM MEC QA specialist is responsible for ensuring that the JRM is operating in accordance with DoD and Navy explosives safety standards. In addition, NAVFAC Marianas employs a team of MEC QA personnel who are responsible for ensuring that contractors performing MEC clearance perform quality work in accordance with applicable explosives safety standards and contract terms.

MEC Criteria

DDESB Technical Papers

DDESB officials issued a series of technical papers related to explosives safety. The following are the technical papers most relevant to this report.

- DDESB Technical Paper 16 provides approved methodologies for calculating the characteristics of primary fragments. The primary fragmentation distances contribute to two distinct aspects of explosives safety for detonations in the open—maximum fragment distance and hazardous fragment distance. The maximum fragment distance determines fragmentation distances for intentional detonations.
- DDESB Technical Paper 18 provides the minimum qualification standards for personnel conducting MEC clearance.[11] The minimum qualification standards include the amount of experience, courses and training, logbooks of hours worked, and on-the-job training for personnel who support, conduct, or supervise MEC-related activities.
- DDESB Technical Paper 26 provides guidance for explosives safety site plans.[12] Technical Paper 26 provides guidance to support site plan preparation and facilitate efficient review at all levels. The explosives safety site planning process includes conducting and documenting a comprehensive assessment of existing and future potential explosion sites. Furthermore, Technical Paper 26 provides guidance on submissions of explosives safety site plans to the DDESB and explosives safety site plans that involve new or modified protective construction designs.

Naval Sea Systems Command

Naval Sea Systems Command Ordnance Pamphlet 5 provides explosives safety information and policies intended to control the hazards associated with munitions response by emphasizing safe and efficient operating procedures while providing the maximum possible protection to personnel and property.[13] Naval Sea Systems Command Ordnance Pamphlet 5 implements DoD explosives safety regulations and provides amplifying guidance that must be no less stringent than the DoD explosives safety regulations.

[11] DDESB Technical Paper 18, "Minimum Qualifications for Personnel Conducting Munitions and Explosives of Concern-Related Activities," September 1, 2016.

[12] DDESB Technical Paper 26, "Guidance for Explosives Safety Site Plans," January 30, 2014.

[13] Naval Sea Systems Command Ordnance Pamphlet 5, Volume 1, "Ammunition and Explosives Safety Ashore," Seventh Revision, Change 14, June 1, 2017.

Joint Region Marianas Policy

The JRM Commander issued a series of instructions addressing different issues related to the MEC program. JRM Instruction 8000.15A establishes organization roles, responsibilities, and processes of the JRM oversight program.[14] In addition, the Instruction establishes that the MEC Process Improvement Team governs the MEC oversight program.

JRM Instruction 8027.1 establishes the procedures for reporting and responding to potential unexploded ordnance discoveries on base.[15] The Instruction requires anyone who discovers potential unexploded ordnance to call the 911 Emergency Dispatch Center immediately to dispatch base security. The 911 Emergency Dispatch Center will dispatch base security and the appropriate Explosives Ordnance Disposal response team. The Explosives Ordnance Disposal team will coordinate directly with on-site security personnel to establish an exclusion zone perimeter and complete the actions necessary to remove the hazard.

See Appendix D for additional criteria related to MEC clearance.

Joint Region Marianas Explosives Safety Submission

On October 18, 2010, DDESB personnel approved a geographical ESS for construction support at munitions response sites on Guam. The ESS included tables of the munition with the greatest fragmentation distance for areas of concern including Finegayan, Apra Harbor, Ordnance Annex, Andersen-North Ramp, Andersen-Northwest Field, Andersen South, and Barrigada. In addition, the ESS included the required separation distances to promote safety during situations when unintentional detonations could occur. DDESB personnel reviewed and approved six amendments to the original ESS. The amendments to the ESS included establishment of additional areas of concern, and actions for low, moderate, and high probability areas.

Deviation Requests

Navy officials including the Chief of Naval Operations, Fleet Commanders, and Secretary of the Navy have the authority and are responsible for approving deviations depending on the type of deviation request submitted. Deviation requests include waivers, exemptions, and other types of requests.[16] A waiver is a written authority that permits temporary deviation from explosives safety standards for recurring readiness or operational requirements pending

[14] JRM Instruction 8000.15A, "Munitions and Explosives of Concern Oversight Program," November 30, 2018. The MEC Process Improvement Team members includes various JRM and NAVFAC personnel.

[15] JRM Instruction 8027.1, "Explosives Ordnance Disposal Operations," December 29, 2015.

[16] For consistency, we use deviation request throughout the report to refer to the various types of requests.

the completion of corrective measures to eliminate the waiver requirement. An exemption is a written authority that permits long-term noncompliance with explosives safety standards or recurring readiness or operational requirements. These exemptions are granted through congressional action or the proper authority within a DoD Component. The DoD explosives safety regulations delegate the deviation approval process to the Services.

Air Force and Navy officials followed significantly different processes when requesting deviations to exclusion zones or other MEC requirements for MILCON projects at installations around the world. Under the joint region construct at the JRM, the Navy is the lead Service and, therefore, responsible for MEC clearance for MILCON projects. When the JRM was established in October 2009, the Joint Region Marianas Commander assumed command of Andersen Air Force Base installation support functions and then delegated administration of those installation support functions to the 36th Wing Commander. However, because Andersen Air Force Base personnel are operating on a Navy installation, they follow the Navy's MEC clearance processes.

Review of Internal Controls

DoD Instruction 5010.40 requires DoD organizations to implement a comprehensive system of internal controls that provides reasonable assurance that programs are operating as intended and to evaluate the effectiveness of the controls.[17] NAVFAC internal controls over contract issuance, administration, and MEC quality assurance were ineffective as they applied to the audit objectives. NAVFAC personnel issued contracts without including adequate specifications related to MEC, did not evaluate potential contractors appropriately, and did not have controls in place to ensure that contractors performed MEC clearance and provided associated reports in accordance with contract terms or DoD explosives safety standards. We will provide a copy of this report to the senior official in charge of internal controls at NAVFAC and the JRM.

[17] DoD Instruction 5010.40, "Managers' Internal Control Program Procedures," May 30, 2013.

Finding

DoD Personnel Did Not Properly Plan and Manage MEC at the JRM

DoD personnel did not properly plan and manage the MEC program at the JRM. Specifically, DoD personnel did not consistently implement safety standards and QA controls during MILCON projects because:

- DoD personnel did not always agree on how to interpret the scope and applicability of explosives safety standards when performing MEC clearance procedures for MILCON projects;
- JRM and NAVFAC officials did not provide appropriate resources or alternate funding sources for MEC clearance and monitoring of MILCON projects to ensure that contractors followed the proper standards; and
- Navy policies did not provide JRM officials the flexibility to manage risks related to MEC clearance by obtaining deviations from explosives safety standards in a timely manner, nor did the policies provide a way to propose alternative methods for MEC clearance that could potentially reduce safety risks to contractors.

In addition, DoD personnel did not establish adequate plans and processes for managing MEC clearance requirements and safety concerns for MILCON projects on Guam. Specifically:

- DoD officials did not develop accurate budgets and efficient schedules for MILCON projects that required MEC clearance. This occurred because personnel inconsistently identified MEC clearance costs in the DD Forms 1391 "FY____ Military Construction Data;" had difficulty calculating MEC clearance costs when more stringent enforcement was made to the implementation of MEC clearance methods than what was previously completed; and did not schedule sufficient time in projects to conduct clearance efforts.
- NAVFAC contracting officers did not clearly define MEC clearance specifications in MILCON contracts or assess the past performance of construction contractors as part of the evaluation and source-selection process for MILCON projects. This occurred because contracting officials did not leverage the expertise of each office involved in MEC clearance activities during the source-selection process to fully understand the requirements, and officials did not conduct an assessment of the MEC clearance methods and evaluations of previous MEC clearance activities by both the contractor and subcontractor.

- NAVFAC personnel did not effectively administer the MEC portion of MILCON contracts related to quality assurance and compliance with contract terms and conditions. This occurred because NAVFAC construction management engineers did not ensure that contractors followed JRM instructions to immediately notify emergency responders when MEC was located on sites. Additionally, NAVFAC personnel's efforts to address MEC in MILCON contracts were uncoordinated, conflicting, and in some cases, outside the duties, responsibilities, or authorities of the various NAVFAC personnel.

From FYs 2015 through 2017, DoD personnel did not adequately plan for and implement MEC standards; therefore, JRM personnel incurred cost increases of about $100 million directly related to MEC clearance for MILCON projects. DoD officials responsible for executing MILCON projects continue to have difficulty completing projects within the planned costs and schedules because of the need to address MEC.[18] In addition, because of the delays in completing critical MILCON projects, DoD officials are unable to conduct joint exercises in the region, decreasing readiness and negatively impacting DoD operations. Furthermore, because of inadequate staffing and resources MEC QA personnel were unable to conduct adequate QA over MEC clearance activities resulting in safety concerns for DoD personnel, contractors, and civilians on Guam.

DoD Personnel Did Not Consistently Implement Explosives Safety Standards and QA Controls for MILCON Projects

DoD personnel did not consistently implement explosives safety standards and QA controls when performing MEC clearance for MILCON projects at the JRM. Specifically, DoD officials did not consistently interpret explosives safety standards for MILCON projects and in many cases did not agree on the applicability and scope of those standards. Furthermore, DoD officials did not ensure that appropriate resources were available for MEC clearance or QA monitoring of contractors performing MEC clearance. In addition, Navy policies did not give JRM and NAVFAC officials the flexibility to deviate from explosives safety standards by obtaining deviations in a timely manner or contain procedures for proposing new or alternative methods for conducting MEC clearance.

[18] DoD officials could not provide documentation identifying a specific number of days delayed related to MEC clearance for some projects because projects were impacted by other issues other than MEC that resulted in delays.

DoD Officials Did Not Consistently Implement Explosives Safety Standards

DoD officials did not consistently implement DoD and Navy explosives safety standards because personnel did not always agree on how to interpret the applicability and scope of those standards.

DoD officials did not consistently implement DoD and Navy explosives safety standards because personnel did not always agree on how to interpret the applicability and scope of those standards.[19] For example, NAVFAC Marianas contracting officers and DLA officials did not include Ordnance Pamphlet 5 requirements to apply explosives safety policies off base to Navy personnel and property when planning for the DLA pipeline project because they did not believe that the requirements applied to the project. However, NAVFAC MEC QA officials stated that the standards should have been implemented for the project.

In addition, NAVFAC Marianas personnel did not develop contract requirements that complied with Ordnance Pamphlet 5 standards for digital geophysical mapping for two maintenance hangar projects. The contracting officer solicited requirements and contractors proposed methods that did not require MEC clearance to full construction depth. The contracting officer could have reduced contract delays and cost increases by including MEC subject-matter experts during the pre-award contracting process.

NAVFAC Contracting Officers and DLA Programming Personnel Did Not Include Ordnance Pamphlet 5 Requirements When Planning MILCON Project

NAVFAC Marianas and DLA personnel did not correctly interpret requirements established in Ordnance Pamphlet 5 to apply explosives safety policies off base to Navy personnel and property for the DLA pipeline project based on their interpretation of the scope and applicability of explosives safety standards off base. When NAVFAC and DLA personnel planned for MEC clearance in the DD Form 1391 for the DLA pipeline MILCON project, they planned to conduct MEC clearance only for the on-base portion of the project. According to NAVFAC and DLA personnel, they did not plan for MEC clearance for the off-base portion of the project because they did not believe the same MEC clearance procedures were required for off-base construction. NAVFAC, DLA, or Navy personnel did not provide any documentation or guidance that stated whether MEC clearance procedures were required when DoD construction occurred off base. However, NOSSA instruction 8020.15D states

[19] Officials from the JRM, NAVFAC, the DLA, and multiple levels of the Navy, Air Force, and Marine Corps have various roles related to programming, scheduling, and obtaining MEC clearance on Guam.

that an ESS is required for all ground-disturbing activities where MEC is known or expected to be present. The ESS is the document that details how explosives safety standards will be applied to a project. In the original programming of the project, DLA programming officials included only $400,000 for environmental remediation, including MEC clearance.

DLA personnel and NAVFAC contracting personnel stated that they made this decision based on their understanding of MEC requirements after discussions with NOSSA personnel. NAVFAC and DLA contracting officials could not provide documentation of these discussions and NAVFAC MEC QA personnel denied advising that explosives safety standards were not applicable for off-base construction. However, according to DLA personnel, after the project was awarded, NOSSA officials informed NAVFAC and the DLA that MEC clearance was required for the off-base portion of the 15.7-mile long pipeline, which prompted schedule delays and cost increases. NAVFAC personnel stated that the off-base MEC clearance caused delays and resulted in having to compensate the contractor with additional days to complete the project.

In addition, NAVFAC personnel stated that the Government of Guam does not require private construction projects off base to perform MEC clearance to the same standards that the DoD requires for on-base construction. NAVFAC Marianas contracting personnel stated that, based on previous commercial off-base construction projects and conversations with NAVFAC Marianas MEC QA personnel, they believed that MEC clearance was only required on base. However, NAVFAC Marianas MEC QA personnel stated that they did not advise contracting personnel that MEC clearance was not required off base.

As a result, DLA officials did not anticipate the requirement—or the cost—for MEC clearance for the off-base portion of the DLA pipeline. Once NAVFAC Marianas contracting officials awarded the construction contract, NOSSA officials informed NAVFAC that off-base clearance would be required. NAVFAC Marianas officials used $20 million in Operations and Maintenance funding to pay for this additional MEC clearance. According to NAVFAC Marianas contracting personnel, in addition to using the Operations and Maintenance funding for the off-base MEC clearance costs, they requested an above-threshold reprogramming of $5 million in MILCON funding to pay the contractor an equitable adjustment for the delays caused by the suspension of work for the off-base MEC clearance.[20]

[20] If a MILCON project's costs increase more than 25 percent of the amount appropriated, the DoD must notify Congress of the reasons and the funds proposed to finance the increase. This is referred to as an above-threshold reprogramming. We discuss details of the funding for this project in DODIG Report No. DODIG-2020-040, "Audit of Cost Increases and Schedule Delays for Military Construction Projects at Joint Region Marianas," December 11, 2019.

Ordnance Pamphlet 5 Requirements for Digital Geophysical Mapping Scanning Not Followed

NAVFAC Marianas contracting personnel did not incorporate Ordnance Pamphlet 5 requirements for digital geophysical mapping into contract requirements for MILCON projects and MEC QA personnel did not enforce the Ordnance Pamphlet 5 requirements effectively. Ordnance Pamphlet 5 requires that MILCON contractors perform MEC clearance in the construction footprint. Ordnance Pamphlet 5 also states that, when the depth of construction exceeds the ability of the geophysical instruments used, the soil must be removed in layers. Therefore, contractors using metal detectors to scan for MEC were limited to removing soil in 6-inch layers based on equipment detection limits for a 20-millimeter munition. However, when awarding the contracts for the construction of four hangars on Guam, NAVFAC contracting personnel did not include the requirement for digital geophysical mapping scanning below 4 feet because previous MILCON projects at JRM were completed without similar requirements.[21]

NAVFAC Marianas contracting personnel awarded contracts for the hangars in December 2014 and February 2015 with requirements to perform a digital geophysical mapping scan at a depth of 4 feet instead of scanning to the construction depth as required by Ordnance Pamphlet 5. Contracting officers stated that after contractors completed the digital geophysical mapping MEC clearance on the first two hangars, MEC QA personnel changed the enforcement of requirements to more stringent requirements than what was previously completed.

For example, MEC QA personnel's change to more stringent enforcement of MEC requirements significantly affected construction timelines for the series of four maintenance hangars. NAVFAC officials were able to construct the first two hangars without significant MEC clearance delays. However, NAVFAC officials completed the initial two hangars without fully meeting Ordnance Pamphlet 5 requirements related to construction depth. Subsequently, the remaining two projects experienced significant delays as a result of the more stringent enforcement. Air Force officials at Andersen Air Force Base stated that for two hangars that were completed without MEC delays, the digital geophysical mapping scanning was done to only 4 feet deep, whereas the MEC QA personnel enforced Ordnance Pamphlet 5 explosives safety standards that required scanning for MEC to construction depth for the two additional maintenance hangars.

[21] NAVFAC Pacific and NAVFAC Marianas contracting personnel each awarded contracts for Air Force hangars at the JRM.

Although the Ordnance Pamphlet 5 requirements did not change, MEC QA personnel did not enforce those requirements until May 2015 and July 2015, respectively, after contractor personnel had already completed the digital geophysical mapping scan for the two maintenance hangars in accordance with the contract requirements. According to NAVFAC Marianas personnel, MEC QA personnel rejected the QA approval of the MEC work plan and directed that NAVFAC require that contractors complete the MEC clearance in layers to comply with Ordnance Pamphlet 5. As of January 2019, Air Force and NAVFAC officials at the JRM have experienced a total of 2 years and 6 months of delays related to MEC for the two Air Force maintenance hangars on Andersen Air Force Base.

JRM and NAVFAC Officials Did Not Ensure Appropriate Personnel and Equipment Were Available for MEC Clearance Activities

JRM and NAVFAC officials did not ensure that appropriate personnel were available to manage MEC clearance for MILCON projects or that staff had adequate expertise to understand the impact of MEC on their duties. Additionally, JRM and NAVFAC Marianas personnel did not have adequate personnel or equipment to perform sufficient QA oversight for MEC clearance conducted throughout the region. NAVFAC officials responsible for resourcing projects did not consider the complexity of conducting MEC clearance on Guam as part of their resourcing procedures. Furthermore, NAVFAC officials could better address the impact of MEC requirements on future MILCON projects by properly analyzing the MEC encountered, but do not have the required resources to develop these data. Finally, NOSSA personnel determined that resourcing deficiencies existed at the JRM during technical assist visits; however, JRM officials did not implement sufficient corrective actions to address the NOSSA findings.

NAVFAC Marianas Did Not Have Sufficient Personnel or Personnel With Adequate Experience to Manage MEC Clearance for MILCON Projects

NAVFAC Marianas officials stated that they have experienced ongoing challenges recruiting personnel with experience and the required qualifications for many positions, leaving NAVFAC Marianas shorthanded and limited in the level of support it can provide as construction contract agents. NAVFAC officials stated that Guam does not have adequate training for construction trades on the island; therefore, NAVFAC officials must recruit individuals from outside the island who have construction experience and are qualified to perform quality assurance. Guam is in a remote location in the Pacific Ocean and transportation to and from the island is

lengthy and expensive, further complicating recruitment efforts. NAVFAC Marianas officials stated that they have multiple job vacancies they are unable to fill or retain personnel for, resulting in increases in workload for current personnel.[22]

JRM and NAVFAC Marianas personnel conducted analysis of their MEC staffing and identified that a combined 24 personnel were needed to meet their needs during a March 2018 NOSSA Drumbeat meeting.[23] As the MILCON efforts in the JRM increase as a result of the Defense Policy Review Initiative, NAVFAC Marianas officials' workload will continue to increase, making it imperative that open vacancies are filled in a timely manner. The NAVFAC Commander should perform a review to determine MEC QA staffing requirements at NAVFAC Marianas and identify potential solutions to fill vacant positions.

NAVFAC contracting officers and construction management engineers do not have adequate knowledge or familiarity with explosives safety standards and the specific MEC clearance requirements. During our interviews, NAVFAC construction management engineers made inaccurate statements about MEC clearance requirements. We also noted incorrect statements regarding explosives safety standards in documents produced by contracting personnel. For example, multiple contracting officers and construction management engineers attributed changes to MEC standards in approximately 2015, including the requirement to perform MEC clearance in layers to full construction depth, as a major impact on their MILCON projects. However, we determined that the changes they referenced were not actually changes to the requirements, but rather increased enforcement of standards that were already in place.

In addition, a NAVFAC contracting officer inaccurately stated that MEC QA personnel delayed inspecting soil, which subsequently could not be certified as clean. Contractors, not Government personnel, are responsible for certifying that soil is clean and free of MEC; therefore, any delay in certifying the soil as safe should be attributed to the contractor. The contracting officer explained that a pile of soil was awaiting inspection and ready to be certified as clean by MEC QA personnel; however, MEC QA personnel did not inspect the soil in a timely manner. The JRM ESS, as approved by the DDESB, establishes that qualified unexploded ordnance technicians and quality control specialists are the parties responsible for certifying that material as safe, not MEC QA personnel. Unexploded ordnance technicians and quality control specialists are contractor personnel. Therefore,

[22] As of January 2019, NAVFAC Marianas MEC QA personnel consisted of one staff member with about 8 years of experience at the JRM, three staff members with less than a year of MEC QA experience each, and an experienced program manager with 1 year of experience specific to the JRM. Additionally, the JRM MEC QA specialist had been in his position for less than a year, but had previously been employed by NAVFAC as a MEC QA specialist for approximately 1.5 years.

[23] The term assigned to the re-occurring meetings (usually weekly) between NOSSA, JRM, NAVFAC, and other parties to discuss MEC-related issues affecting operations on JRM.

the contracting officer's statement that the MEC QA should have certified the soil is inaccurate. The NAVFAC Pacific Commander should issue guidance and provide training to ensure that NAVFAC personnel involved in MILCON projects on Guam are familiar with explosives safety standards, MEC issues affecting ongoing and future MILCON projects, and the roles and responsibilities of each office involved in the MEC clearance process.

NAVFAC Marianas and JRM Did Not Have Sufficient MEC QA Personnel or Equipment to Perform Adequate QA for JRM MILCON Projects

NAVFAC Marianas and JRM MEC QA personnel performed minimal QA for MEC clearance for MILCON projects because of limited staffing and resources, and the QA performed was insufficient given the large volume of MILCON ongoing on Guam. Furthermore, shortages also resulted in MEC QA personnel not always being able to review and approve MEC work plans in a timely manner, which caused expensive contractual adjustments for the delays caused by the Government. This occurred because JRM and NAVFAC officials did not have sufficient resources available to staff the MEC QA offices according to MILCON demands.

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NAVFAC Marianas Did Not Have Sufficient MEC QA Personnel

NOSSA personnel expressed significant concern in previous technical assist reports regarding the limited number of MEC QA personnel available to handle the workload at the JRM. As of January 2019, NAVFAC Marianas had only four personnel assigned to perform MEC QA. Three of these personnel were assigned to the Marine Corps main cantonment area, as JRM leadership designated this area as a priority. The remaining MEC QA specialist was assigned to handle the requirements for both the Navy and Air Force.

NAVFAC contracting officers were required to modify contracts, resulting in significant cost increases related to a lack of MEC QA personnel at the JRM. The MEC QA specialist assigned to cover the Navy and Air Force requirements stated that he has approximately 300 active projects going on at any point in time and confirmed that he is unable to meet some of the demands of this workload in a

timely manner.[24] As a result, these staffing shortages caused delays and increased costs for JRM MILCON projects. Contractors submit requests for equitable adjustment when the lack of MEC QA personnel hinders their ability to perform the contract. For example, one contracting officer stated that the contractor requested an equitable adjustment of more than $100,000 per month for delays related to a MEC work plan review which must be conducted by a MEC QA specialist. As a result of 7 months of delays related to MEC clearance, including the work plan review delay, the contractor requested an adjustment of $1.8 million for standby of project management, extension of insurance policies, warehouse space rental, costs for standby of specialty equipment, and other costs related to the delay.

JRM officials further increased the impact of MEC QA personnel shortages by extending the hours that MEC clearance occurred within the region. The NAVFAC Marianas Commander requested and the DDESB approved an ESS amendment that allowed MEC clearance to occur at night to reduce the number of personnel impacted by MEC clearance during daytime operations; however, no adjustments were made to ensure that MEC QA personnel would be available for nighttime MEC clearance. MEC QA personnel stated that they have not been authorized additional hours to perform nighttime MEC QA. Instead, according to MEC QA personnel, they adjusted their daytime work schedules to cover the nighttime work, thereby limiting the number of MEC QA personnel available to provide support during the day at the JRM. Although contractors for some projects are performing MEC clearance at night, contractors are still performing MEC clearance activities during regular work hours as well; resulting in reduced QA oversight across the multiple projects simultaneously occurring at any given time.

QA Personnel Potentially Did Not Have Sufficient Equipment to Perform QA Duties

In addition to personnel shortages, MEC QA personnel potentially lacked the necessary testing equipment and government vehicles for conducting MEC QA. NAVFAC Marianas MEC QA personnel stated that they did not have the necessary testing equipment, such as metal detectors, for inspecting and verifying MEC clearance. MEC QA personnel inspect grids cleared by contractors and require testing equipment to inspect and verify that MEC clearance efforts are completed properly and according to the required standards. Although NAVFAC MEC QA specialists stated that some shared equipment was available for their use, not enough equipment was available for QA specialists to fulfill their daily requirements for contractor oversight. Specifically, MEC QA personnel are

[24] The 300 projects include MILCON projects in various stages of development, as well as minor construction, sustainment, repairs, and any other efforts that may require MEC clearance. MEC QA personnel are responsible for reviewing MEC clearance work plans, managing various MEC related documents for NAVFAC, and conducting QA of contractors that perform MEC clearance.

responsible for verifying that contractors are removing metal from soil; however that is not possible without proper metal detecting equipment. As a result, MEC QAs sometimes had to rely on personal equipment because NAVFAC officials did not provide the necessary equipment to perform the required MEC QA duties. Although additional testing equipment is still required to perform adequate QA at the JRM, a MEC QA specialist for the Marine Corps main cantonment area stated that NAVFAC was able to get equipment specifically for that site in late 2018. The NAVFAC Commander should conduct a study to determine the amount of equipment necessary for MEC QA positions to appropriately provide adequate oversight and identify a solution to obtain the necessary equipment the Commander's study deems necessary to reduce contract delays related to MEC clearance oversight.

QA Personnel Required to Use Personal Vehicles to Perform QA Duties

In addition, JRM officials potentially did not provide enough vehicles for QA personnel to perform MEC clearance; resulting in QA personnel supplementing Government resources without reimbursement and JRM officials potentially incurring an Antideficiency Act Violation. A JRM explosives safety specialist stated that he used his privately owned vehicle to perform his required QA for MEC clearance because JRM officials did not always provide a suitable Government vehicle. When the specialist began employment with the JRM in April 2018, a shared Government sedan was available for explosives safety staff use; however, the sedan could only be used sporadically based on availability and the conditions of the construction sites, which sometimes had unpaved roads and wet conditions that the sedan could not navigate.

In December 2018, the JRM safety manager submitted a request for a vehicle better suited to the explosives safety specialist's needs. Four months later, after multiple communications to clarify the request and determine the type of vehicle needed for MEC QA work, a NAVFAC Marianas transportation specialist approved the request in March 2019 for a four-wheel-drive sport utility vehicle. The transportation specialist stated that the request would take 6 to 8 months to fill; however, as of March 2020, this vehicle was still not available for use. To reduce the impact of this delay on explosives safety operations, in March 2019, the explosives safety specialist received a Government-owned four-wheel drive vehicle on loan from another JRM function; however, the vehicle was shared with other departments and was not always available.

The JRM explosives safety specialist estimated that he used his privately owned vehicle to drive about 200 to 300 miles per week from the start of his employment in April 2018 through March 2019, when he received the Government-owned

four-wheel drive vehicle.[25] The loaned vehicle and the eventual arrival of the vehicle dedicated to the explosives safety specialist should eliminate the need for the specialist to use his privately owned vehicle.

However, the explosives safety specialist is entitled to receive reimbursement in accordance with Joint Travel Regulations for those occasions when the Government was unable to provide a suitable vehicle.[26] If the explosives safety specialist used his own vehicle without reimbursement for Government duties and sufficient funds were not available for the reimbursement, JRM personnel may have violated the Antideficiency Act. The Joint Region Marianas Commander should determine whether personnel were required to use their privately owned vehicles to perform the Government's MEC quality assurance mission, retroactively reimburse employees for any mileage that employees can confirm, and determine whether officials committed an augmentation of appropriated funds potentially in violation of the Antideficiency Act.

NAVFAC Officials Did Not Consider the Complexity of MEC Clearance on Guam When Developing Policy for Funding Projects

NAVFAC Headquarters and regional personnel manage the supervision, inspection, and overhead surcharge in a manner that does not reflect the complexity of the MEC clearance support required for MILCON on Guam. Specifically, NAVFAC Headquarters personnel charge DoD customers a flat fee of 6.2 percent of the MILCON project cost for project support and management in all locations outside of the continental United States. However, Guam has unique characteristics that make providing support more complicated—it is a U.S. territory thousands of miles from the U.S. mainland, a former battlefield, and a location with substantial MILCON.

By not implementing increased supervision, inspection, and overhead costs related to the added support required to address MEC during MILCON on Guam, NAVFAC Headquarters personnel placed additional pressure on personnel on Guam. Increased supervision, inspection and overhead rate, proportional to the amount of work required on Guam, would allow NAVFAC Marianas officials to obtain additional equipment and thereby provide better overall MILCON support.

Alternatively, the NAVFAC Marianas Commander stated that MEC costs could potentially be viewed as explosives safety compliance costs rather than costs attributed to a MILCON project. By categorizing MEC QA as explosives safety

[25] The explosives safety specialist estimated this total based on two to three trips per week to and from various installations and his residence on Guam at 100 miles per round trip. The specialist did not provide a log.

[26] Joint Travel Regulations 020101, "Transportation Allowance," allows the Government to complete one of the following to meet transportation needs: 1) provide Government transportation, 2) purchase commercial transportation on behalf of the traveler, 3) reimburse the traveler for personally purchased transportation, or 4) reimburse the traveler for use of a privately owned vehicle.

compliance costs instead of tying funds directly to a specific MILCON project, the work could potentially be funded from other funding sources rather than as part of the set Supervision, Inspection, and Overhead costs that NAVFAC receives for managing the construction project, which could result in increased resources for MEC QA at the JRM. The NAVFAC Commander should conduct a study to examine potential alternative funding sources for performing MEC clearance and QA and determine whether a more accurate and equitable method is available to meet the mission as it relates to MILCON on Guam.

NAVFAC Marianas Officials Did Not Effectively Track MEC Found on Guam

NAVFAC Marianas officials did not effectively track MEC discovered on Guam to predict the likelihood of MEC being present during future MILCON projects; however this occurred, in part, because NAVFAC officials did not have the resources necessary to gather and maintain MEC clearance data. In addition, contractors provided NAVFAC Marianas officials with inaccurate and non-validated data for areas outside the installation. Although NAVFAC officials developed a geographic information system (GIS) tool to track MEC in specific areas on the island, the data within the tool are incomplete and inaccurate, and NAVFAC Marianas does not have adequate staff to manage the system. Furthermore, NAVFAC Marianas officials did not consider historical MEC data available from records at Andersen Air Force Base.

NAVFAC Marianas Officials Did Not Have Adequate Records of MEC Discoveries on Guam

NAVFAC Marianas officials developed the ESS using records of MEC discoveries dating back to the early 1990s; however, many of these records have later been deemed inaccurate. Furthermore, NAVFAC Marianas officials did not consider all the data available from the previous years of soil movement and construction because the documentation provided by DoD and contractor personnel reflected projects completed before MEC clearance standards were implemented. According to NAVFAC Marianas officials, the entire island of Guam was declared a MEC-suspected geographical area because the data gathered from historical records did not indicate that previously disturbed soil was examined for MEC.[27] In addition, NAVFAC officials did not conduct site surveys before the beginning of MILCON projects. MEC QA personnel stated that site surveys were not conducted because only personnel trained in unexploded ordnance are allowed to access a site if MEC could be present. Prime contractors do not generally employ personnel trained in unexploded ordnance, instead they subcontract the requirements after

[27] NOSSA personnel discussed an example where MEC was apparently unnoticed by workers in a large pile of excavated soil subsequently replaced in the ground as part of the fill dirt, and only discovered when the soil was removed a second time for repairs on the original construction.

receiving the contract. Therefore, the prime contractors were restricted from conducting site surveys before submitting their proposals. Furthermore, according to NAVFAC Marianas personnel, discrepancies exist within historical records concerning the specific locations where Government employees and contractors previously discovered MEC.

NAVFAC Marianas Officials Received Potentially Inaccurate Information From Contractors

NAVFAC Marianas officials created records using contractor-provided historical information that was potentially inaccurate because it indicated where the Government gained control of the MEC, not necessarily where the contractor encountered it—especially for areas outside the installation. Furthermore, NAVFAC officials relied on information that was not verified by MEC QA personnel. In addition, NOSSA officials assisting with the development of the ESS relied on data gathered from Guam's National Archives and historical records; however, these data were also based on actions completed before DoD officials implemented MEC clearance standards. According to NAVFAC QA personnel, the problem with off-base records is that contractors do not use the same procedures for MEC clearance that are required on base, and the local government does not stringently enforce MEC clearance policies. For example, MEC items discovered on a commercial construction project outside the installation are not always recorded and the soil removed is not MEC-cleared. Therefore, if the construction project is off base, NAVFAC officials cannot rely on contractor records or local historical data, and must treat any off-base MILCON site as potentially containing MEC.

NAVFAC Officials Developed an Incomplete and Inaccurate GIS Tool

NAVFAC officials developed a GIS tool to track the likelihood of MEC in specific areas based on previous MEC discoveries in the same area. Once GIS personnel enter historical data, the database provides real-time information of MEC discovered, including the geographic coordinates, date, size, and type of MEC discovered. GIS personnel receive contractor MEC spot reports, usually from MEC QA personnel, categorized according to the type of MEC item discovered.[28] As of January 2019, GIS personnel were developing statistical modeling practices similar to the database used by the U.S. Army Corps of Engineers.

NAVFAC officials did not begin to develop the GIS tool until 2018, and the data used to develop the tool are incomplete and inaccurate. For example, GIS personnel receive MEC spot reports that are missing the project boundaries and have inconsistent coordinates. Furthermore, GIS personnel stated that the contractor

[28] MEC spot reports include information about MEC encounters including the type of munition, the location it was found, who was involved, and a timeline of the response.

spot reports were not filled out correctly and consistently lacked accurate locations of discovered MEC items. GIS personnel were not able to rely on the spot reports because contract requirements did not specify the format of the spot reports; therefore, in many cases contractors were meeting contract requirements, but not providing information that was needed by GIS personnel. Additionally, GIS personnel were not in a position to accept or review the spot reports submitted by the contractor before Government acceptance, so they were unable to reject the spot reports and had to work with the information as provided. NAVFAC contracting officials are responsible for accepting spot reports and ensuring the contractors meet the contract requirements. A standardized format for spot reports would allow GIS personnel to use the information to input into the GIS tool.

In addition, GIS personnel stated that the GIS tool might not be completed before the end of construction for the Marine Corps relocation because of difficulties they encountered obtaining contractor after-action reports. GIS personnel stated that NAVFAC personnel often do not provide the after-action reports to the GIS personnel, and the after-action reports they do receive are often not in a format that allows GIS personnel to properly analyze the data including missing the construction footprints of the project and the coordinates of where the MEC was discovered. Although contracting officers included an after-action report as part of the contract deliverables, the format of the reports has not been adequately standardized; therefore, NAVFAC personnel have not been able to analyze the reports in an effective manner. JRM personnel developed a template for after-action reports that will be used for future contracts, but current contractors are unwilling to comply with the approved format. The NAVFAC Marianas Commander should issue a memorandum directing personnel to provide after-action reports, as required, to GIS personnel to include in the GIS tool.

In addition, NAVFAC officials did not allocate sufficient resources to maintain the GIS tool. As of January 2019, only one JRM staff member was tasked with managing the GIS information. According to Air Force Civil Engineering Center personnel, NAVFAC Marianas officials developed MEC probability maps that did not include information from historical records available from Andersen Air Force Base, which has historical records of soil movement containing 70 years' worth of information that could have improved the probability maps.[29] Instead, NAVFAC officials used data related to personnel interviews, historical battle plans, and recent MEC encounters to develop probability maps. Air Force and contractor data could potentially improve the accuracy and reliability of the GIS tool. In addition, the contract for the personnel who processed the data for the GIS tool expired and,

[29] Air Force officials did not provide evidence that previously moved soil was free of MEC or not, only that NAVFAC officials did not use the Air Force data when developing the probability maps.

according to JRM officials, would not be renewed until another suitable contractor could be found. Once the contracts expired, one person remained on the team. As a result, the JRM did not have the staffing required to process the raw data that needed to be entered into the GIS tool. According to JRM and NAVFAC officials, they do not have sufficient resources to input the data themselves or to maintain the GIS tool software. The Joint Region Marianas Commander should develop a plan to ensure that tools based on historical and current data to assist in making decisions about the likelihood of encountering munitions and explosives of concern during military construction projects are adequately resourced.

JRM Officials Did Not Implement Corrective Actions Recommended by NOSSA

NOSSA personnel performed various technical assist visits from 2015 to 2018 to determine whether JRM officials complied with explosives safety standards. NOSSA personnel determined that the MEC clearance process on Guam had resourcing deficiencies and developed visit reports stating their findings, which included a lack of designation of unexploded ordnance qualified personnel, failure to set up exclusion zones while conducting a surface sweep, and failure to conduct quality control at acceptable levels. NOSSA personnel provided JRM officials their findings and comments on the MEC clearance program and asked JRM officials for proposed corrective actions to address the findings. However, as of January 2019, JRM officials had not implemented corrective actions to address the deficiencies, which included the absence of an approved soil management plan and insufficient QA personnel to handle all required duties on Guam. JRM leadership determined that other processes and methods needed to be established before the soil management plan could be properly implemented. NOSSA personnel made several other findings specific to a contractor or MILCON project.

JRM officials' ability to effectively conduct MEC clearance will continue to be hindered until an approved soil management plan is implemented, as noted in the NOSSA technical assist visit report dated May 8, 2018. On March 18, 2016, the Chief of Naval Operations authorized the JRM Commander to excavate soil in 18-inch layers instead of 6-inch layers.[30] The Chief of Naval Operations provided this authority on the basis that other safety precautions were taken and that the removed soil was tracked and further screened for smaller munitions before identified as safe. However, JRM officials have not developed a plan to track or screen soil as required. If opting to excavate in 18-inch layers, contractors must implement extra precautions to separate the soil, treat it as a potentially hazardous material, and transport the soil to other locations for screening. Instead,

[30] Unexploded ordnance technicians detect and remove larger munitions before the excavation occurs. By removing soil in 18-inch layers (considered limited clearance-because it removes only the larger MEC), smaller munitions may not be detected or removed in the lower 12-inches of soil. Conversely, removal in 6-inch layers is full clearance of all MEC.

contractors have continued conducting 6-inch lifts instead of completing 18-inch lifts as a result of JRM personnel's ineffective soil management plans. Until JRM officials implement a soil management plan, they will not benefit from the cost and time savings anticipated by removing soil in 18-inch layers. Additionally, JRM leadership risks not being able to accurately track clean soil and may need to conduct further MEC clearance on the soil in the future.

NOSSA officials' visit reports for May 20, 2015; March 27 through 30, 2017; and April 9 through 12, 2018, all attribute a lack of QA and oversight for the MEC clearance program at the JRM to resourcing shortages. NOSSA personnel determined that JRM officials did not provide sufficient personnel or equipment to manage the full scope of QA assessments required for ongoing construction projects at the JRM. The resourcing shortages in the region are discussed in DODIG Report No. DODIG-2020-040, "Audit of Cost Increases and Schedule Delays for Military Construction Projects at Joint Region Marianas," December 11, 2019.

On May 8, 2018, in a NOSSA report summarizing the April 9 through 12 visit, NOSSA officials determined that because of constrained resources, it was not possible to conduct proper MEC QA because fieldwork often occurred overnight to limit personnel exposure and disruptions to base operations. JRM MEC QA personnel confirmed that they would sometimes split their shifts into morning and evening shifts to conduct fieldwork QA; however, they did not have enough personnel to cover all ongoing MILCON projects at the JRM. Furthermore, NOSSA officials stated that while some improvements in the MEC program were evident from the previous visit in March 2017, areas of concern have and will continue to reduce program effectiveness unless resolved.

In January 2019, MEC QA personnel at the JRM confirmed that they continue to experience manning and equipment problems. According to MEC QA personnel, the JRM lacks personnel to assess the full scope of all MILCON projects in the region. Furthermore, JRM officials still do not have an approved soil management plan. The JRM Commander should develop and implement corrective actions to address any open deficiencies identified in NOSSA technical assist visit reports.

Navy Policies Did Not Provide JRM Officials Flexibility to Properly Manage MEC Clearance or Reduce Potential Safety Risks to Contractors

Navy policies for explosives safety restrict installation commanders from being able to adequately manage risks related to MEC clearance by obtaining deviations in a timely manner. Navy and Air Force officials at the JRM submitted deviation requests that did not meet Navy standards. In addition, Navy officials did not adequately plan for MEC clearance or assess safety risks, resulting in decreases in

military readiness and effectiveness in the area. Furthermore, DoD officials do not have procedures in place for contractors to propose new or alternative methods for conducting MEC clearance.

JRM Installation Commanders Cannot Obtain Deviations in Timely Manner to Avoid Schedule Delays and Cost Increases

Chief of Naval Operations officials responsible for approving deviation requests have not allowed installation commanders throughout the Navy, including at the JRM, to manage or accept explosives safety risks as part of their overall risk-management strategy. Once the DDESB approves an ESS, installation commanders are not authorized to make decisions related to MEC clearance without obtaining a deviation request or amending the ESS. Both options require multiple levels of review through the Navy chain of command and NOSSA. Both also require lengthy processes that result in delays to MILCON projects while waiting for deviation approval. These delays increase MILCON costs.

According to a DDESB program evaluator, the Air Force and Navy handle deviation requests differently at their respective bases around the world. The DDESB program evaluator stated that there were advantages and disadvantages to each method. However, the Air Force allows installation commanders to approve deviations that are applicable to the specific installation, whereas the Navy requires multiple levels of review and approval at a level higher than the installation. Because of the differing levels of approval, the number of active deviations varies significantly between the two Services. The Air Force approved about 4,500 deviations compared to about 65 for the Navy worldwide.

For example, the two maintenance hangar MILCON projects at Andersen Air Force Base experienced significant delays and cost increases because the Air Force personnel were not able to obtain a deviation from explosives safety standards for digital geophysical mapping scanning. A NAVFAC Marianas Project Manager submitted a deviation request that included a probability analysis performed by Air Force personnel that demonstrated with 95-percent confidence that, if no MEC had been detected in the initial 4 feet of soil, the mathematical probability of encountering MEC at greater depths was low for the entire 27-acre site that had to be cleared. However, a NOSSA official did not concur with the request. In response to the deviation request, the NOSSA official stated that the Navy did not have the authority to downgrade the likelihood of encountering MEC, unless an ESS amendment was approved by the DDESB. Furthermore, a JRM MEC QA specialist stated that Navy officials most likely did not approve the initial request because it

was based on a probability analysis and was not filed using correct procedures.[31] Instead of being able to accept the risk of encountering MEC and forgoing MEC clearance at greater depths, the JRM Commander submitted a deviation request that included the Air Force analysis and the impact of the maintenance hangar construction delays on operations within the region. By the time Chief of Naval Operations officials approved the deviation request, MEC clearance on the 27-acre site had already been completed to a depth of up to 29 feet and project personnel had experienced extended delays and about $26 million in costs related to MEC clearance and associated delays. The contractor had not identified any munitions during the MEC clearance.

Although Navy officials use explosives safety standards established in Ordnance Pamphlet 5, Air Force officials at the JRM stated that the Air Force continues to use the "Recognize, Retreat, and Report" system on installations outside of the JRM, allowing it to complete MEC clearance in a faster and less costly manner.[32] Navy and Air Force leaders discussed the possibility of allowing the Air Force to manage the MILCON and MEC on Andersen Air Force Base, but have not yet deviated from the joint basing construct. JRM officials are presented with a unique situation under the joint region construct because of the increase in MILCON projects related to the Marine Corps relocation. The differences in the Services' delegation authority and propensity to accept deviations are magnified in this situation; however, delegation authority and propensity to accept the deviations are within the Services' authority to establish.

The Chief of Naval Operations should determine if a more efficient process exists to approve deviation requests from installation commanders in a timely manner to reduce further schedule delays and associated cost increases for MILCON projects.

JRM Officials Did Not Have a Process for Properly Preparing and Submitting Deviations

The challenge of obtaining a deviation request in a timely manner was further compounded because JRM officials did not establish an effective process for preparing and submitting deviation requests in accordance with guidance, resulting in delays and numerous denials. JRM officials did not have established procedures for personnel for preparing and submitting requests that both meet Ordnance Pamphlet 5 and are processed through the proper personnel for submittal to NOSSA officials. Specifically, Air Force officials bypassed

[31] DoD Standard 6055.09 indicates that deviation requests must be requested based on strategic or compelling operational requirements.

[32] Air Force officials established Air Force-specific criteria for Air Force installations. DoD, NOSSA, and Air Force officials stated that the "Recognize, Retreat, and Report" technique is not a DoD-approved method of conducting MEC clearance.

various components when submitting deviation requests for approval and JRM officials submitted deviation requests that did not always meet the Ordnance Pamphlet 5 requirements to establish operational necessity. These requests did not meet established requirements and, therefore, were rejected by Navy officials.

We reviewed two rejected deviation requests that JRM officials submitted. These requests included justifications that in our judgment did not meet deviation request criteria established in Ordnance Pamphlet 5. The officials who submitted the rejected requests discussed the cost impact or the low probability of encountering MEC as the reason for the deviation request, rather than discussing how following explosives safety standards would have operationally impacted the DoD's mission-essential operations as required by Ordnance Pamphlet 5. Additionally, MEC QA personnel we interviewed discussed other examples where construction managers suggested deviation requests for their projects based on the financial impacts or what they perceived as a low likelihood of encountering MEC instead of the impact on mission-essential operations.

The JRM Commander should develop standard operating procedures to ensure that deviation requests are processed consistently, through the proper channels, and meet the justification criteria for submitting a deviation request.

DoD Officials Can Increase Military Readiness and Effectiveness by Balancing Safety Risks

DoD officials did not adequately plan for MEC clearance or assess MEC safety risks, requiring construction managers to reduce project scopes.

DoD officials did not adequately plan for MEC clearance or assess MEC safety risks, requiring construction managers to reduce project scopes. Each time construction managers reduce the scope of projects, the DoD potentially loses some degree of readiness and effectiveness. For example, by under-programming costs associated with MEC clearance, DoD personnel are forced to reprogram funds or reduce the scopes of projects based on the availability of MILCON funds. Specifically, the NAVFAC contracting officer required a delay to the DLA pipeline construction because MEC clearance off base was not included in the original budget request. During this delay, Andersen Air Force Base personnel risked not being able to receive enough fuel for extended contingency operations. Furthermore, Air Force Civil Engineering Command personnel stated that a project to build numerous munition storage facilities had to be reduced from 16 to 12 facilities because the MEC clearance costs were higher than expected. As a result of this reduction, Air Force personnel are required to store additional munitions in locations where they will not be immediately available for Pacific

Air Force operations. Similarly, Navy Public Works Directorate personnel experienced MEC-related delays on a housing revitalization project, resulting in fewer houses being renovated than originally planned and budget reprogramming to complete the project. Table 1 illustrates how the DoD was impacted by the delays of several military construction projects at the JRM.

Table 1. Impact of Military Construction Delays on DoD Readiness.

Project Name	Impact Until Construction Completed
Guam Strike Fuel Systems Maintenance Hangar (Project Number 3010)	Andersen Air Force Base cannot provide adequate maintenance to aircraft fuel systems to support various DoD initiatives. Without the facility, the DoD's operational capability is degraded and the potential for mishap related to fuel systems maintenance is increased.
Pacific Airpower Resiliency – Tanker Group Maintenance Hanger (Project Number 3027)	JRM cannot provide timely maintenance to aircraft significantly reducing readiness and degrading operational capability to support various DoD initiatives. Aircrew are also without required protection in the event of a contingency.
Air Force Petroleum Oil Lubricant Infrastructure Hardening (Project Number 3760)	Fuel systems are vulnerable to temporary loss and mission failure. This project supports redundant systems in case of contingency operations.
DLA Fuel Pipeline (Project Number 1303)	Andersen Air Force Base capability to receive fuel using existing capabilities is less than required during peak requirements. Without the additional capacity, operational plans and Combatant Commanders' desired results are at risk.
Lockwood Housing Project (Project Number 1403)	Without the project, DoD homes continue to fall short of DoD construction standards and the Navy cannot provide suitable housing to military personnel and their families.
Navy Petroleum Oil Lubricant Infrastructure Hardening (Project Number 652)	The existing infrastructure is mission-critical for distribution and refueling. Without this hardening project, there are no contingency plans to support operations should the existing infrastructure become damaged.

Source: Information compiled by the DoD Office of Inspector General (OIG) using DD Forms 1391 submitted by Navy, Air Force, and DLA officials.

Additionally, DoD officials' adherence to MEC safety standards has slowed construction progress on MILCON projects necessary to protect DoD assets. The 36th Wing Vice Commander stated that the Air Force is not able to construct the infrastructure to maintain and protect the assets in the region, including protecting aircraft and establishing redundancy, as demonstrated by the lengthy schedule delays in completing projects on Andersen Air Force Base. Furthermore, the Vice Commander explained that adversaries in the region have chosen to build and operate without environmental impact or safety concerns. For example, from 2014 to 2016, adversaries built an artificial island, and a 3,000-meter runway on Fiery Cross Reef, capable of supporting a bomber aircraft. Adversaries have the capability to perform combat operations from Fiery Cross Reef to the island

of Guam. Furthermore, Andersen Air Force Base officials stated that in the time that U.S. adversaries built the artificial island and the runway, the U.S. military on Guam could not complete MEC clearance for a single MILCON project, such as the maintenance hangar projects or the fuel pipeline.[33]

The Under Secretary of Defense for Acquisition and Sustainment should review explosives safety standards, in conjunction with DDESB representatives, Service-level policymakers, and construction managers with experience on projects involving MEC clearance, to determine if increased MEC risk is acceptable in certain instances based on the adverse operational risks that MEC clearance have created.

DoD Explosives Safety Standards Increase Other Safety Risks

DoD explosives safety standards are designed to protect military and civilian personnel from MEC; however, explosives safety standards do not allow contractors any leeway to implement alternative safety measures or propose alternative methods to conduct MEC clearance. According to contractors performing MILCON at the JRM, the overall safety risks to their crews increased following the implementation of the explosives safety standards for MEC clearance. The contractors identified situations where employees were exposed to additional safety hazards inherent to construction because they were performing MEC clearance as required by the DoD. MEC clearance contractors stated that there are safer methods to conduct MEC clearance; however, contractors are not allowed to deviate from the standards and no process exists to propose alternative methods.

DoD MEC Clearance Safety Standards Are Designed to Limit Exposure

DDESB officials developed standards to protect DoD personnel, civilians, and other infrastructure in the vicinity of MILCON where MEC may be present. By not completing MEC clearance according to standards, DoD personnel and assets, as well as contractors and civilians, were at risk of an explosives safety accident. For example, before the ESS was in effect or MEC clearance was being conducted, a contractor encountered a 1,000-pound bomb while excavating. Although the contractor avoided an accidental explosion, the Navy's Explosives Ordnance Disposal team conducted render safe procedures and moved the munition to the range for safe disposal. In addition, after proactive MEC clearance was occurring, a contractor's deficiency in performing quality operations resulted in an 81-millimeter mortar being processed through rock-crushing equipment without adequate protection in place to protect the operator or control an explosion. If the contractor accidentally exploded the mortar, everyone within the radius of

[33] In response to the Vice Commander's statements, the DDESB executive director noted that this project was completed by a government that has known workplace safety and quality issues that would not meet benchmarks for U.S. safety or construction standards.

the hazardous fragment zone (207 feet) would have been at risk of serious injury or death. Although contractors can manage some risks related to MEC and the safety of their crews, DoD officials must have standards in place to protect other groups. The DoD explosives safety standards provide this protection.

DDESB personnel stated that the DoD is responsible for ammunition from the time of manufacture to the point ammunition is recycled or disposed. Therefore, the Government is responsible for safety procedures and cannot shift the responsibility completely to contractors conducting MEC clearance. DDESB personnel stated that part of the problem conducting MEC clearance on Guam is the culture of local law enforcement officials that do not support MEC clearance at the same level as within the rest of United States and other countries. DDESB personnel further stated that U.S. and foreign government officials encourage best practices when it comes to safety. However, MEC clearance methods and best practices change and evolve over time; therefore, DoD and contractor personnel need to maintain an open dialogue to discuss and analyze alternative MEC clearance methods that may decrease safety risks.

Contractors Could Use Alternative Methods for Surface MEC Clearance

Opportunities exist to complete MEC clearance with alternative methods; however, DoD processes do not allow construction contractors to propose alternatives. According to two prime contractors we interviewed, allowing contractors to manage the safety risks instead of having MEC clearance processes dictated to them would be an improvement to performing MILCON on Guam. For example, according to contractor personnel, an alternative method for MEC clearance would be for one or two crewmembers using armored equipment to perform site clearance, thereby exposing fewer crew members to safety hazards rather than performing MEC clearance in accordance with the ESS and Ordnance Pamphlet 5 standards. According to the ESS, surface removal of MEC is a manual process that involves visual inspection of the ground by unexploded ordnance technicians, followed by removal of smaller vegetation using machetes, chainsaws, and small weed whackers; a process that places crews of about 60 people in potentially dangerous situations. The contractor explained that the alternative method of using one or two crewmembers and armored equipment is how contractor personnel perform MEC clearance on Guam for all non-DoD projects and contractors have not experienced a MEC safety incident.

When we asked a NOSSA official if a process was in place for contractors to suggest improved MEC clearance methods, the official stated that new methods would need DDESB approval first and then be implemented by the Services. Subsequently, DDESB personnel stated that if MEC contractors on Guam have

safer methods to conduct MEC clearance, they are willing to test the methods and verify documentation that validates a safer approach. The DDESB personnel also noted that a process already exists for Services to request DDESB approval to amend an ESS and similar processes can be used to propose changes in standards to the DDESB. The NAVFAC Marianas Commander should establish a process for evaluating contractor requested alternative methods for MEC clearance to determine the feasibility and safety implications of the request and whether it should be forwarded to NOSSA and DDESB for consideration and approval.

DDESB personnel also stated that they have not received after-action reports from the JRM required by Ordnance Pamphlet 5; therefore, the DDESB cannot analyze the results of MEC clearance or make any informed decisions to address MEC at the JRM differently. Ordnance Pamphlet 5 requires that after-action reports be submitted to NOSSA within 6 months of completion of a munitions response action. Although the format for after-action reports was established when NOSSA instruction 8020.15D was published in April 2013, the JRM continues to experience difficulties obtaining correctly formatted reports. A JRM explosives safety specialist explained that while contractors completed about 100 after-action reviews, only 1 review contained all the required elements and was prepared in the correct format for submitting to NOSSA. NOSSA, NAVFAC, and JRM officials have taken steps to develop a standardized format for after-action reports; however, the new format will apply only to newly issued contracts. Without after-action reports, DoD personnel at all levels cannot make decisions based on the MEC encounters on Guam. The NAVFAC Pacific Commander should issue guidance to contracting personnel on taking the necessary steps to ensure that contract requirements for all ongoing and future Guam MILCON projects include a standardized after-action report format that meets the Government's need for analyzing MEC encounters and that these after-action reports are provided as a contract deliverable.

DoD Personnel Did Not Adequately Plan or Manage MEC Safety Concerns and Overall Readiness on Guam

DoD personnel did not establish adequate plans and processes for managing MEC clearance requirements and safety concerns for MILCON projects on Guam. Specifically, DoD personnel did not adequately plan for costs and time required to conduct MEC clearance, define MEC clearance requirements, assess contractors' MEC experience for MILCON contracts, or effectively administer MEC activities for MILCON projects.

DoD Personnel Did Not Properly Plan for Costs and Time Required to Conduct MEC Clearance

DoD programming officials responsible for preparing MILCON budgets omitted, underestimated, or did not clearly identify MEC clearance costs as part of budget requests for MILCON projects at the JRM. Additionally, DoD officials generally did not plan adequate time in construction schedules to complete MEC clearance according to established standards, resulting in ongoing schedule delays.

DoD Personnel Did Not Develop Accurate Cost Estimates for MILCON Budget Requests

DoD officials responsible for preparing DD Forms 1391 did not include accurate cost estimates for MEC clearance in the requests, resulting in challenges completing projects on time and within the overall budget. DoD officials incurred about $100 million in cost increases directly related to MEC clearance for MILCON projects, valued at $1 billion, from FYs 2015 through 2017. DoD officials consistently underestimated MEC clearance costs, requiring contracting officials and construction management engineers to adjust other areas of the MILCON project to compensate for the additional expense or to request more funds to complete the project.

DoD officials responsible for preparing DD Forms 1391 did not include accurate cost estimates for MEC clearance in the requests, resulting in challenges completing projects on time and within the overall budget.

DLA Officials Underestimated Costs for the Fuel Pipeline Upgrade

In February 2012, DLA officials submitted the DLA pipeline DD Form 1391 request with $400,000 budgeted for "environmental and archaeological mitigation." DLA personnel included a description stating that the funds would provide mitigation of construction impact on the archaeological site along the pipeline route, but the description did not mention MEC or unexploded ordnance specifically. DLA officials later increased funding for the project by $25.4 million to complete MEC clearance.

DLA officials experienced significant cost increases and schedule delays completing the fuel pipeline project because they did not plan for MEC clearance of the off-base portion of the project. DLA officials programmed on the DD Form 1391 for FY 2013 the construction of a new fuel transfer pipeline and the upgrade of an existing fuel transfer pipeline at Andersen Air Force Base. DLA officials explained in the DD Form 1391 that a need existed to add a pipeline and to upgrade an existing transfer pipeline that was incapable of supporting the Air Force's mission requirements. According to DLA officials, the programmed amount was for the

portion of MEC clearance on base and not the off-base sections; therefore, once DoD officials determined that MEC clearance would be required off base, the DLA pipeline was delayed. Because they did not program for required off-base MEC clearance, NAVFAC contracting officials had to issue three modifications that extended the contract completion date by 20 months. Furthermore, NAVFAC officials issued additional modifications totaling more than $25 million to complete MEC clearance off base. Delays in completing the project potentially risk the Air Force's ability to meet fuel needs during contingency operations.

Air Force and Navy Officials Underestimated MEC Clearance Costs in DD Forms 1391

In April 2013, Air Force officials submitted a DD Form 1391 to build a hardened maintenance hangar at the JRM that included $1.8 million for "environmental remediation and explosives safety compliance." NAVFAC contracting officials awarded the contract based on the contractor's proposal using MEC clearance methods approved and completed on previous MILCON projects at the JRM and estimated the contractor would clear approximately 6,000 anomalies at the site.[34] However in October 2015, the contractor claimed to have cleared over 9,000 anomalies. Furthermore, in July 2015, the MEC QA rescinded the previously approved MEC work plan and required the contractor to change MEC clearance methods to 6-inch lifts to construction depth instead of the methods in the previously approved work plan. The change in the work plan and additional MEC clearance resulted in delays to the project and significant cost increases. In May 2019, NAVFAC contracting officials estimated that they incurred additional costs of about $7 million related to MEC clearance for the project.

Officials in multiple DoD organizations did not consistently identify MEC clearance costs related to their projects or adequately budget for MEC clearance costs. For example, in three DD Forms 1391 reviewed, Air Force officials programmed the projects with a line item cost estimate for an environmental remediation. However, Air Force officials included a line item cost estimate for explosives safety compliance on only one of three DD Forms 1391 reviewed. In another example, DLA officials programmed an FY 2013 project to upgrade the fuel pipeline at Andersen Air Force Base; however, they listed the line item cost estimate as environmental and archeological mitigation and not as explosives safety compliance. Furthermore, Navy officials programmed two projects for FY 2014 and FY 2017 that did not list explosives safety compliance as part of their DD Form 1391; however, they listed a cost estimate line item for environmental issues and mitigation. Table 2 provides the list of DD Forms 1391 reviewed, including the component submitting the budget request, fiscal year, project title, and description of MEC.

[34] An anomaly is a surface or subsurface item identified during a scan using metal detecting equipment. These items can be MEC, but can also be fragments of exploded munitions, nails or other construction debris.

Table 2. Description of MEC on DD Form 1391

Component Submitting Budget Request	FY Submitted	Project Title	Description of How MEC Appears on DD Form 1391*
Air Force	FY 2012	Guam Strike Fuel Systems Maintenance Hangar	Cost estimate of $150,000 for Environmental Remediation with no further information in the project description regarding this cost estimate.
Air Force	FY 2014	Pacific Airpower Resiliency – Tanker Group Maintenance Hangar	Cost estimate of $1.8 million for Environmental Remediation and Explosives Safety Compliance with no further information in the project description regarding this cost estimate.
Air Force	FY 2014	Air Force Petroleum Oil Lubricant Infrastructure Hardening	Cost estimate of $589,000 for Environmental Remediation with no further information in the project description regarding this cost estimate.
Defense (DLA)	FY 2013	DLA Fuel Pipeline	Cost estimate of $400,000 for Environmental and Archeological Mitigation with further reference to the mitigation of archeological sites along the pipeline route in the project description, but no reference to unexploded ordnance or MEC.
Navy	FY 2014	Lockwood Housing Project	Cost estimate was stated as $23.1 million for the entire project. Project description included a statement that the total costs covered "other environmental issues, if applicable."
Navy	FY 2017	Navy Petroleum Oil Lubricant Infrastructure Hardening	Cost estimate included $200,000 for Environmental Mitigation. Project description noted that environmental mitigation included unexploded ordnance and MEC mitigation, cultural resources mitigation, and natural resources mitigation.

*The Government of Japan funded the Marine Corps main cantonment area project and no DD Form 1391 was created. See Appendix E for additional information regarding actual contracted MEC clearance costs.

Source: The DoD OIG.

We reviewed the Air Force's FY 2019 budget request, which included one project on Guam and two projects on Tinian, and determined that Air Force officials continued to inconsistently identify cost estimates for MEC clearance on the DD Forms 1391. Air Force officials attributed the difficulty in calculating MEC costs to changing

implementation of MEC clearance methods. Additionally, the Air Force does not have specific guidance for programming and calculating MEC clearance costs. We also reviewed the Navy's FY 2019 budget request. Although Navy officials consistently identified MEC clearance budgets as part of a line item for environmental mitigation on the DD Forms 1391, that line item includes costs for natural resource, cultural, and archaeological mitigation factors in addition to MEC clearance costs, making it difficult for budgeting personnel to determine whether the MEC clearance budget was accurate.

Without being able to determine how much of a proposed MILCON budget is for MEC clearance, DoD officials responsible for reviewing the estimates for accuracy cannot assess whether MEC clearance budget estimates are sufficient. Additionally, DoD officials cannot accurately adjust future MILCON budgets based on historical analysis between budgeted and actual MEC costs for projects. We did not identify any DoD- or Service- level criteria related to developing DD Forms 1391 and determined that no guidance exists related to categorizing or estimating MEC clearance costs.

The Under Secretary of Defense for Acquisition and Sustainment should issue guidance for estimating and presenting MEC clearance costs on DD Form 1391 that will enable personnel to assess the accuracy of the MEC clearance budget and enable DoD leaders to refine future MILCON projects based on historical comparisons of methods used to develop MEC clearance budgets.

DoD Officials Did Not Plan Sufficient Time for MEC Clearance in MILCON Schedules

DoD officials did not schedule sufficient time for MEC clearance according to explosives safety standards established in Ordnance Pamphlet 5. The construction delays resulting from MEC clearance and other issues are discussed in DODIG Report No. DODIG-2020-040, "Audit of Cost Increases and Schedule Delays for Military Construction Projects at Joint Region Marianas," December 11, 2019. For summary details concerning schedule delays associated with MEC for MILCON projects, see Appendix E.

DoD officials will continue to experience schedule delays related to MEC clearance if they do not properly schedule future MILCON projects located in close proximity of each other. The Officer in Charge for Marine Corps Activity Guam identified concerns when multiple projects are scheduled in a small area and exclusion zones overlap, such as the 525-acre Marine Corps main cantonment area. The Marine Corps plans to complete more than 50 MILCON projects on the site through FY 2024. Although contractors were conducting MEC clearance for the entire site as of January 2019, as project designs are finalized, additional

MEC clearance may be required. When MEC clearance is required for any of the projects, Marine Corps officials will be responsible for enforcing an exclusion zone around each site. These exclusion zones will likely overlap with other construction projects in the main cantonment area. Based on other projects on the JRM, these exclusion zones could remain in place for days or even months for each project. By enforcing the exclusion zones, Marine Corps officials have to stop other construction within the area, resulting in additional costs for Government-caused contract delays. Additionally, the contractors for each of these projects will be required to adjust schedules and sequencing procedures based on the actions of other contractors.

JRM officials should implement long-term construction schedule plans, work with contracting officials to ensure that contracts consider MEC schedule delays in the original award, and develop deviation requests for managing exclusion zones to minimize delays resulting from the impacts of MEC clearance on construction projects in overlapping exclusion zones.

NAVFAC Contracting Officials Did Not Adequately Define MEC Clearance Requirements or Assess Contractors' MEC Experience in MILCON Contracts

NAVFAC contracting officials did not implement procedures to ensure that contracts included adequate requirements related to MEC clearance. In addition, NAVFAC contracting officers did not evaluate contractors' experience and MEC clearance methods during the source-selection process.

NAVFAC Officials Did Not Develop Adequate Contract Requirements

NAVFAC contracting officials did not routinely include the necessary MEC clearance requirements within solicitations and contract specifications. Furthermore, DoD officials did not fully understand the effects that changes in MEC standards have on existing MILCON contracts.

Contracting officers did not ensure that the contract requirements fully incorporated MEC requirements for four MILCON projects we reviewed that experienced MEC-related schedule delays. We requested that NAVFAC officials identify the reasons for the delays for a list of construction contracts on Guam.[35] Based on NAVFAC officials' response, we reviewed four contracts to determine whether the methods used by the contracting officers to get the requirements under contract resulted in MEC clearance delays. We discuss two of those projects below.[36]

[35] We obtained this list as part of an ongoing DoD OIG research project related to DoD construction projects.

[36] The two other projects reviewed were the Navy Petroleum-Oil-Lubricant Infrastructure Hardening and the Pacific Airpower Resiliency – Tanker Group Maintenance Hangar projects.

Air Force Petroleum-Oil-Lubricant Infrastructure Hardening Contract

The NAVFAC Marianas contracting officer did not incorporate adequate MEC clearance requirements into the original contract, issued on October 7, 2014, resulting in lengthy contract suspensions and delays in completing the project.[37] Because MEC clearance requirements were not included in the original contract, the contracting officer was required to negotiate a contract modification with the contractor. All work on the contract was suspended from December 2015 through April 2017 while the contracting officer and the contractor negotiated and incorporated MEC clearance into the contract. On June 19, 2017, the contracting officer issued a modification to the contract to include MEC clearance requirements.

In addition, because the requirements were not included in the original solicitation, the contracting officer was not able to evaluate all contractors' proposed clearance methods and prices as part of the competitive process before contract award. The contractor requested numerous extensions during the negotiations because potential subcontractors either refused to submit proposals for the work or submitted proposals that were much higher than Government estimates. The contractor's initial proposal for the MEC clearance was about $3 million and 2 years and 10 months to perform the work. Conversely, the Government estimator calculated about $1.4 million and 6 months. After negotiating with the contractor, the contracting officer modified the contract to increase the value by $2.2 million and added 3 years and 9 months to the schedule to conduct MEC clearance.

Guam Strike Fuel Systems Maintenance Hangar

The NAVFAC contracting officer, MEC QA specialist, and contractor disagreed on the level of MEC clearance effort required by contract specifications.[38] The contracting officer included specifications within the contract that stated that all pre-construction MEC clearance must be accomplished in accordance with the ESS amendment series as of June 2012 and Ordnance Pamphlet 5; however, specifics such as site conditions, the amount of soil to be excavated, or the methods to remove that soil, were not included.[39] According to a memorandum for record prepared by the contracting officer, the contractor proposal included a MEC clearance method that contractors used for the previous 5 years and was accepted by the Government. The contracting officer accepted this method for MEC clearance and the MEC QA specialist approved the contractor's MEC work

[37] Contract N40192-10-D-2804.

[38] Contract N62742-10-D-1307 Task Order JQ01.

[39] While the ESS and Ordnance Pamphlet 5 provide overall MEC guidance, the contracting officer should include site specific information for the individual project in the contract.

plan.[40] By March 25, 2015, the contractor performed MEC clearance based on the terms identified in the accepted proposal. However, on May 1, 2015, the MEC QA specialist rescinded the approval after realizing that the work plan did not capture the extent of the excavation depth required for the construction.

According to the MEC QA specialist, the contractor's method, which included a single scan using digital geophysical mapping, would only identify the largest MEC up to approximately 4 feet below the surface and the smallest MEC in the top 6 inches of soil, and would not comply with explosives safety standards.[41] According to contracting personnel, the average construction depth for this project was about 20 feet below the surface. The MEC QA specialist admitted that he approved the contractor's work plans to use those methods, knowing that the plans would not meet MEC clearance standards. He attributed his actions to the pressure he received from management to expedite construction timelines. According to the MEC QA specialist, when NOSSA officials began increasing enforcement of MEC standards for JRM MILCON in 2015, he began taking extra precautions to ensure that MEC work plans complied with clearance standards. Although explosives safety standards were in place, NOSSA officials agreed that before 2016, DoD officials on Guam inconsistently implemented the standards.

On August 14, 2015, the contractor notified the contracting officer that it considered any work beyond the original proposal to be a change to the contract terms. As part of this notification, the contractor stated that its MEC clearance subcontractor performed 145 projects using the proposed methods without a single MEC-related injury. Although the MEC QA specialist was enforcing requirements in the ESS and Ordnance Pamphlet 5 that were included in the contract specifications, the contractor proposed and the contracting officer accepted methods that, although commonly accepted at the time, did not meet MEC clearance standards.

The contracting officer determined that the contractor performed in accordance with the original contract and, therefore, should not be required to complete additional MEC clearance work. Based on this determination, the contracting officer recommended to the NAVFAC leadership that the Government accept the work performed by the contractor and move forward without additional delay. The contractor estimated that performing MEC clearance to standard and incurring

[40] The contractor's proposal was dated September 26, 2014. The contracting officer awarded the project on February 20, 2015. The contractor submitted the MEC work plan on March 23, 2015, and the MEC QA specialist approved the plan on April 16, 2015.

[41] DoD personnel have concluded that there is no exact distance below the surface that can be used as a benchmark for detecting various sizes of MEC as the detection is dependent on the equipment used, environmental factors, and the orientation of the MEC in the soil. Technicians are able to detect larger MEC items at depths up to 4 feet using digital geophysical mapping.

costs for associated delays would increase the project costs by up to $25 million. In August 2017, an unknown individual submitted a deviation request to the Chief of Naval Operations to execute the MILCON project without complying with MEC clearance standards; however, the request required revisions and NOSSA officials did not endorse the request.[42] The JRM Commander submitted a request on October 30, 2017, that was endorsed by NOSSA officials and approved by OPNAV Supply, Ordnance and Logistics Operations Division, N41 on November 7, 2017. However, while awaiting approval of the deviation request, Air Force officials decided to continue with the project and comply with the MEC standards. The NAVFAC contracting officer modified the contract for $2.4 million and extended the contract length by 1 year for MEC clearance.

NAVFAC contracting officials did not consistently include sufficient MEC clearance requirements in the original contract language and officials required costly modifications to obtain the correct level of MEC clearance support. NAVFAC contracting officials required contract modifications to properly obtain MEC clearance in 5 of the 7 projects we reviewed. The two additional projects that have not required MEC-related modifications are ongoing. See Appendix E for more information regarding original contract requirements and the necessary modifications related to the MILCON projects discussed in this report.

Effects of Changing MEC Requirements on Existing Contracts

NAVFAC contracting officers and DoD officials did not understand how existing contracts were affected by either changing standards or how DoD personnel implemented those standards, resulting in confusion to all when requirements changed. Additionally, DoD personnel do not have a plan in place to address how future changes to standards will affect contracts in place before the MEC clearance standards are updated. Contracting officers did not require contractors to comply with updated standards because the updates would result in costly adjustments and delays to the original terms of the accepted contracts. However, MEC QA personnel required contractors to perform MEC clearance according to updated standards rather than the standards in place at award. We determined that the examples discussed by the personnel interviewed were not necessarily a result of changing MEC clearance standards, but stricter enforcement of the existing standards.

[42] An Air Force official at Andersen Air Force Base provided the deviation request to the audit team; however, the document did not indicate the originator's name, office, or title. The document was submitted to NOSSA via its website. NOSSA officials clarified that the website is for determination requests, not deviation requests. However, the document included language noting that it was a request to deviate from the JRM ESS. After reviewing the document, NOSSA personnel assisted JRM with a proper deviation request.

A DDESB representative explained that the general standards used today have been in place since October 2004, with minor adjustments, such as the size of the exclusion zones for certain munitions. However, we also determined that the DoD standards have changed at least 3 times—Ordnance Pamphlet 5 has undergone 7 unique revisions and revision 7 includes 14 subsequent changes, and the JRM ESS has been amended 6 times since originally published or approved. Each revision would have resulted in existing contract terms not fully reflecting the then-current standards.

When we questioned DoD officials about how changes to standards affected existing contracts, we identified the following:

- During a May 2018 NOSSA Drumbeat, the NOSSA Director stated that an upcoming ESS amendment would not affect contracts issued under the previous ESS. However, another NOSSA official stated that any changes in criteria were effective immediately.
- The foreword of DDESB Technical Paper 18, "Minimum Qualifications for Personnel Conducting Munitions and Explosives of Concern-Related Activities," states that existing contracts should use the previous versions of the paper until their completion; however, exercised options should use the newer current version. We did not identify similar statements in the forewords for a sample of other DDESB technical papers.
- An acquisition official with Office of the Under Secretary of Defense for Acquisition and Sustainment stated that the DDESB should decide whether the standards affect existing contracts. A DDESB official stated that the DDESB only develops the standards and it is up to the Services' explosives safety components to implement them (this would be NOSSA for JRM MEC clearance). A NOSSA official stated that NOSSA personnel are not in a position to dictate changes to contracts because they are not acquisition personnel.
- Two other officials in the Office of the Under Secretary of Defense for Acquisition and Sustainment stated that explosives safety is paramount and should be implemented without regard to the impact the changes have on existing contracts.

Continued confusion exists among all parties involved on whether changes in MEC clearance requirements apply to existing contracts and how those changes should be implemented. The Under Secretary of Defense for Acquisition and Sustainment should issue procedures or other clarifying guidance to establish authorities and ensure that any revised standards include language concerning when the revisions become effective and how existing contracts are affected by changes in standards.

NAVFAC Contracting Officials Did Not Assess Contractor Experience

NAVFAC contracting officials did not adequately assess the experience level of construction contractors when awarding MILCON projects because MEC QA personnel were not involved during the source-selection process and prime contractors generally subcontract the MEC portion of the project out to other contractors. NAVFAC contracting officials could have better assessed a contractor's MEC clearance capabilities by examining the contractor's proposed methods, assessing their performance of the other projects being completed on the JRM, and by reviewing the Past Performance Information Retrieval System to determine how the contractor performed elsewhere.

According to the NAVFAC Pacific Director, NAVFAC contracting officials did not assess the contractor's MEC clearance capabilities as part of the evaluation and source-selection process for MILCON projects. In addition, JRM and NAVFAC Marianas MEC QA personnel confirmed that they were not involved during the technical evaluation or source-selection processes. Furthermore, MEC QA personnel were not able under current NAVFAC contracting procedures to provide input or provide an assessment of the MEC clearance methods and past performance of the contractors during the contractor performance evaluation process.

NAVFAC officials evaluated proposals that did not accurately reflect the site conditions. JRM MEC QA personnel stated that prime contractors normally bid on the MILCON projects with the intent to subcontract MEC clearance. According to a JRM MEC QA official, the subcontractors were at a disadvantage because they were not allowed to visit the MILCON site before the prime contractor's proposals were submitted to the Government. Without a site visit, potential subcontractors were not able to assess the magnitude of MEC clearance required for the contract. Prime contractors had to provide proposals to the Government that were based on insufficient data from their potential subcontractors.

The NAVFAC MEC Program Manager stated that, previously, contractors performing MEC clearance at the JRM did not have the necessary experience or qualifications to conduct MEC clearance for MILCON projects. NOSSA personnel identified similar deficiencies in the May 2015 technical assist visit report. NAVFAC contracting officials did not involve JRM MEC QA personnel during the pre-award phase or adequately assess the MEC clearance methods proposed by the contractors. NAVFAC contracting officials also could have benefited from the experience of MEC QA personnel with contractors during source selection. Involving MEC QA personnel could have reduced the need for contract modifications related to MEC clearance as a result of unclear or inaccurate specifications.

Therefore, the NAVFAC Pacific Commander should develop and implement standard operating procedures to ensure that contracting officials are assessing past performance of contractors related to MEC clearance when awarding contracts and including adequate input and analysis from subject-matter experts, such as explosives safety experts, as part of the contracting process.

NAVFAC Personnel Did Not Effectively Administer MEC Activities on MILCON Projects

NAVFAC personnel did not effectively administer MEC clearance activities, including ensuring that contractor personnel notified emergency personnel of MEC encounters in a timely manner. In addition, NAVFAC personnel did not adequately address MEC issues within contract modifications, resulting in conflicting and uncoordinated direction to contractors.

Construction Management Engineers Did Not Always Ensure Timely Notification of MEC Encounters

Construction management engineers allowed contractors to delay reporting MEC, in violation of JRM Instruction 8027.1, which requires anyone who finds unexploded ordnance on Navy or Air Force property to immediately contact the emergency dispatch center to begin response efforts. Based on contractor quality control reports, in many cases, contractor personnel notified Government personnel about MEC discoveries many hours after the original identification. Although the contractor personnel may not have been subject to performing or completing the requirements of the JRM Instruction, construction management engineers should have ensured that actions occurring on the construction site conformed to JRM requirements.

JRM personnel have persistently lacked communication and coordination among contracting personnel, construction managers, MEC QA personnel, and contractors, as indicated by quality control reports we reviewed for two MILCON sites. Additionally, in the NOSSA visit reports for March 27 through 30, 2017, and March 15, 2018, NOSSA officials stated that a lack of coordination and communication existed between all parties involved in the execution of the MILCON projects at the JRM.

For example, the contractor did not always notify emergency personnel immediately when MEC was discovered, as indicated by the quality control reports for the Marine Corps main cantonment area construction project. The contractor reported timelines that included delayed notifications of MEC encounters to the emergency specialists. At the Marine Corps main cantonment area, emergency specialists were notified of MEC discoveries within 1 hour in only

3 of the 11 contractor quality control reports reviewed. In 4 of the 11 reports reviewed, emergency specialists were not notified until 3 to 5 hours after the MEC discovery. For three other reports reviewed, the contractor did not notify emergency personnel until 6 to 7 hours after the MEC discovery. Table 3 provides the contractor quality control report numbers, the time of MEC discovery, the time Government personnel were notified, and the time elapsed from the MEC discovery until emergency specialists were notified.

Table 3. Contractor Quality Control Reports for Marine Corps Main Cantonment Area

	Contractor QC Report Number	Time MEC Discovered	Time Government Notified	Time Elapsed From MEC Found to Government Notified
1	358	12:30 p.m.	2:00 p.m.	1 hour, 30 minutes
2	362	4:07 p.m.	4:21 p.m.	14 minutes
3	368	2:40 p.m.	3:25 p.m.	45 minutes
4	382	2:25 p.m.	3:10 p.m.	45 minutes
5	398	9:05 a.m.	12:10 p.m.	3 hours, 5 minutes
6	409	9:00 a.m.	3:00 p.m.	6 hours
7	412	11:15 a.m.	3:00 p.m.	3 hours, 45 minutes
8	432 (M33)	9:15 a.m.	2:00 p.m.	4 hours, 45 minutes
9	432 (K35)	10:05 a.m.	2:00 p.m.	3 hours, 55 minutes
10	438	8:00 a.m.	3:00 p.m.	7 hours
11	456	8:05 a.m.	3:00 p.m.	6 hours, 55 minutes

Source: The DoD OIG.

In addition, the contractors' MEC spot reports for the Lockwood Housing project indicated that the contractor did not always notify emergency personnel in a timely manner. At the Lockwood Housing project, emergency specialists were notified of MEC discoveries within 1 hour in only 8 of the 20 MEC spot reports reviewed. For 5 of the 20 reports reviewed, emergency specialists were not notified until 1 to 3 hours after the MEC discovery. For the remaining seven reports reviewed, the contractor did not notify emergency personnel until more than 3 hours after the MEC discovery. Table 4 provides the contractor MEC spot report dates, the time of MEC discovery, the time Government personnel were notified, and the time elapsed from the MEC discovery until emergency specialists were notified.

Table 4. Contractor MEC Spot Reports for Lockwood Housing Project

	Date of Report	Time MEC Discovered	Time Government Notified	Time Elapsed From MEC Found to Government Notified
1	May 10, 2016	11:05 a.m.	1:20 p.m.	2 hours, 15 minutes
2	May 12, 2016	8:50 a.m.	1:05 p.m.	4 hours, 15 minutes
3	May 13, 2016	8:50 a.m.	1:20 p.m.	4 hours, 30 minutes
4	May 17, 2016	1:28 p.m.	1:47 p.m.	19 minutes
5	May 19, 2016	10:55 a.m.	1:20 p.m.	2 hours, 25 minutes
6	May 19, 2016	12:26 p.m.	1:20 p.m.	54 minutes
7	May 23, 2016	1:00 p.m.	2:12 p.m.	1 hour, 12 minutes
8	May 24, 2016	9:40 a.m.	1:35 p.m.	3 hours, 55 minutes
9	May 24, 2016	12:20 p.m.	1:35 p.m.	1 hour, 15 minutes
10	May 27, 2016	10:14 a.m.	1:30 p.m.	3 hours, 16 minutes
11	June 2, 2016	1:15 p.m.	1:58 p.m.	43 minutes
12	June 6, 2016	10:14 a.m.	1:50 p.m.	3 hours, 36 minutes
13	June 8, 2016	2:15 p.m.	2:41 p.m.	26 minutes
14	June 9, 2016	12:40 p.m.	1:57 p.m.	1 hour, 17 minutes
15	June 13, 2016	10:14 a.m.	1:50 p.m.	3 hours, 36 minutes
16	June 14, 2016	1:10 p.m.	1:17 p.m.	7 minutes
17	June 17, 2016	1:30 p.m.	2:00 p.m.	30 minutes
18	June 17, 2016	1:50 p.m.	2:00 p.m.	10 minutes
19	June 21, 2016	1:30 p.m.	2:00 p.m.	30 minutes
20	June 28, 2016	9:00 a.m.	2:16 p.m.	5 hours, 16 minutes

Source: The DoD OIG.

According to MEC QA specialists, contractors and Government personnel at construction sites continued working rather than reporting the MEC encounters immediately in accordance with the JRM instruction. The reports we reviewed for the two projects confirmed this statement. In each instance of MEC discovery, contractors did not contact Government personnel about the MEC discovered until the afternoon; however, 14 of the 30 total MEC encounters occurred before 11:00 a.m. Alternatively, in the 11 instances that contractors reported MEC within 1 hour of the encounter, the contractors initially encountered the MEC after

12:00 p.m. According to MEC spot reports, by reporting MEC later in the day, contractors and construction management engineers were able to continue working and reduce delays related to the Explosives Ordnance Disposal response.[43]

Contracting officers are responsible for ensuring that contract requirements meet JRM reporting criteria once MEC is encountered. However, we reviewed contract requirements for awards issued after the JRM instruction that gave contractors up to 4 hours to make the report, instead of requiring immediate notification, as required by the JRM instruction.

In addition, JRM MEC QA personnel stated that because of communication breakdowns and the lack of an established notification process, they did not always receive notification when MEC was discovered and sometimes found out after the MEC item had been cleared and removed by Explosives Ordnance Disposal personnel.

The JRM Commander should issue policy to establish the roles, authorities, and duties of the personnel involved with the MILCON and MEC clearance processes to clarify the communication and notification requirements during the completion of MILCON projects in accordance with MEC clearance standards. The NAVFAC Marianas Commander should review the actions of personnel responsible for oversight of contractors to determine if those actions allowed contractors to delay reporting of MEC encounters instead of reporting them immediately in accordance with JRM policy and initiate action as appropriate. Furthermore, the NAVFAC Pacific Commander should issue a memorandum to contracting officials to ensure all future contracts include reporting requirements consistent with the JRM instruction for the reporting of MEC encounters.

NAVFAC Personnel Did Not Adequately Address Confusion Among Personnel Involved With JRM MILCON Projects

NAVFAC personnel did not always understand the roles and responsibilities of each office or individual involved in the MEC process, resulting in inefficiencies related to management and oversight of contracts. During our interviews with contracting officers, construction management engineers, and MEC QA specialists, we identified errors and misconceptions related to these individuals' understanding of the duties, responsibilities, and authorities of each office involved in MILCON and MEC clearance.

[43] The delivery order for the Lockwood Housing project was issued before the JRM instruction requiring immediate reporting of MEC encountered; however, the Instruction was in place before these MEC spot reports were completed. Therefore, the Government personnel responsible for contractor oversight should have taken steps to ensure the project complied with the JRM criteria even though the contract requirements did not specify a reporting timeframe.

For example, a NAVFAC contracting officer and MEC QA specialist disagreed about what the contracting officer could require from a contractor based on the language in the contract specifications. As noted, the Guam Strike Fuel Systems Maintenance Hangar contractor completed a digital geophysical mapping scan as indicated in its proposal and as accepted by the contracting officer. The contracting officer believed that the contractor's proposed method of completing a surface scan using digital geophysical mapping would be sufficient; however, the MEC QA specialist noted areas within Ordnance Pamphlet 5 that require scanning in layers. The MEC QA specialist stated that he believed that the contractor should be required to complete the work without contract modification because the contract already called for performance to comply with Ordnance Pamphlet 5.

Contracting officers did not incorporate or incorrectly incorporated MEC requirements into contracts as noted throughout this report. NAVFAC contracting personnel required modifications to ensure that contracts included adequate MEC clearance requirements. However, construction management engineers and MEC clearance personnel did not always understand each other's roles and responsibilities, resulting in difficulties in effectively incorporating modifications to the contracts. Construction management engineers are responsible for completing a project on time and within budget while MEC QA personnel are responsible for compliance with explosives safety standards. Contracting and construction management personnel not trained in unexploded ordnance struggle to find value in MEC clearance because it can be time-consuming and often causes delays in construction projects. Although both construction management engineers and MEC QA personnel focused on their responsibilities, coordinating efforts to identify the most efficient ways to address the problems created by MEC at the JRM would have benefitted all parties.

Because NAVFAC personnel did not adequately understand each other's roles and responsibilities, MEC clearance activities for MILCON projects were not always awarded and administered efficiently and effectively. If NAVFAC Pacific and NAVFAC Marianas personnel, including the contracting officer, construction management engineers, and MEC QA personnel, would have relied on each other's expertise during the various phases of the MILCON project, the DoD may have:

- developed requirements and specifications that complied with MEC clearance standards and could be obtained using the benefits of competition;
- reduced the need to make modifications and incur costs as a result of the delays by adding MEC clearance to the contract after the contract award;
- clarified expectations between the contracting personnel and construction management engineers, who are responsible for ensuring MILCON projects are delivered on time and within budget, and the MEC QA personnel who are responsible for ensuring explosives safety standards are met;

- allowed DoD personnel to refine the MILCON and contracting processes to determine the most efficient implementation of MEC clearance standards; and
- better assessed the safety aspects of methods used and developed by contractors to determine if alternative methods, such as using physical barriers, or conducting MEC clearance at off-peak hours, could be implemented into the ESS and explosives safety standards.

The NAVFAC Pacific Commander could increase the overall effectiveness of the contracting process by issuing guidance and providing training to ensure that personnel involved in MILCON projects on Guam are familiar with explosives safety standards, MEC issues affecting ongoing and future MILCON projects, and the roles and responsibilities of each office involved in the MEC process.

Inefficient Planning and Implementation of MEC Clearance Delayed MILCON Projects and Impacted DoD Operations

DoD personnel did not adequately plan or implement MEC clearance standards, resulting in unnecessary delays and costs of more than $100 million directly related to MEC clearance for MILCON projects from FYs 2015 through 2017. By ineffectively managing MEC, DoD personnel risk not being able to comply with international agreements and not completing the move of Marines from Okinawa to the JRM under the $8.7 billion funding cap.[44] In August 2017, a MEC program manager estimated that MEC clearance may cost as much as $1.6 billion over the next 10 years. Contracting officers issued at least four contracts that did not adequately consider the MEC requirements of the project or the contractor's ability to meet those requirements as part of the overall contract issuance process. Additionally, MEC QA personnel are unable to perform their jobs because of a lack of sufficient personnel and equipment to perform oversight over the large volume of ongoing MILCON projects. Decreased QA over MEC clearance activities presents a safety concern for DoD personnel, contractors, and civilians on Guam.

Furthermore, DoD personnel have not efficiently addressed MEC at the JRM or the impact that MEC has on the operations in the region. Consistent reductions in scope and delays of JRM MILCON projects have decreased the DoD's overall operational readiness and ability to build a more lethal force in the region. Marine Corps officials stated that, while MEC clearance delays have definitely increased MILCON project costs, these delays have also impacted readiness in the region and the ability to conduct joint training exercises with U.S. allies.

[44] Agreement between United States and Japan Governments signed February 17, 2009, and amended October 3, 2013, to relocate III Marine Expeditionary Force personnel and their dependents from Okinawa.

For example, the Marines are scheduled to host a recurring joint operation with Australian forces; however, those exercises cannot take place until the ranges on the Island of Tinian are constructed. According to Marine Corps officials, the lack of an operational range adds a significant cost to operations and a loss of productivity, as Marine Corps officials must send personnel to Hawaii to obtain required small arms certifications and handgun training.

Additionally, Marine Corps officials stated that delays caused by MEC clearance have hindered their ability to fulfill their required responsibilities because they cannot build facilities and associated infrastructure needed to handle their mission requirements. For example, JRM officials' MILCON project for a paint shop with the infrastructure to handle the painting of helicopters has been delayed because of MEC clearance at the construction site. Until the paint shop is completed, Marine Corps officials must transport helicopters on ships to the continental United States for repainting. Marine Corps officials stated that the added costs of transporting the helicopters to the United States and back to Guam negatively impacts their operational costs. Furthermore, the increased time required to transport the helicopters back and forth also negatively impacts operations because helicopters are not available for extended periods.

According to Air Force officials, the MEC clearance process has delayed construction of facilities critical to protecting DoD assets, including hangars, which are needed to meet fuel system maintenance requirements and protect home-stationed aircraft. Additionally, adversaries in the region operate without regard to MEC or environmental concerns and have completed construction of facilities that threaten operations at the JRM, thus hindering the DoD's ability to implement the National Defense Strategy to restore readiness and manage a more deterrent force. DoD officials' ability to maintain overall readiness in the region is at risk because of consistent delays in the completion of required MILCON projects.

DoD personnel can adjust current processes to more efficiently address MEC and improve future MILCON efforts, thereby decreasing the impact MEC has on MILCON projects and avoiding cost increases and schedule delays. Additionally, DoD personnel can improve future MEC clearance by implementing a more efficient deviation approval process and establishing a process for contractors to propose new or alternative MEC clearance methods. By properly managing MEC, DoD officials can ensure that more than 50 projects associated with the planned $8 billion Defense Policy Review Initiative construction, as well as other construction in the JRM, are impacted only to a limited extent relative to the safety risks posed by MEC.

DoD Actions Taken to Improve the MEC Process

DoD personnel have taken actions to mitigate the inefficiencies related to MEC clearance identified during recent JRM MILCON projects.

Assistant Secretary of the Navy Accepted Risk With Previously Disturbed Soil

On January 24, 2019, the Assistant Secretary of the Navy (Energy, Installations, and Environment) issued a memorandum to the JRM Commander regarding acceptance of MEC risks. On behalf of the Secretary of the Navy, the Assistant Secretary accepted the risk of encountering MEC on previously disturbed soil and stated that he considers the soil as having a low likelihood of containing MEC and material potentially presenting an explosive hazard (MPPEH) when reasonable knowledge exists that previous work occurred and no MEC was discovered.

As of May 2019, JRM personnel were still determining how to implement the memorandum. This memorandum is a positive step toward managing the potential risks of encountering MEC as part of MILCON projects; however, because the memorandum specifically applies to areas where no MEC was previously discovered and does not include all areas, implementation may be limited based on the volume of MEC previously identified at the JRM.

Communication Between Explosives Safety Experts, Construction Managers, and JRM Leadership Has Improved

DoD personnel have taken two actions—conducting recurring meetings and establishing the MEC Process Improvement Team—to improve communication between stakeholders affected by MEC.

The NOSSA Commander established recurring "drumbeats" beginning in September 2017 with personnel from the JRM; NAVFAC; Chief of Naval Operations; Commander, Naval Installations Command; Assistant Secretary of the Navy for Energy, Installations, and Environment; and the Air Force routinely participating. Personnel who attend the drumbeats discuss ongoing and newly encountered issues, and communicate the results of meetings to various levels of DoD leadership, share best practices, discuss pending criteria changes, identify personnel and staffing issues, and prioritize projects and tasks related to conducting MEC clearance.

In addition, the JRM Commander issued JRM Instruction 8000.15A, "Munitions and Explosives of Concern Oversight Program," on November 13, 2018, to establish the MEC Process Improvement Team. The commander established this team as a forum to address and resolve MEC-related issues, increase regional MEC

awareness, facilitate MEC-related communication to and from the field, and provide timely risk-based recommendations to the JRM Commander. The MEC Process Improvement Team members and advisers include construction managers, explosives safety experts, and leadership from both JRM and NAVFAC Marianas.

Both of these actions improved communications among the various MEC team members; however, additional opportunities exist to further improve communication, as demonstrated in this report.

NAVFAC Personnel Are Developing GIS Information on Recovered MEC

As discussed in this report, NAVFAC personnel are working to develop a conceptual site model of the MEC encountered on Guam; however, they are experiencing challenges to completing that task. NAVFAC Marianas personnel have records of MEC encounters on Guam dating back to 1991, but those records contain inaccuracies. NAVFAC Marianas personnel are sorting through these records to determine which information is useful for assessing the likelihood that MEC exists in construction areas on Guam. In addition, a contractor has decided not to renew its contract for work related to verifying the accuracy of records, thus slowing progress on the project. However, a NAVFAC Marianas Global Information Systems expert confirmed that NAVFAC Pacific will continue to fund the efforts if suitable contractors can be identified. By continuing these efforts, NAVFAC leadership should ensure that the data from MEC encountered on Guam can be refined and used as justification to better implement MEC clearance processes in the future.

Recommendations, Management Comments, and Our Response

Recommendation 1

We recommend that the Under Secretary of Defense for Acquisition and Sustainment:

a. Perform a documented review of explosives safety standards—in conjunction with DoD Explosives Safety Board representatives, Service-level policymakers, and construction managers with experience on projects involving munitions and explosives of concern clearance—to determine whether increased munitions and explosives of concern risk is acceptable in certain instances based on the adverse operational risks that munitions and explosives of concern clearance has created.

Deputy Assistant Secretary of Defense for Infrastructure Comments

The Deputy Assistant Secretary of Defense for Infrastructure, responding for the Under Secretary of Defense for Acquisition and Sustainment, agreed with the recommendation and stated that Office of the Under Secretary of Defense for Acquisition and Sustainment officials would review explosives safety standards with all parties having equity in the process to determine if increased risk is acceptable to mitigate operational impacts. The Deputy Assistant Secretary stated the officials will document the review in writing and complete the review within 1 year of the issuance of this audit report.

Our Response

Comments from the Deputy Assistant Secretary addressed the specifics of the recommendation; therefore, the recommendation is resolved but will remain open. We will close the recommendation when the Deputy Assistant Secretary provides documentation supporting all parties with an equity in the process, have reviewed the explosives safety standards to determine whether increased risks is acceptable to mitigate operational impacts.

b. Issue guidance for estimating and presenting munitions and explosives of concern clearance costs on DD Form 1391, "FY____ Military Construction Project Data," that will enable personnel to assess the accuracy of the munitions and explosives of concern clearance budget and enable DoD leaders to refine future military construction projects based on historical comparisons of methods used to develop munitions and explosives of concern clearance budgets.

Deputy Assistant Secretary of Defense for Infrastructure Comments

The Deputy Assistant Secretary of Defense for Infrastructure, responding for the Under Secretary of Defense for Acquisition and Sustainment, agreed with the recommendation and stated that Office of the Under Secretary of Defense for Acquisition and Sustainment officials will publish updated guidance for estimating and presenting costs on the DD Form 1391, "FY _____ Military Construction Project Data." The updated guidance will allow for refinement based on historical data and provide details to enable an assessment of accuracy. The Deputy Assistant Secretary of Defense stated the officials will publish updated guidance within 1 year of the issuance of this audit report.

Our Response

Comments from the Deputy Assistant Secretary addressed the specifics of the recommendation; therefore, the recommendation is resolved but will remain open. We will close the recommendation when the Deputy Assistant Secretary provides documentation to support the guidance was updated to address this recommendation.

c. Issue procedures or other clarifying guidance to establish authorities and ensure that any revised explosives safety standards include language concerning when revisions become effective and how existing military construction contracts are affected by changes in standards.

Deputy Assistant Secretary of Defense for Infrastructure Comments

The Deputy Assistant Secretary of Defense for Infrastructure, responding for the Under Secretary of Defense for Acquisition and Sustainment, agreed with the recommendation and stated that Office of the Under Secretary of Defense for Acquisition and Sustainment will establish guidance for ensuring that revised explosive safety standards include language concerning when the changes become effective and how they address current MILCON contracts. The Deputy Assistant Secretary stated the updated guidance will be published within 1 year of the issuance of this audit report.

Our Response

Comments from the Deputy Assistant Secretary addressed the specifics of the recommendation; therefore, the recommendation is resolved but will remain open. We will close the recommendation when the Deputy Assistant Secretary provides documentation to support guidance was issued to address this recommendation.

Recommendation 2

We recommend that the Chief of Naval Operations determine if a more efficient process exists to approve deviation requests from installation commanders in a timely manner to reduce further schedule delays and associated cost increases for military construction projects. If a more efficient process exists, the Chief should implement that process throughout the Navy.

Office of the Chief of Naval Operations Comments

The Logistics - Supply Chain Operations Director, responding for the Chief of Naval Operations, agreed with the recommendation. The Director stated that delays in the process are usually encountered when incorrect or incomplete products

are produced by the activity requesting the deviation. The Director noted that current Navy deviation processes are a proven method, but that efficiencies may be gained after the other recommendations from this report are implemented and a steady-state is obtained. The Director agreed to reassess the deviation process used by the Navy after the other recommendations are implemented.

Our Response

Comments from the Director addressed the specifics of recommendation; therefore, the recommendation is resolved but will remain open. We will close the recommendation when the Director provides evidence that Navy officials have reassessed the deviation process.

Recommendation 3

We recommend that the Commander of the Naval Facilities Engineering Command:

a. Perform a review to determine the quality assurance staffing requirements for munitions and explosives of concern at Naval Facilities Engineering Command Marianas and identify potential solutions to address vacant positions.

Naval Facilities Engineering Command Comments

The NAVFAC Inspector General, responding for the NAVFAC Commander, agreed with the recommendation and stated that NAVFAC completed a staffing review to address MEC QA. NAVFAC is in the process of hiring for a position and expect to have the action completed by September 30, 2020.

Our Response

Comments from the Inspector General addressed the specifics of the recommendation; therefore, the recommendation is resolved but will remain open. We will close the recommendation when the Inspector General provides documentation supporting the review to determine quality assurance staffing requirements, and actions to address vacant positions.

b. Conduct a study to determine the amount of equipment necessary for quality assurance personnel to perform adequate oversight over munitions and explosives of concern clearance activities and identify a solution to obtain the necessary equipment the study deems necessary to reduce contract delays related to oversight.

Naval Facilities Engineering Command Comments

The NAVFAC Inspector General, responding for the NAVFAC Commander, agreed with the recommendation and stated that NAVFAC Marianas has developed a list of equipment required for personnel to perform MEC QA, and assembled the kits for MEC QA personnel to use. In addition, NAVFAC Marianas has identified equipment shortfalls and plans to procure the additional equipment by December 31, 2020.

Our Response

Comments from the Inspector General addressed the specifics of the recommendation; therefore, the recommendation is resolved but will remain open. We will close the recommendation when the Inspector General provides documentation supporting the identification of equipment necessary to perform MEC QA, identification of equipment shortfalls, and procurement of equipment to address the shortfalls.

c. Conduct a study to examine potential alternative funding sources for performing munitions and explosives of concern clearance and related quality assurance to determine whether a more accurate and equitable method is available to meet the mission as it relates to military construction on Guam.

Naval Facilities Engineering Command Comments

The NAVFAC Inspector General, responding for the NAVFAC Commander, agreed and stated that NAVFAC Headquarters will task NAVFAC Pacific to conduct a study examining potential alternative funding sources. NAVFAC plans to complete this study by October 31, 2020.

Our Response

Comments from the Inspector General addressed the specifics of the recommendation; therefore, the recommendation is resolved but will remain open. We will close the recommendation when the Inspector General provides documentation supporting that the study of potential alternative funding sources was completed.

Recommendation 4

We recommend that the Commander of the Naval Facilities Engineering Command Pacific:

a. Issue guidance and provide training to ensure that personnel involved in military construction projects on Guam are familiar with explosives safety standards, munitions and explosives of concern issues affecting ongoing and future military construction projects, and the roles and responsibilities of each office involved in the munitions and explosives of concern process.

Naval Facilities Engineering Command Comments

The NAVFAC Inspector General, responding for the NAVFAC Pacific Commander, agreed with the recommendation and stated that NAVFAC Pacific provided MEC training to personnel, and NAVFAC Marianas provided two "MEC 101" basic training sessions to personnel. NAVFAC officials plan to conduct the MEC 101 training annually, pending funding, and incorporate the training into a formalized requirement by June 30, 2020. When funds are not available for the training, NAVFAC leadership will increase engagement, mentoring, and management of personnel across the MEC QA personnel and project delivery teams related to MEC policies and procedures.

Our Response

Comments from the Inspector General addressed the specifics of the recommendation; therefore, the recommendation is resolved but will remain open. We will close the recommendation when the Inspector General confirms that NAVFAC personnel have incorporated the training into a formalized requirement for MEC QA personnel and project delivery teams.

b. Issue guidance to contracting personnel on taking the necessary steps to ensure that contract requirements for all ongoing and future Guam military construction projects include a standardized after-action report format that meets the Government's need for analyzing munitions and explosives of concern encounters and that these after-action reports are provided as a contract deliverable.

Naval Facilities Engineering Command Comments

The NAVFAC Inspector General, responding for the NAVFAC Pacific Commander, agreed with the recommendation and stated that NAVFAC has developed a policy to reinforce contractual requirements to submit properly formatted after-action reports. This policy has been updated and incorporated into NOSSA guidance. NAVFAC Marianas personnel also revised the standard MEC contract specification template in December 2018 to reflect this format. NAVFAC MEC QA personnel will review after-action reports and provide them to JRM personnel for submission to NOSSA. NAVFAC personnel will keep construction contracts active until after-action reports and other closeout documents are received and approved. The Inspector General considered the action complete.

Our Response

Comments from the Inspector General partially addressed the specifics of the recommendation; therefore, the recommendation is unresolved. The actions identified by the Inspector General will address contracts issued after the December 2018 standard MEC contract specifications template update; however, it

is unclear how contracting officers on contracts issued before December 2018 will ensure adequate after-action reports are provided. Unless contracts issued before December 2018 are modified, contractors are not obligated to submit properly formatted after-action reports. The NAVFAC Inspector General should provide additional comments specific to contracts issued before December 2018.

c. Develop and implement standard operating procedures to ensure that contracting officials are assessing past performance of contractors related to munitions and explosives of concern clearance when awarding contracts and including adequate input and analysis from subject-matter experts, such as explosives safety experts as part of the contracting processes.

Naval Facilities Engineering Command Comments

The NAVFAC Inspector General, responding for the NAVFAC Pacific Commander, agreed with the recommendation and stated that contractor performance assessments are a part of all evaluations, and stated that NAVFAC Marianas is updating guidance to re-emphasize the requirement to perform the assessments, specifically for MEC munitions response activities. In addition, the Inspector General stated that the duties of the NAVFAC Marianas MEC program manager include serving as the MEC technical adviser to source selection boards where such expertise is required. The estimated completion date for this action is May 30, 2020.

Our Response

Comments from the Inspector General addressed the specifics of the recommendation; therefore, the recommendation is resolved but will remain open. We will close the recommendation when the Inspector General provides the updated NAVFAC Marianas policy re-emphasizing the requirement to perform contractor performance assessments specifically for MEC munitions response activities.

d. Issue a memorandum to contracting officials to ensure all future military construction contracts include reporting requirements consistent with Joint Region Marianas instructions for the reporting of munitions and explosives of concern encounters.

Naval Facilities Engineering Command Comments

The NAVFAC Inspector General, responding for the NAVFAC Pacific Commander, agreed with the recommendation and provided an operations note describing the considerations for executing MEC response activities in construction contracts. The Inspector General noted that the ESS and MEC contract specifications will

continue to be updated and refined by project delivery teams with concurrence from explosives safety experts with NAVFAC and the JRM. The Inspector General stated that NAVFAC considers this action complete.

Our Response

Comments from the Inspector General addressed the specifics of the recommendation; therefore, the recommendation is closed. We consider the operations note provided as adequate action to address the recommendation.

Recommendation 5

We recommend that the Joint Region Marianas Commander:

a. Determine whether personnel were required to use their privately owned vehicles to perform the Government's munitions and explosives of concern quality assurance mission, retroactively reimburse any mileage that employees can confirm, and determine whether officials committed an augmentation of appropriated funds potentially in violation of the Antideficiency Act.

Joint Region Marianas Command Comments

The JRM Commander agreed with the recommendation and stated that privately owned vehicles were used during the period from October 2017 through July 2018; however, the Government did not direct the use of those vehicles. In addition, the Commander stated that no claims for reimbursement were submitted and no violations of the Antideficiency Act were identified. The JRM Explosives Safety office has obtained a vehicle for use and has access to a more suitable vehicle when needed until the office is able to secure a vehicle for exclusive use. The Commander determined that actions to address this recommendation were complete.

Our Response

Comments from the Commander addressed the specifics of the recommendation; therefore, the recommendation is closed. We note that the Commander stated that privately owned vehicles were used. We conclude that there may be instances where reimbursement for using privately owned vehicles could be requested in the future. The Commander would need to analyze these claims to determine if reimbursement is authorized and warranted.

b. Develop a plan to ensure tools based on historical and current data to assist in making decisions about the likelihood of encountering munitions and explosives of concern during military construction projects are adequately resourced.

Joint Region Marianas Command Comments

The JRM Commander agreed with the recommendation and stated that JRM has a plan to manage the GIS, but that resources are required with the JRM Explosives Safety office to manage the system. JRM officials have been unable to find suitable candidates for the two vacant positions required to maintain the system. The JRM Commander noted that filling both vacant positions is beyond JRM's control, and stated that functional support from the Commander, Naval Installations Command is required to remedy the current shortfalls. The Commander determined that actions to address this recommendation were complete.

Our Response

Comments from the Commander addressed the specifics of the recommendation; however, the recommendation remains unresolved. While we understand filling the two vacant positions may be out JRM's control, we request further comments from the JRM Commander regarding how the JRM is working with the Commander of Navy Installations Command to address the resourcing issue and obtain the support necessary.

c. Develop and implement corrective actions to address any open deficiencies identified in Naval Ordnance Safety and Security Activity technical assist visit reports.

Joint Region Marianas Command Comments

The JRM Commander agreed with the recommendation and noted that NOSSA technical assist visit reports do not require formal comments. However, the Commander stated JRM officials provided formal responses to the last two visits. The Commander determined that actions to address this recommendation were complete.

Our Response

Comments from the Commander did not address the specifics of the recommendation; therefore, the recommendation remains unresolved. We acknowledge that NOSSA technical assessment visit reports do not require formal comments and that JRM has formally commented on the previous reports. However, our recommendation is regarding the implementation of corrective actions taken to address the NOSSA findings. The previous JRM Commander's responses to the NOSSA technical assist visit report dated June 27, 2017, identified open actions, notably completing a significant re-write of the ESS and developing a soil management plan, that have not been completed to date. We request further comments regarding how the open actions will be completed or why it is no longer necessary to address the NOSSA findings.

d. Develop standard operating procedures to ensure that deviation requests are processed consistently, through the proper channels, and meet the justification criteria for submitting a deviation request.

Joint Region Marianas Command Comments

The JRM Commander agreed with the recommendation and stated that prior to the arrival of the JRM explosives safety staff, there were experienced personnel on staff in the 2017 to 2018 timeframe that were knowledgeable of the requirements associated with deviation request submissions. The Commander also noted that JRM leadership is knowledgeable in the operational necessity thresholds and their responsibilities for submitting deviation requests. The Commander added that JRM Instruction 8020, dated April 12, 2017, and Ordnance Pamphlet 5 also provide further guidance for submitting deviation requests. The Commander determined that actions to address this recommendation were complete.

Our Response

Comments from the Commander did not address the specifics of the recommendation; therefore, the recommendation remains unresolved. Staff and leadership constantly change, especially at locations outside the continental United States. Therefore, we recommended that the JRM develop standard operating procedures to ensure continuity of processes and operations at the JRM. Although Ordnance Pamphlet 5 establishes procedures for processing deviation requests, the policy does not specify how the JRM assesses the various situations for determining when a deviation request is developed and submitted up the chain of command. Although JRM Instruction 8020 is specific to the JRM, we identified challenges relating to processing deviation requests within the JRM after the Instruction issuance date. Therefore, we request further comments from the Commander related to developing, revising, or emphasizing policy specific to the JRM for processing deviation requests.

e. Implement long-term construction schedule plans, work with contracting officials to ensure that contracts consider potential delays in the original award, and develop deviation requests for managing exclusion zones to minimize delays resulting from the impacts of munitions and explosives of concern clearance on construction projects in overlapping exclusion zones.

Joint Region Marianas Command Comments

The JRM Commander agreed with the recommendation and stated that JRM Instruction 8000.15A, issued November 30, 2018, establishes the MEC oversight program and the MEC Process Improvement Team. The MEC Process

Improvement Team is responsible for adjudicating various areas including deviation requests, risk management, resolution of QA challenges, and contracting concerns. The Commander determined that actions to address this recommendation were complete.

Our Response

Comments from the Commander partially addressed the recommendation; therefore, the recommendation is unresolved. We agree that the MEC Process Improvement Team has increased the ability to address MEC-related issues at the JRM. However, JRM personnel should address planning and prioritizing multiple construction projects and implementing actions to address excusable delays into contracts as a result of overlapping exclusion zones. The MEC Process Improvement Team, as currently established, is unlikely to address these issues.

We acknowledge that JRM Instruction 8000.15A establishes Public Works and Acquisition Directors as advisers to the MEC Process Improvement Team. However, the MEC Process Improvement Team agenda items focus on addressing MEC issues, not construction planning of multiple projects or contracting awards processes to address MEC issues before they arise. We request additional comments from the Commander to address construction planning and proactively addressing potential overlapping MEC exclusion zone delays during the contract award process.

f. Issue policy to establish the roles, authorities, and duties of the personnel involved with the military construction and munitions and explosives of concern clearance processes to clarify procedures for communication and notification requirements during the completion of military construction project in accordance with munitions and explosives of concern clearance standards.

Joint Region Marianas Command Comments

The JRM Commander agreed with the recommendation and stated that the JRM issued a notice in May 2019 to establish Critical Information and Significant Event reporting requirements. The Regional Operations Center initiates a response when the Explosive Ordnance Disposal team provides support and the distribution notice related to the response includes MEC QA personnel. The Commander determined that actions to address this recommendation were complete.

Our Response

Comments from the Commander partially addressed the specifics of the recommendation; therefore, the recommendation is unresolved. The section of the JRM notice referenced in the comments does not appear to be applicable to MILCON projects completed on the JRM installation. The Commander references

a section specific to mutual aid that includes a standing request for information to provide a final report when all personnel and equipment have returned to the installation. The Commander should provide additional comments related to the steps taken to ensure that notifications occur when contractors encounter MEC on the installation, specifically at MILCON project sites.

Recommendation 6

We recommend that the Commander of the Naval Facilities Engineering Command Marianas:

a. Issue a memorandum directing personnel to provide after-action reports to geographic information systems personnel to include in the mapping tool.

Naval Facilities Engineering Command Comments

The NAVFAC Inspector General, responding for the NAVFAC Marianas Commander, agreed with the recommendation and referred to the response for Recommendation 4.b. The Inspector General added that after-action reports are provided to JRM explosives safety and GIS personnel. The Inspector General considered this action complete.

Our Response

Comments from the Inspector General addressed the specifics of the recommendation; therefore, the recommendation is closed. The policy update referenced in Recommendation 4.b notes that after action reports are provided to the JRM to forward to NOSSA. GIS personnel should have access to the after-action reports through this process. Although Recommendation 4.b remains open because the Inspector General's comments did not address existing contracts, the intent of Recommendation 6.a is met by establishing the process.

b. Establish a process for evaluating contractor-requested alternative methods for munitions and explosives of concern clearance to determine the feasibility and safety implications of the request and whether it should be forwarded to the Naval Ordnance Safety and Security Activity and the Department of Defense Explosives Safety Board for consideration and approval.

Naval Facilities Engineering Command Comments

The NAVFAC Inspector General, responding for the NAVFAC Marianas Commander, agreed with the recommendation and stated that in the event an alternative method is proposed, the MEC QA specialist will perform a review of the technique and potentially seek guidance from the MEC Process Improvement Team if the

proposed solution has merit. The MEC Process Improvement Team will then present the proposal to NOSSA and the DDESB as necessary. The Inspector General considered this action complete.

Our Response

Comments from the Inspector General addressed the specifics of the recommendation; however, we determined that the discussed process creates a potential conflict of interest in the MEC QA specialist duties. Therefore, the recommendation is unresolved. MEC QA specialist duties are to ensure that contractors comply with Navy and DoD explosives safety criteria, not to assess the legitimacy of processes outside of these procedures, nor to advocate for those processes. The NAVFAC Inspector General should provide additional comments that either identify another position to assess the feasibility of alternative methods or explain steps taken to remove conflicts that the MEC QA specialists would encounter if required to perform the assessment of alternative methods.

c. Review the actions of personnel responsible for oversight of contractors to determine if their actions allowed contractors to delay reporting munitions and explosives of concern encounters instead of reporting them immediately, in accordance with Joint Region Marianas policy, and initiate action as appropriate.

Naval Facilities Engineering Command Comments

The NAVFAC Inspector General, responding for the NAVFAC Marianas Commander, agreed with the recommendation and stated that NAVFAC Marianas will conduct a review of past practices of contractor oversight personnel to ascertain if reporting is occurring in accordance with JRM policies. NAVFAC Marianas will review applicable guidance and implement training where appropriate. NAVFAC personnel will also review the MEC contract specification template to ensure that it reflects updated JRM criteria. The estimated completion date for this action is June 30, 2020.

Our Response

Comments from the Inspector General addressed the specifics of the recommendation; therefore, the recommendation is resolved but will remain open. We will close the recommendation when NAVFAC Marianas provides documentation supporting the review of past practices of contractor oversight personnel to determine whether reporting is occurring in accordance with policies, and evidence that the actions identified have been completed.

Appendix A

Scope and Methodology

We conducted this performance audit from November 2018 through April 2020, in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Our announced objective was to determine to what extent the DoD is executing the Defense Environmental Restoration Program to identify, investigate, and clean up munitions and explosives at the JRM. However, after meeting with DoD and Navy leadership, we determined that we needed to clarify this objective and we removed the Defense Environmental Restoration Program from the objective. The revised objective of this audit is to determine whether DoD personnel implemented safety standards and quality assurance controls for addressing MEC during MILCON projects on Guam, and whether DoD personnel properly managed safety concerns and readiness related to MEC on Guam in accordance with military standards and risk-management instructions.

Review of Documentation and Interviews

We obtained and analyzed documentation and criteria issued by DoD, NOSSA, NAVFAC Pacific and NAVFAC Marianas personnel. The documents included instructions, procedures, and guidance regarding safety explosives standards pertaining to the DoD and specific to Joint Region Marianas. In addition, we reviewed documentation provided by JRM MEC QA personnel that included MEC incident reports from May through June 2016 and September through December 2018. We reviewed the following guidance and documentation.

- DoD Directive 6055.09E, "Explosives Safety Management," August 31, 2018
- DDESB Technical Paper 16, "Methodologies for Calculating Primary Fragment Characteristics," Revision 5, December 19, 2016; DDESB Technical Paper 18, "Minimum Qualifications for Personnel Conducting Munitions and Explosives of Concern-Related Activities," September 1, 2016; and DDESB Technical Paper 26, "Guidance for Explosives Safety Site Plans," January 30, 2014
- Naval Sea Systems Command Ordnance Pamphlet Ordnance Pamphlet 5, Volume 1, Seventh Revision, "Ammunition and Explosives Safety Ashore"

- OPNAV Instruction 8020.15A, "Explosives Safety Review, Oversight, and Verification of Munitions Responses," February 27, 2008
- NOSSA Instruction 8020.15D, "Explosives Safety Review, Oversight, and Verification of Munitions Responses," April 18, 2013
- Joint Travel Regulations Chapter 2, "Standard Travel and Transportation Allowances," November 1, 2018
- Explosives Safety Submittal for Munitions Response Sites, Construction Support, U.S. Naval Base, Guam, N61755/CC-002, October 8, 2010 (including all amendments and corrections through Amendment 6)
- JRM Notice 8000, "Munitions and Explosives of Concern Cultural Resources Process," May 1, 2017; JRM Instruction 8000.15A, "Munitions and Explosives of Concern Oversight Program," November 30, 2018; JRM Instruction 8020.3, "Munitions and Explosives of Concern Exclusion Zone Accountability," September 28, 2018; JRM 8027.1, "Explosives Ordnance Disposal Operations," December 29, 2015
- JRM deviation requests both approved and not approved by OPNAV Supply, Ordnance and Logistics Operations Division, N41 from December 2014 through January 2019
- *Campaign in the Marianas*, Philip A. Crowl, Center of Military History, U.S. Army, 1993 (first printed 1960)
- NOSSA technical assist visit reports and responses at the JRM in 2015, 2017, and 2018
- Contracts and documentation for the seven MILCON projects discussed in this report (see Appendix B for contract information), JRM, and NAVFAC MEC QA personnel records, and minutes from meetings related to MEC clearance on Guam from September 2017 through November 2018.

In addition, we interviewed personnel from the Office of the Under Secretary of Defense for Acquisition and Sustainment; the Office of the Assistant Secretary of the Navy for Energy, Installations, and Environment; the Explosives Security Technology Certification Program; DDESB; NOSSA; and NAVFAC Headquarters.

During our site visit in Hawaii we interviewed personnel from the U.S. Indo-Pacific Command; Pacific Air Forces; Air Force Civil Engineer Center; Defense Logistics Agency, and NAVFAC Pacific. In addition, while on Guam we interviewed personnel from the JRM Chief of Staff and Executive Director; the Andersen Air Force Base Vice Commander; the 36th Wing Director; and NAVFAC and JRM MEC QA personnel.

Additionally, we interviewed two contractors that conducted MEC clearance for MILCON projects on Guam, as well as personnel involved with construction management, geospatial engineering, and general counsel. Furthermore, at the JRM, we interviewed representatives from the Air Force, Navy, and Marine Corps commands operating on the JRM.

Use of Computer-Processed Data

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

Use of Technical Assistance

We relied on the DoD Office of the Inspector General (OIG) Research and Engineering Division to participate in the interviews we conducted during the audit and to review the audit report for technical accuracy.

Prior Coverage

During the last 5 years, the DoD, OIG has also issued one report discussing reasons for delays in certain MILCON projects at the JRM. The Government Accountability Office issued one report discussing the infrastructure risks and cost estimates associated with the Marine Corps Asia Pacific Realignment. Unrestricted DoD OIG reports can be accessed at http://www.dodig.mil. Unrestricted GAO reports can be accessed at http://www.gao.gov.

DoD OIG

Report No. DODIG-2020-040, "Audit of Cost Increases and Schedule Delays for Military Construction Projects at Joint Region Marianas," December 11, 2019

> Deputy Assistant Secretary of Defense for Facilities Management, NAVFAC, Air Force, and Defense Logistics Agency officials experienced schedule delays and cost increases for nine MILCON projects valued at $574.4 million at the JRM; however, Guam's unique characteristics and environment present challenges in planning and managing MILCON in the region. As a result, the DoD had a total of 13 years and 5 months in schedule delays and $37.5 million in increased costs over the programmed budgets for the nine projects we reviewed. The DoD's inability to complete MILCON projects at the JRM on time and within the programmed budget is indirectly affecting our National Defense Strategy and DoD priorities.

GAO

Report No. GAO-17-415, "DoD Should Resolve Capability Deficiencies and Infrastructure Risks and Revise Cost Estimates," April 5, 2017

The DoD has taken steps to develop infrastructure plans and schedules for its relocation efforts, but it did not develop a reliable schedule for the Marine Corps relocation to Guam and has not completed its risk planning for infrastructure in Guam. The DoD developed plans that will support construction efforts in Guam and Japan, and developed some initial infrastructure plans for Hawaii and Australia. However, the GAO found the Marine Corps' integrated master schedule for Guam did not fully meet the comprehensive, well-constructed, and credible characteristics for a reliable schedule. If the DoD does not have a reliable schedule or has not completed risk planning for Guam, it may not have complete information to identify and address risks that may result in cost overruns and schedule delays.

Appendix B

MILCON Programming Process

Federal law defines military construction (MILCON) as construction, development, conversion, or extension of any kind carried out with respect to a military installation, whether to satisfy temporary or permanent requirements, or any acquisition of land or construction of a defense access road.[45] DoD officials include MEC clearance costs as part of the MILCON programming process. This method of funding differs from other environmental and range cleanup initiatives that receive funds through broader authorities.

DD Form 1391

The DoD uses DD Form 1391, "FY"____" Military Construction Project Data," to submit requirements and justification to Congress to support funding requests for construction projects funded by MILCON appropriations. The Services, at the installation level, prepare a DD Form 1391 for each proposed construction project and include the project's cost estimate, description of proposed construction, project requirements, current facility or site conditions, the impact on operations if not approved, and any useful supplemental data.[46] For this project, we reviewed DD Form 1391 budget requests processed by the Navy, Air Force, Marine Corps, and DLA for FY 2012 through FY 2018 budget requests related to Guam MILCON projects.

Approval

Installation engineers at the military installation where the construction will occur draft the DD Form 1391 for the installation commander to review and prioritize with other potential MILCON projects and then, depending on the Service, forward it to the regional commands or major commands. Once approved by the commands, the DD Form 1391 is forwarded to the Office of the Secretary of Defense, which reviews and consolidates MILCON projects across the DoD for inclusion in the defense portion of the President's Budget. The Office of Management and Budget and the President make final revisions to the President's Budget and submit it to Congress, which reviews the budget and authorizes and appropriates funds. Additionally, the Office of the Secretary of Defense allocates funds to the Military Services for congressionally approved construction projects. Once congressionally

[45] 10 U.S.C. § 2801 (2018).

[46] In February 2016, the Under Secretary of Defense (Comptroller)/Chief Financial Officer revised the Financial Management Regulation to include environmental remediation (MEC clearance) costs as part of MILCON funding requirements. Before this revision, DoD officials did not consistently include these costs on DD Form 1391.

approved, if a MILCON project's costs increase more than 25 percent of the amount appropriated or $2 million, whichever is less, for the MILCON project, the Office of the Secretary of Defense must notify Congress of the reasons for the increases and the funds proposed to finance the increase.

Appendix C

MILCON Projects Discussed

The following is a list of MILCON projects discussed in the report, a description of each project, and the associated contract numbers.[47]

	Project Description
1	**Pacific Airpower Resiliency-Tanker Group Maintenance Hangar (Project Number 3027)** NAVFAC Pacific contracting personnel awarded a design-bid-build contract to construct a reinforced concrete hangar to sustain critical missions such as Continuous Bomber Presence, Tanker Task Force, and theater Security Packages. NAVFAC Pacific contracting personnel awarded the contract on December 18, 2014, for $96.6 million with a contract completion date of March 22, 2017. Contract N62742-10-D-1307, task order 0002.
2	**Guam Strike Fuel Systems Maintenance Hangar (Project Number 3010)** NAVFAC Marianas contracting personnel awarded a design-bid-build contract to construct a hangar to provide repairs, functionality checks, and inspection on aircraft fuel systems, fuel tanks, and related components in support of the Guam strike mission. NAVFAC Marianas contracting personnel awarded the contract on February 20, 2015, for $89.9 million with a contract completion date of March 21, 2017. Contract N62742-10-D-1307, task order JQ01.
3	**Marine Corps Main Cantonment Area (Project Number J-001B)** NAVFAC Pacific contracting personnel awarded a design-build contract to complete utilities and site preparation work for the future location of the Marine Corps main cantonment area. NAVFAC Pacific contracting personnel awarded the contract on August 17, 2017, for $165 million with a contract completion date of August 16, 2020. Contract N62742-17-C-1324.
4	**Defense Logistics Agency Fuel Pipeline (Project Number 1303)** NAVFAC Marianas contracting personnel awarded a design-bid-build contract to upgrade the existing fuel transfer pipeline from Sasa Valley fuel farm to Andersen Air Force Base on December 21, 2013, for $52.4 million. The project included upgrading two existing 7.5-mile, 10-inch diameter cross-island transfer pipelines and one existing 15.7-mile, 254-millimeter diameter fuel cross-island transfer pipeline. In addition, the project included construction of one new 15.7-mile, 254-millimeter diameter transfer pipeline. Work included upgrading a pumphouse, a new generator building with emergency generators, new filter separators, piping modifications, upgrades to the electrical system, cathodic protection, and leak detection. Contract N40192-14-C-1300.

[47] Contract completion dates do not include time extension modifications still in negotiation.

MILCON Projects Discussed (cont'd)

	Project Description
5	**Lockwood Housing Project (Project Number 1403)** NAVFAC Pacific contracting personnel awarded a design-build contract to provide whole house revitalization to 59 three- and four-bedroom single-family officer and enlisted housing units. In the DD Form 1391, Navy officials explained that the whole-house improvements would bring the housing units up to acceptable DoD housing standards and were required to support Navy service members and their families on Guam. NAVFAC Pacific contracting personnel awarded the contract for $21.6 million on April 30, 2015, with a contract completion date of August 13, 2017. Contract N62742-10-D-1312, task order 0002.
6	**Air Force Petroleum Oil Lubricant Infrastructure Hardening (Project Number 3760)** NAVFAC Marianas contracting personnel awarded a design-bid-build contract to construct reinforced concrete hardened structures around three structures, expanding the hydrant loop system, and providing additional system redundancy. Air Force officials explained that a resilient fuel system is crucial to sustain operations at Andersen Air Force Base and, without hardened structures for these components and hydrant connection, the fuel systems are more vulnerable to temporary loss and potential mission failure in a remote location that is critical to regional security. NAVFAC Marianas contracting personnel awarded the contract for $17.9 million, on October 7, 2014, with a contract completion date of March 30, 2016. Contract N40192-10-D-2804, task order 0020.
7	**Navy Petroleum Oil Lubricant Infrastructure Hardening (Project Number 652)** NAVFAC Pacific contracting personnel awarded a design-bid-build contract to harden shelters over and around three Navy petroleum oil lubricant infrastructure elements on Guam on May 23, 2018, for $24.7 million. Navy officials explained that the Navy requires the risk of damage to its infrastructure be minimized to assure the capability of distributing and dispensing fuel during a contingency and various sites were identified as candidates for hardening to meet this requirement. Contract N62742-18-C-1318.

Source: The DoD OIG

Appendix D

Additional MEC Clearance Guidance

DoD Directive 6055.09E

DoD Directive 6055.09E, "Explosives Safety Management," August 31, 2018, requires DoD Components to implement and maintain an effective explosives safety management program. The DoD protects people and property from the effects of military munitions to execute the mission safely and effectively by exposing the minimum number of people required. Furthermore, DoD Directive 6055.09E provides explosives safety management principles and requirements that provide for immediate protection of people and property when complying with applicable environmental regulations.

DoD Manual 6055.09

DoD Manual 6055.09, "DoD Ammunition and Explosives Safety Standards," is composed of standards designed to manage risks associated with ammunitions and explosives by providing criteria to minimize serious injury, loss of life, and damage to property.

NOSSA Instruction 8020.15D

NOSSA Instruction 8020.15D, "Explosives Safety Review, Oversight, and Verification of Munitions Reponses," April 18, 2013, assigns responsibilities and establishes procedures and reporting requirements to enable NOSSA officials to provide effective review, oversight, and verification of the explosives safety aspects of munitions responses. To ensure appropriate explosives safety requirements, six separate procedures cover actions taken before, during, and after munitions response. These procedures include the site identification and notification, ESS determination request, ESS, oversight, after-action report, and transfer of real property.

JRM Instruction

JRM Instruction 8020.3, "Munitions and Explosives of Concern Exclusion Zone Accountability," September 28, 2018, defines exclusion zone management and provides clarification from the Office of the Chief of Naval Operations. The Instruction establishes that the Office of the Chief of Naval Operations assumes risk for operations where the exclusion zones extend outside the immediate excavation areas and when not able to enforce the evacuation of nonessential personnel within the exclusion zone. Furthermore, the Instruction requires the establishment of a process to document DoD and non-DoD personnel who traverse or are located within the exclusion zones during intrusive operations.

Appendix E

MEC Clearance Requirements in Original Contract and Added Through Modifications

The following is a list of contracts and the relative information for MEC clearance specifications and modifications for the specific MILCON projects discussed in the report.

Contract	Project Title	Contracting Office Location	MEC Requirements in Original Contract	Modifications Issued for MEC Clearance
N62742-10-D-1307, Task Order 0002	Pacific Airpower Resiliency – Tanker Group Maintenance Hanger	NAVFAC Pacific	Contract specifications included performing MEC clearance in accordance with the ESS to construction depth. Contracting officer requested bids based on 500 estimated anomalies per acre.	The contractor communicated to the contracting officer that the contractor identified more anomalies than estimated, a requirement to perform work by removing soil in 6-inch layers was a change to the contract terms, and the contractor's MEC clearance work plan was not reviewed in a timely manner, resulting in a Government-caused delay. The contracting officer negotiated a modification for $3.8 million and 10-month time extension to address the contractor's concerns.
N62742-10-D-1307, Task Order JQ01	Guam Strike Fuel Systems Maintenance Hanger	NAVFAC Marianas	Contract specifications included performing MEC clearance in accordance with the ESS to construction depth. The scope of work included 60,000 cubic yards of soil excavation.	After award, the contracting officer determined that 60,000 cubic yards of soil was insufficient to complete the project and modified the contract to include MEC clearance to construction depth, without identifying the amount of soil expected to be excavated. The contracting officer issued three contract modifications adding a total of $2.4 million and 1 year to the contract to address the additional MEC clearance.
N62742-17-C-1324	Marine Corps Main Cantonment Area	NAVFAC Pacific	We did not review the original contract files because MEC clearance has not required contract modifications and personnel we interviewed did not identify issues with the MEC clearance requirements at contract award.	As of August 2019, the contracting officer has not issued any modifications related to MEC clearance.

See the final page of Appendix E for table notes.

MEC Clearance Requirements in Original Contract and Added Through Modifications (cont'd)

Contract	Project Title	Contracting Office Location	MEC Requirements in Original Contract	Modifications Issued for MEC Clearance
N40192-14-C-1300	Defense Logistics Agency Fuel Pipeline	NAVFAC Marianas	Contract specifications included statements related to performing MEC clearance in accordance with the ESS. However, the ESS areas of concern are only DoD-controlled land. The pipeline is predominately constructed on non-DoD land. Therefore, a determination of whether construction was occurring on areas of low, moderate, or high MEC probability did not exist, making it impossible for the contractor to establish the level of MEC clearance required for construction on the non-DoD land.	NAVFAC Marianas personnel were uncertain about whether MEC clearance was required for construction occurring on non-DoD land after contract award. To incorporate MEC requirements on non-DoD land, the NAVFAC Marianas contracting officer issued three modifications totaling $25.4 million and increased the contract length by 1 year and 8 months.
N62742-10-D-1312, Task Order 0002	Lockwood Housing Project	NAVFAC Pacific	The request for proposals included a single paragraph in the Supplemental Temporary Environmental Controls section stating that the work would need to comply with the ESS. There was no further guidance or restrictions noted in the pre-award files.	The contracting officer issued a modification to include MEC clearance in layers to the contract at a cost of $1.3 million and extended the contract by 4 months.
N40192-10-D-2804, Task Order 0020	Air Force Petroleum Oil Lubricant Infrastructure Hardening	NAVFAC Marianas	According to the statement of work, the contractor was required to investigate anomalies identified in a previously completed digital geophysical mapping scan of the project area.	To comply with MEC clearance standards, the contracting officer added MEC clearance in layers to construction depth to the contract via a modification at a cost of $2.2 million. In addition to the cost increase, the contracting officer extended the contract period three times related to MEC for a total time extension of 3 years and 9 months.

See the final page of Appendix E for table notes.

MEC Clearance Requirements in Original Contract and Added Through Modifications (cont'd)

Contract	Project Title	Contracting Office Location	MEC Requirements in Original Contract	Modifications Issued for MEC Clearance
N62742-18-C-1318	Navy Petroleum Oil Lubricant Infrastructure Hardening	NAVFAC Pacific	The contracting officer included adequate excerpts and reference to the ESS as part of the contract specifications. However the specifications also include further instruction related to the notifications required when MEC is encountered and the MEC quality assurance process. These additional specifications contradicted the ESS and JRM Instructions related to MEC clearance.	As of August 2019, the contracting officer had not issued any modifications related to MEC clearance.

Legend

ESS	Explosives Safety Submission
JRM	Joint Region Marianas
MEC	Munitions and Explosives of Concern
NAVFAC	Naval Facilities Engineering Command

Source: The DoD OIG.

Management Comments

Under Secretary of Defense for Acquisition and Sustainment

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE
3500 DEFENSE PENTAGON
WASHINGTON, DC 20301-3500

SUSTAINMENT

MEMORANDUM FOR DEPARTMENT OF DEFENSE OFFICE OF INSPECTOR GENERAL ACQUISITION, CONTRACTING, AND SUSTAINMENT

SUBJECT: Recommendations Review of Draft Report for DoD OIG Project D2019-D000AV-0047.000, "Audit of the Department of Defense's Processes to Identify and Clear Munitions and Explosives During Construction on Guam"

Thank you for the opportunity to review the three recommendations assigned to the Office of the Under Secretary of Defense for Acquisition and Sustainment identified under Project D2019-D000AV-0047.000. After careful review, we agree with each of the recommendations and will take the following steps to implement them.

OUSD(A&S) Response to Recommendation 1a: OUSD(A&S) will review the explosives safety standards with all parties having equity and determine if increased munitions and explosives of concern risk is acceptable in certain instances based on the adverse operational risks that munitions and explosives of concern clearance has created. We will document this review in writing within one year of publication of the report.

OUSD(A&S) Response to Recommendation 1b: Working with subject matter experts, OUSD(A&S) will publish updated guidance for estimating and presenting munitions and explosives of concern clearance costs on DD Form 1391, "FY____ Military Construction Project Data." The updated guidance will provide sufficient detail to enable personnel to assess the accuracy of the munitions and explosives of concern clearance budget. The updated guidance will allow for the refinement of clearance budgets based on historical comparisons of methods previously used. We expect to publish updated guidance within one year of the publication of the report.

OUSD(A&S) Response to Recommendation 1c: OUSD(A&S) will promulgate guidance to establish authorities and ensure that any revised explosives safety standards include language concerning when revisions become effective and how existing military construction contracts are affected by changes in standards. We expect to publish updated guidance within one year of the publication of the report.

If you have any questions, please feel free to contact my point of contact, [redacted]

Sincerely,

SANDS.ALLISON.RR[redacted] Digitally signed by SANDS.ALLISON.RR[redacted] Date: 2020.04.27 12:19:37 -04'00'

Allison R. Sands
Deputy Assistant Secretary of Defense
for Infrastructure

Chief of Naval Operations

DEPARTMENT OF THE NAVY
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
2000 NAVY PENTAGON
WASHINGTON DC 20350-2000

7502
SerN41/20U130448
30 Apr 20

From: Director, Logistics – Supply Chain Operations Division (OPNAV N41)
To: Inspector General, Department of Defense

Subj: OPNAV N41 COMMENTS ON DEPARTMENT OF DEFENSE INSPECTOR GENERAL AUDIT OF THE DEPARTMENT OF DEFENSE'S PROCESS TO IDENTIFY AND CLEAR MUNITIONS AND EXPLOSIVES DURING CONSTRUCTION ON GUAM (PROJECT NO. D2019-D000AV-0047.000)

Ref: (a) Department of Defense Inspector General Memorandum of 24 Mar 20
(b) Department of Defense Inspector General Audit of the Department of Defense's Process to Identify and Clear Munitions and Explosives on Guam Draft Report (Project No. D2019-D000AV-0047.000)
(c) OPNAVINST 8020.14A
(d) NAVSEA OP 5, Volume 1, Seventh Revision

1. In response to reference (a), the Office of the Chief of Naval Operations (OPNAV) Director, Logistics – Supply Chain Operations Division (N41) concurs with recommendation two of reference (b).

2. Recommendation two states "we recommend that the Chief of Naval Operations determine if a more efficient process exists to approve deviation requests from installation commanders in a timely manner to reduce further schedule delays and associated cost increases for military construction projects. If a more efficient process exists, the Chief should implement that process throughout the Navy."

a. Reference (b) does not establish that there is an inefficiency in the deviation process or that there were any delays as a result of the designed process. Typically, delays are encountered when incorrect or incomplete products are produced by the activity requesting a deviation. References (c) and (d) provide guidance to properly develop and process deviations. Complete and accurate deviation packages are processed in a timely manner which is normally within one week of the package being received by OPNAV N411.

b. The Navy deviation process documented in references (c) and (d) is a proven method for the Navy to conduct its mission in a safe manner, providing a balance to mitigate risk between explosives safety and operational requirements. The Navy deviation process is specifically designed to support an operational necessity and it is not intended to assume greater risk for the sake of convenience or to meet cost and schedule requirements.

c. Although the established deviation process appears to be performed in a timely manner and provides flexibility while maintaining appropriate explosives safety considerations, when all of the recommendations in reference (b) have been implemented and a steady-state is achieved,

Chief of Naval Operations (cont'd)

Subj: OPNAV N41 COMMENTS ON DEPARTMENT OF DEFENSE INSPECTOR GENERAL AUDIT OF THE DEPARTMENT OF DEFENSE'S PROCESS TO IDENTIFY AND CLEAR MUNITIONS AND EXPLOSIVES DURING CONSTRUCTION ON GUAM (PROJECT NO. D2019-D000AV-0047.000)

Navy will reassess whether there are efficiencies to be gained in the explosives safety deviation process that would enable better support to activities on Guam and further consider whether those efficiencies can be adopted Navy-wide.

3. My point of contact for this is [redacted]

T. J. MOREAU

2

Naval Facilities Engineering Command

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
1322 PATTERSON AVENUE, SE SUITE 1000
WASHINGTON NAVY YARD DC 20374-5065

7540
Ser 09IG/023
24 April 2020

From: Commander, Naval Facilities Engineering Command
To: Department of Defense, Office of the Inspector General, Program Director for Audit Acquisition, Contracting, and Sustainment

Subj: MANAGEMENT RESPONSE FOR AUDIT OF THE DEPARTMENT OF DEFENSE'S PROCESSES TO IDENTIFY AND CLEAR MUNITIONS AND EXPLOSIVES DURING CONSTRUCTION ON GUAM, PROJECT NO. D2019-D000AV-0047.000

Ref: (a) SECNAVINST 5200.34E

Encl: (1) Management Response
(2) Munitions and Explosives of Concern Management on Guam Training Slides
(3) NOSSAINST 8020.15D, Explosives Safety Review, Oversight, and Verification of Munitions Responses
(4) Business Management System S-17.4.15 Contractor Performance Evaluations

1. Per reference (a), enclosures (1) through (4) are submitted. NAVFAC is requesting closure for recommendations 4b, 4d, 6a, and 6b.

2. My point of contact is [redacted], Audit Liaison Program Manager. [redacted] can be reached at [redacted] or by email at [redacted].

FAUNCE.JASON.B ANCROFT.[redacted]
Digitally signed by FAUNCE.JASON.BANCROFT[redacted]
Date: 2020.04.24 11:18:37 -04'00'

JASON B. FAUNCE
By direction

Copy to:
NAVFAC Pacific
NAVFAC Marianas

Naval Facilities Engineering Command (cont'd)

NAVAL FACILITIES ENGINEERING COMMAND RESPONSE TO DOD OIG DRAFT AUDIT D2019-D000AV-0047.000, "AUDIT OF THE DEPARTMENT OF DEFENSE'S PROCESSES TO IDENTIFY AND CLEAR MUNITIONS AND EXPLOSIVES DURING CONSTRUCTION ON GUAM" DATED: 24 MARCH 2020

RECOMMENDATION 3a: DoD OIG recommends that the Commander, Naval Facilities Engineering Command perform a review to determine the quality assurance staffing requirements for munitions and explosives of concern at Naval Facilities Engineering Command Marianas and identify potential solutions to address vacant positions.

CURRENT STATUS: Concur. NAVFAC has completed a staffing review and developed a fully capable quality assurance (QA) staff to address munitions and explosives of concern (MEC). The staff consists of a MEC Program Manager at the Naval Facilities Engineering Command Marianas (NAVFAC Marianas) core and MEC QA personnel embedded within each construction office. Additionally, NAVFAC Marianas is in the process of hiring a MEC QA employee to embed within the pre-award (planning and design) team, also at the core.

ESTIMATED COMPLETION DATE: 30 September 2020

RECOMMENDATION 3b: DoD OIG recommends that the Commander, Naval Facilities Engineering Command conduct a study to determine the amount of equipment necessary for quality assurance personnel to perform adequate oversight over munitions and explosives of concern clearance activities and identify a solution to obtain the necessary equipment the study deems necessary to reduce contract delays related to oversight.

CURRENT STATUS: Concur. NAVFAC Marianas has developed a list of equipment necessary for employees to perform MEC QA, assembled the kits for use by MEC QA personnel, and identified equipment shortfalls for new hires. NAVFAC Marianas is in the process of procuring the additional equipment.

ESTIMATED COMPLETION DATE: 31 December 2020

RECOMMENDATION 3c: DoD OIG recommends that the Commander, Naval Facilities Engineering Command conduct a study to examine potential alternative funding sources for performing munitions and explosives of concern clearance and related quality assurance to determine whether a more accurate and equitable method is available to meet the mission as it relates to military construction on Guam.

CURRENT STATUS: Concur: NAVFAC HQ will task NAVFAC Pacific to conduct a study to examine potential alternative funding sources for performing munitions and explosives of concern clearance and related quality assurance to determine whether a more accurate and equitable method is available to meet the mission as it relates to military construction on Guam.

ESTIMATED COMPLETION DATE: 31 October 2020

Enclosure (1)

Naval Facilities Engineering Command (cont'd)

RECOMMENDATION 4a: DoD OIG recommends that the Commander, Naval Facilities Engineering Command Pacific issue guidance and provide training to ensure that personnel involved in military construction projects on Guam are familiar with explosives safety standards, munitions and explosives of concern issues affecting ongoing and future military construction projects, and the roles and responsibilities of each office involved in the munitions and explosives of concern process.

CURRENT STATUS: Concur. NAVFAC MAR conducted the first, Guam-specific, Munitions and Explosives of Concern (MEC) 101 basic training class in two sessions from 8-11 January 2019. The content of the course material is provided in enclosure (2). NAVFAC Pacific carried out MEC training for its personnel from 15-16 January 2019. Attendees included project managers, planners, designers, construction managers, engineering technicians, and MEC Quality Assurance (QA) specialists. Training was locally monitored to ensure completion and will be monitored through TWMS with the implementation of an OPSNOTE to formalize the training requirement NLT 30 June 2020. Training topics included MEC explosive safety basics (types, functions and hazards), roles and responsibilities, detection and classifying technology, project delivery and oversight best practices, and polices and guidance. The MEC 101 training is intended to be conducted annually pending funds availability. In the event funds are not available, the senior MEC personnel within NAVFAC MAR and Officer-In-Charge of Construction Marine Corps Marianas (OICC MCM) will increase engagement and provide a higher level of mentorship, training and community management for all QA specialists as well as the project delivery teams across the respective areas of responsibility to ensure consistency in application of MEC policies and procedures.

ESTIMATED COMPLETION DATE: 30 June 2020

RECOMMENDATION 4b: DoD OIG recommends that the Commander, Naval Facilities Engineering Command Pacific issue guidance to contracting personnel on taking the necessary steps to ensure that contract requirements for all ongoing and future Guam military construction projects include a standardized after-action report format that meets the Government's need for analyzing munitions and explosives of concern encounters and that these after-action reports are provided as a contract deliverable.

CURRENT STATUS: Concur. NAVFAC Marianas developed a policy to reinforce the contractual requirement to submit properly formatted MEC After-Action Reports (AARs) and issued that policy to all contracting personnel in July 2018. This policy was later updated and incorporated as an enclosure in NOSSAINST 8020.15D, Explosives Safety Review, Oversight, and Verification of Munitions Responses. (See enclosure (3).) This policy includes Naval Ordnance Safety and Security Activity (NOSSA) guidance for preparing a munitions response site AAR. In conjunction, NAVFAC Marianas completed a major revision to the standardized MEC contract specification template (Section 01 57 19.01 20 Supplemental Temporary Environmental Controls) in December 2018 requiring construction contractors to submit AARs in accordance with NOSSAINST 8020.15D. MEC Quality Assurance Specialist receive and review AARs and provide them to Joint Region Marianas (JRM) for submission to NOSSA. Construction contracts will remain active until AARs and other closeout documents are received and determined to be in compliance with contract documents. OICC MCM promulgated an AAR template pulled from DOD/Navy instructions and established a tracker, which is being reviewed at recurring command MEC meetings to ensure contractors are submitting timely and quality AARs. NAVFAC considers this action complete.

Naval Facilities Engineering Command (cont'd)

DATE COMPLETED: 30 April 2019

RECOMMENDATION 4c: DoD OIG recommends that the Commander, Naval Facilities Engineering Command Pacific develop and implement standard operating procedures to ensure that contracting officials are assessing past performance of contractors related to munitions and explosives of concern clearance when awarding contracts and including adequate input and analysis from subject-matter experts, such as explosives safety experts as part of the contracting processes.

CURRENT STATUS: Concur. Contractor performance assessments (to include MEC munition response activities) are required to be performed by contract administration personnel at a frequency commensurate with the contract value. NAVFAC Business Management System S-17.4.15.1, S-17.4.15.2, and S-17.4.15.3 provide standard processes for contractor performance evaluations. (See enclosure (4).) Contractor past performance is a required technical evaluation factor in the source selection process and will be assessed. In addition, the duties and responsibilities of the NAVFAC MAR MEC Program Manager include serving as the MEC technical advisor to source selection boards where such expertise is required. NAVFAC MAR is updating OPSNOTE 2020-002 (enclosure (5)) to re-emphasize the requirement to perform contractor performance assessments specifically for MEC munitions response activities.

ESTIMATED COMPLETION DATE: 30 May 2020

RECOMMENDATION 4d: DoD OIG recommends that the Commander, Naval Facilities Engineering Command Pacific issue a memorandum to contracting officials to ensure all future military construction contracts include reporting requirements consistent with Joint Region Marianas instructions for the reporting of munitions and explosives of concern encounters.

CURRENT STATUS: Concur. NAVFAC MAR issued OPSNOTE 2020-002 in December 2019 that requires contracting officials to incorporate the provisions of the current programmatic JRM Explosive Safety Submission (ESS) as well as a standardized MEC specification, explicitly detailing the process of verbal reporting and written notification following MEC encounters during construction. The ESS and MEC specifications continue to be updated and refined by the project delivery teams with concurrence from Explosive Safety experts within NAVFAC MAR and JRM addressing lessons learned from past MEC munition response activities. Lessons Learned were incorporated into new/updated policies (e.g. OPSNOTEs and JRMINST), ESS amendments, and revised contract MEC specifications. OICC MCM verified during pre-award meetings that reporting requirements (i.e., MEC finds, AARs) are included in contract specifications. NAVFAC considers this action complete.

DATE COMPLETED: 31 December 2019

RECOMMENDATION 6a: DoD OIG recommends that the Commander, Naval Facilities Engineering Command Marianas issue a memorandum directing personnel to provide after-action reports to geographic information systems personnel to include in the mapping tool.

CURRENT STATUS: Concur. Refer to response to Recommendation 4b. AARs are provided to JRM J3 explosive safety and geographical information systems (GIS) personnel. JRM GIS personnel are responsible to incorporate AAR data into a Conceptual Site Model for Guam. NAVFAC considers this action complete.

3

Naval Facilities Engineering Command (cont'd)

DATE COMPLETED: 30 April 2019

RECOMMENDATION 6b: DoD OIG recommends that the Commander, Naval Facilities Engineering Command Marianas establish a process for evaluating contractor-requested alternative methods for munitions and explosives of concern clearance to determine the feasibility and safety implications of the request and whether it should be forwarded to the NOSSA and the Department of Defense Explosives Safety Board (DDESB) for consideration and approval.

CURRENT STATUS: Concur. Construction means and methods to include munitions response activities are the sole responsibility of the contractor. In the event an alternative method is proposed to the contract administration team outside the scope of the ESS, the MEC QA Specialist will perform a review and seek guidance, if the proposal has merit, from the JRM MEC Process Improvement Team (MPIT). The MPIT, established since 2017, is responsible for adjudicating these requests and submitting for further review and approval by NOSSA and eventually DDESB. NAVFAC considers this action complete.

DATE COMPLETED: 15 June 2017

RECOMMENDATION 6c: DoD OIG recommends that the Commander, Naval Facilities Engineering Command Marianas review the actions of personnel responsible for oversight of contractors to determine if their actions allowed contractors to delay reporting munitions and explosives of concern encounters instead of reporting them immediately, in accordance with Joint Region Marianas policy, and initiate action as appropriate.

CURRENT STATUS: Concur. NAVFAC MAR and OICC MCM will conduct a review of past practices of contractor oversight personnel to ascertain if reporting are in accordance with JRM policies and procedures. Appropriate actions to be considered include additional MEC-related training emphasizing the importance of prompt reporting, and thorough review of established NAVFAC MAR, OICC MCM and JRM policies and procedures. The current MEC specification (Section 01 57 19.01 20 Supplemental Temporary Environmental Controls) requires the contractor to notify the Contracting Officer and MEC QA Specialist via phone within (4) hours of discovery and by written notification within 24 hours. This specification template is currently under review to ensure alignment with the newly released JRM ESS Amendment 7.

ESTIMATED COMPLETION DATE: 30 June 2020

Joint Region Marianas

DEPARTMENT OF THE NAVY
JOINT REGION MARIANAS
PSC 455 BOX 211
FPO AP 96540-1000

7510
J00G/0190
22 Apr 20

From: Commander, Joint Region Marianas
Via: Commander, Navy Installation Command
To: Department of Defense, Office of Inspector General

Subj: DRAFT REPORT FOR DOD OIG PROJECT NO. D2019-D000AV-0047.000, "AUDIT OF THE DEPARTMENT OF DEFENSE'S PROCESSES TO IDENTIFY AND CLEAR MUNITIONS AND EXPLOSIVES DURING CONSTRUCTION ON GUAM"

Ref: (a) Draft report for DoD OIG Project D2019-D000AV-0047.000, "Audit of the Department of Defense's processes to identify and clear munitions and explosives during construction on Guam"

Encl: (1) Commander, Joint Region Marianas Responses to Recommendations 5a – f.

1. Commander, Joint Region Marianas (CJRM) has reviewed the discussion draft audit report. Enclosures are combined comments/feedback from Joint Region Marianas and Naval Facilities Marianas (NAVFACMAR).

2. My External Audit Liaison is [redacted] Joint Region Inspector General. He may be reached by phone at [redacted] or via email at [redacted]

J. V. MENONI

Copy to:
COS CJRM
J3 CJRM
CO NAVFACMAR
IG NAVFACMAR
CNIC IG

Joint Region Marianas (cont'd)

RECOMMENDATION 5a: DoD OIG recommends that the Joint Region Marianas Commander: Determine whether personnel were required to use their privately owned vehicles to perform the Government's munitions and explosives of concern quality assurance mission, retroactively reimburse any mileage that employees can confirm, and determine whether officials committed an augmentation of appropriated funds potentially in violation of the Antideficiency Act.

CURRENT STATUS: *Concur.*

- Concerning use of privately owned vehicles: During the Oct-17 through Jul-18 period, employees did volunteer to use privately owned vehicles; however, the Government did not, at any time, direct the use of those vehicles. A government mandate to use POVs did not, and does not, exist.
- Concerning reimburse mileage: JRM is not aware of any claims made to the government concerning reimbursement of mileage.
- Concerning the Antideficiency Act: Conditions of an ADA violation were not identified.
- Concerning use of government owned vehicles: The JRM Explosive Safety (ES) office secured the use of a 4-wheel drive Ford Escape (GOV). In the event a larger GOV is required, arrangements are made to utilize a 4-wheel drive pickup truck. The JRM ES office continues to secure the exclusive use of a 4-wheel drive pickup truck.

DATE COMPLETED/ESTIMATED COMPLETION DATE: *Completed*

Enclosure (1)

Joint Region Marianas (cont'd)

RECOMMENDATION 5b: DoD OIG recommends that the Joint Region Marianas Commander: Develop a plan to ensure tools based on historical and current data to assist in making decisions about the likelihood of encountering munitions and explosives of concern during military construction projects are adequately resourced.

CURRENT STATUS: ***Concur.***

- JRM has a plan for success; however, that plan is not being resourced by the Region's resource provider. To "ensure" requires resources on-hand within the JRM Explosive Safety office.
- Any successful plan to maintain database tools requires a GIS Specialist and MEC PM. The GIS Specialist has the skills necessary to interact with information systems. The MEC PM is necessary to verify information with field actors/agencies and validate information before, during, and after input. This arrangement was validated by multiple higher headquarters. Since/During FY19, both positions remain unfilled at JRM.
- For the GIS position, hiring agencies have not located a suitable candidate that has appropriate skills and an acceptable security background. As a result, the GIS position continues to be unfilled. The immediate remedy is beyond JRM control. Need CNIC functional support to remedy soonest.
- For the MEC PM position, hiring agencies cannot take action due to an ongoing misalignment of funding, force posture, personnel, plan, authority, and timing. All of which are beyond JRM control. Need CNIC functional support to remedy soonest. – A dedicated JRM MEC PM will provide the Commander Joint Region Marianas with reasoned, informed advice regarding explosive safety standards and acceptable levels of risk. In order to accomplish this role, the MEC PM must have direct access to the Commander.

DATE COMPLETED/ESTIMATED COMPLETION DATE: ***Completed***

Enclosure (1)

2

Joint Region Marianas (cont'd)

RECOMMENDATION 5c: DoD OIG recommends that the Joint Region Marianas Commander: Develop and implement corrective actions to address any open deficiencies identified in Naval Ordnance Safety and Security Activity technical assist visit reports.

CURRENT STATUS: ***Concur.***

- NOSSA Technical Assistance Visits do not require formal response per NOSSAINST 8020.15D, pages 15-16 para 2. Although there was no requirement, a formal response to TAV findings was provided to NOSSA letter 8020 Ser N49/482 dated 20 Apr 2017. CJRM response to findings CJRM letter 8020 Ser J00/0196 dated 27 Jun 2017 pertains. In reference to the formal NOSSA Audit in 2018, JRM RESO/NAVFACMAR MEC PM formally addressed 9-12 April 2018 NOSSA Audit deficiencies as required by NOSSAINST 8020.15D via Commander Joint Region Marianas letter 8020 Ser J3/252 dated 18 July 2108.

DATE COMPLETED/ESTIMATED COMPLETION DATE: ***Completed FY17, FY18***

Enclosure (1)

3

Joint Region Marianas (cont'd)

RECOMMENDATION 5d: DoD OIG recommends that the Joint Region Marianas Commander: Develop standard operating procedures to ensure that deviation requests are processed consistently, through the proper channels, and meet the justification criteria for submitting a deviation request.

CURRENT STATUS: ***Concur.***

- Prior to the arrival of JRM Explosive Safety Staff there were experienced personnel on staff in 2017/2018 experienced staff who knew the requirements associated with waiver submissions.
- Since 2017, JRM submitted waivers and exemptions for NOSSA/CNO approval when requirements met/exceeded the operational necessity threshold. Installation leadership is aware of this threshold, recognizes its fiduciary responsibilities related to costs, and its responsibility to submit waivers and exemptions.
- Operational necessity is assessed on a project-by-project basis. Factors driving the assessment include areas effected and their purposes. Areas that require 24/7 access are given weight during the assessments: hospital, commissary, housing areas, barracks, Navy Gateway Inns and Suites. NAVSEA OP 5 and Commander, Joint Region Marianas Instruction 8020.2 dated 12 April 2017 provide sufficient guidance for submission of explosive safety waivers and the related operational necessity threshold. NAVSEA OP-5 provides U.S. Navy activities with guidance for submission of waivers. CJRM Instruction 8020 dated 12 April 2017 provides further guidance for submission of explosive safety waivers.

DATE COMPLETED/ESTIMATED COMPLETION DATE: ***Completed FY17Q3***

Enclosure (1)

4

Joint Region Marianas (cont'd)

RECOMMENDATION 5e: DoD OIG recommends that the Joint Region Marianas Commander: Implement long-term construction schedule plans, work with contracting officials to ensure that contracts consider potential delays in the original award, and develop deviation requests for managing exclusion zones to minimize delays results from the impacts of munitions and explosives of concern clearance on construction projects in overlapping exclusion zones.

CURRENT STATUS: ***Concur.***

- Commander Joint Region Marianas Instruction 8000.15A dated 30 November 2018 established the Joint Region Marianas MEC Oversight Program and the MEC Process Improvement Team. The purpose of this instruction is "[t]o establish organization roles, responsibilities and processes of the JRM MEC Oversight Program." Regular and recurring discussion topics for the MPIT include recommendations on waivers and deviations; review of operational risk management mitigations; MEC-related issues requiring adjudication; and resolution of quality assurance (QA) challenges, contracting concerns, and risk decisions associated with MEC execution/operational requirements.

DATE COMPLETED/ESTIMATED COMPLETION DATE: ***Completed FY19Q1***

Enclosure (1)

5

Joint Region Marianas (cont'd)

RECOMMENDATION 5f: DoD OIG recommends that the Joint Region Marianas Commander: Issue policy to establish the roles, authorities, and duties of the personnel involved with the military construction and munitions and explosives of concern clearance processes to clarify procedures for communication and notification requirements during the completion of military construction project in accordance with munitions and explosives of concern clearance standards.

CURRENT STATUS: ***Concur.***

- The current Commander, Joint Region Marianas Notice 5214 dated 29 May 2019 established the Commander's Critical Information Requirements and Significant Event Reporting. The current reporting procedure is sufficient to communicate with, and notify, MEC oversight personnel.
- In the event of a discovery, a CCIR III-3, Mutual Aid (EOD Response) is sufficient to tip-off explosive safety personnel to execute an assessment. Per the ESS, if a potential MEC object is discovered by a contractor, then the contractor is to request a response. In turn, through the JRM Regional Operations Center (ROC), EOD is tasked with executing a response. At the same time, the ROC creates a CCIR III-3, Mutual Aid Response. The distribution list for this message notifies MEC oversight personnel of the discovery.

DATE COMPLETED/ESTIMATED COMPLETION DATE: ***Completed***

Enclosure (1)

6

Acronyms and Abbreviations

DDESB	Department of Defense Explosives Safety Board
DLA	Defense Logistics Agency
ESS	Explosives Safety Submission
GIS	Geographic Information Systems
JRM	Joint Region Marianas
MEC	Munitions and Explosives of Concern
MILCON	Military Construction
MPPEH	Material Potentially Presenting an Explosive Hazard
NAVFAC	Naval Facilities Engineering Command
NOSSA	Naval Ordnance Safety and Security Activity
OPNAV	Office of the Chief of Naval Operations
QA	Quality Assurance

Glossary

20-millimeter projectile. The smallest target of interest item cleared during MEC operations on Guam. This item is roughly the size of a roll of nickels and can only be detected below about 6 inches or less of soil.

60-millimeter projectile. This item is roughly the size of a can of soda and can be detected through about 18 inches or less of soil.

Anomaly. A surface or subsurface item identified during a scan using metal detecting equipment. These items can be MEC, but also include and are not limited to fragments of exploded munitions, nails, or other construction debris.

Construction Support. Assistance provided by Explosives Ordnance Disposal- or unexploded ordnance- qualified personnel during intrusive construction activities on real property known or suspected to contain MEC to ensure the safety of personnel or resources from any potential explosives hazards. The two categories of construction support are on-call and on-site.

Deviation Request. The term used to describe the group of various types of requests prepared by installation personnel to conduct work that does not conform to explosives safety standards. Depending on the type of request, Navy commanders provide deviation requests to higher commands for endorsement and then requests are submitted to the Secretary of the Navy; Fleet Commander; OPNAV Supply, Ordnance and Logistics Operations Division, N41; or other components for approval.

Discarded Military Munition. Military munitions abandoned without proper disposal or removed from storage in a military magazine or other storage area for the purpose of disposal.

Drumbeat. The term assigned to the re-occurring meetings (usually weekly) between NOSSA, the JRM, NAVFAC, and other parties to discuss MEC-related issues affecting operations on the JRM.

Exclusion Zones. The safety zone, or Explosives Safety Quantity-Distance, established around a work area processing or handling MEC or MPPEH.

Material Potentially Presenting an Explosive Hazard. Material that before determination of its explosives safety status, potentially contains explosives or munitions. These materials include items such as munitions containers, munitions debris, and range-related debris that may contain hazards. MPPEH could potentially contain a high enough concentration of explosives that the material presents an explosive hazard.

Munitions and Explosives of Concern. Unexploded ordnance, discarded military munitions, and munitions constituents present in high enough concentrations to pose an explosive hazard. Unexploded ordnance means military munitions that have been primed, fused, armed, or otherwise prepared for action; that have been fired, dropped, launched, projected, or placed in such a manner as to constitute a hazard to operations, installations, personnel, or material; and that remain unexploded, whether by malfunction, design, or any other cause.

Probability (as it pertains to encountering MEC). A determination of the area of concern after a search of available historical records and on-site investigation data.

> **Low** – Given the military or munitions-related activities that occurred at the site, the likelihood of encountering MEC or MPPEH is low. When a determination is made that the probability of encountering MEC or MPPEH is low, "on-call" construction support must be provided by explosives ordnance disposal or unexploded ordnance-qualified personnel.
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> **Moderate to High** – Given the military or munitions-related activities that occurred at the site, there is more than a low probability that MEC or MPPEH are present. When a determination is made that the probability of encountering MEC or MPPEH is moderate to highly probably, "on-site" construction support must be provided by explosives ordnance disposal or unexploded ordnance-qualified personnel.

Render Safe Procedure. The application of special disposal methods or tools to interrupt the function or otherwise defeat the firing train of unexploded ordnance from triggering an unacceptable detonation. These procedures can only be conducted by trained explosives ordnance personnel.

Subsurface Clearance. Unexploded ordnance teams accomplish subsurface clearance operations using five-person teams. Unexploded ordnance teams divide the areas into individual grids, and they subdivide the grids into individual search lanes to ensure complete coverage of each grid. Individual search lanes will be 4 feet wide and in a pattern that ensures 100-percent coverage. The unexploded ordnance technicians assign lanes to systematically search through using an analog detector. The unexploded ordnance technician will mark with a pin flag any subsurface metallic anomaly produced by the detector. To discover the identity of an anomaly, unexploded ordnance technicians will excavate each as it is encountered. The unexploded ordnance technicians will use hands tools, such as shovels, spades and trowels and pry bars or mechanical means, such as a backhoe, with necessary safety measures, to excavate the anomalous features. The anomalies will be investigated to the depth of the construction excavation requirements or bedrock is reached. Once the item is exposed for inspection,

the unexploded ordnance technicians will determine whether the item is MEC or other debris. If the item is MEC, a positive identification will be documented and disposition coordinated.

Surface Clearance. Unexploded ordnance technicians will sweep the area to be de-vegetated using detector-aided visual means. Vegetation will be cleared with avoidance by unexploded ordnance technicians within the construction footprint boundaries to a height between 3 and 6 inches above the ground surface using machetes, portable weed-whackers, and chain saws. Vegetation clearance will be limited to cutting of brush, vines, small trees and tree limbs that would directly impede the movement of the detection equipment and clearance personnel. Cut vegetation will be moved from the clearance footprint so as not to impede the surface clearance operations. Using 4-foot-wide individual search lanes the unexploded ordnance teams will systematically traverse each work grid with analog detectors to detect, locate, and mark all MEC items encountered, and recover any munitions debris that is free of explosives. The unexploded ordnance lead organizes the team and directs the movement of the team back and forth across the grid in a manner that ensures 100-percent coverage of each grid.

Unexploded Ordnance. Military munitions that have been primed, fused, armed, or otherwise prepared for action; that have been fired, dropped, launched, projected, or placed in such a manner as to constitute a hazard to operations, installations, personnel, or material; and that remain unexploded, whether by malfunction, design, or any other cause.

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