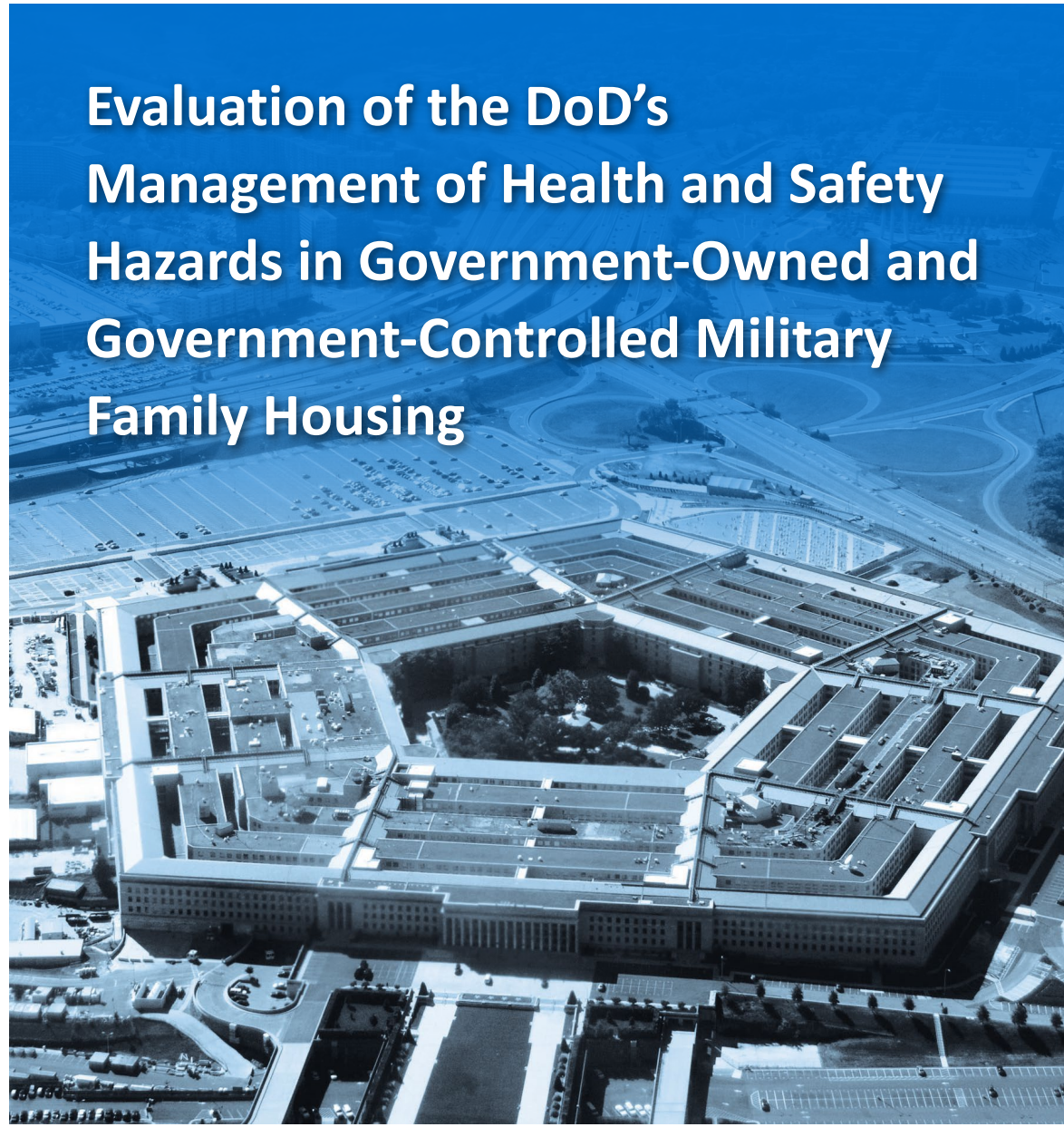




# INSPECTOR GENERAL

*U.S. Department of Defense*

APRIL 30, 2020



## Evaluation of the DoD's Management of Health and Safety Hazards in Government-Owned and Government-Controlled Military Family Housing

INTEGRITY ★ INDEPENDENCE ★ EXCELLENCE





# Results in Brief

## *Evaluation of the DoD's Management of Health and Safety Hazards in Government-Owned and Government-Controlled Military Family Housing*

**April 30, 2020**

The objective of this evaluation was to determine if the DoD effectively managed health and safety hazards in Government-owned and Government-controlled (GO-GC) military family housing.

For this report, management is defined as the policies and procedures used by DoD officials to identify, mitigate or minimize, monitor, disclose, and oversee health and safety hazards in GO-GC military family housing.

### **Background**

In September 2018, Congress directed the DoD Office of Inspector General (OIG) to evaluate whether Service members and their families were exposed to lead hazards while living in GO-GC military family housing. In November 2018, the DoD OIG announced an evaluation of the management of lead-based paint hazards in GO-GC military family housing. Subsequently, the Senate Armed Services and House Appropriations committees held several hearings that included discussion of other military housing problems, including construction defects, mold, pest infestations, and contamination from lead-based paint, which affected the health, safety, and well-being of Service members and their families in privatized family housing.

Although the statements from the Senate Armed Services and House Appropriations committee hearings focused on privatized military family housing, the concerns raised in the hearings prompted the DoD OIG to expand the scope of its GO-GC military family housing evaluation. We expanded the scope of the evaluation of the management of

### **Background (cont'd)**

lead-based paint hazards in GO-GC military family housing to also include the management of other health and safety hazards, such as asbestos-containing material, radon, fire and electrical safety, drinking water quality, window fall prevention, mold, carbon monoxide, and pest management.

Federal laws regulate the management of health and safety hazards. The DoD and Services have applied the requirements of Federal laws at military installations worldwide through various policies for addressing health and safety hazards. Additionally, the DoD housing policies require the DoD and Services to:

- provide Service members and families access to affordable, quality housing reflecting contemporary community living standards;
- provide military family housing that is well maintained, structurally sound, and does not pose a health, safety, or fire hazard;
- provide program management for military family housing; and
- provide managerial oversight to ensure that the housing inventory is maintained in good condition and housing is managed in an effective and cost-efficient manner.

Military family housing is divided into two broad categories: privatized and Government-owned and Government-controlled (GO-GC) military family housing. Privatized military family housing is either leased to or built by a private entity and then managed by the private entity for Government use. The DoD privatized almost 99 percent (more than 200,000 units) of military family housing in the continental United States (CONUS). However, the DoD did not privatize military family housing that is outside the continental United States (OCONUS). GO-GC military family housing is owned, managed, or maintained by the DoD. Approximately 95 percent (more than 36,000 units) of GO-GC military family housing is located outside the continental United States (OCONUS).



# Results in Brief

## *Evaluation of the DoD's Management of Health and Safety Hazards in Government-Owned and Government-Controlled Military Family Housing*

### **Background (cont'd)**

We evaluated the management of health and safety hazards in GO-GC military family housing at the following eight military installations.

- U.S. Army Garrison Humphreys, Republic of Korea
- U.S. Army Garrison Wiesbaden, Germany
- Naval Station Guantanamo Bay, Cuba
- Commander Fleet Activities Yokosuka, Japan
- Marine Corps Air Station Iwakuni, Japan
- Kadena Air Base, Japan
- Spangdahlem Air Base, Germany
- Wright-Patterson Air Force Base, Dayton, Ohio

These eight military installations host approximately 15,525 (41 percent) GO-GC military family housing units worldwide. At these military installations we evaluated the management of nine potential health and safety hazards: lead-based paint, asbestos-containing material, radon, fire and electrical safety, drinking water quality, window fall prevention, mold, carbon monoxide, and pest management.

During our site visits to the eight military installations, we:

- reviewed records, including health and safety hazard management plans, policies and procedures, and health and safety hazard assessment and testing results, to determine whether installation officials had identified potential hazards and were implementing the requirements for the management of health and safety hazards in GO-GC military family housing;
- interviewed officials to determine their knowledge of health and safety management requirements and their efforts to manage health and safety hazards in GO-GC military family housing; and

- visually assessed a selection of 187 GO-GC military family housing units to determine if health and safety hazards were effectively managed in GO-GC military family housing.

### **Finding**

At each of the eight military installations we visited, we found deficiencies in the management of health and safety hazards in GO-GC military family housing. Specifically, we found systemic deficiencies in the management of lead-based paint, asbestos-containing material, and radon.

- At seven of the eight military installations we visited, installation officials did not maintain accurate records of the location and condition of lead-based paint in GO-GC military family housing. Therefore, installation officials could not determine the extent that lead-based paint hazards were present in GO-GC military family housing. Additionally, at each of the eight military installations we visited, installation officials did not provide required lead-based paint disclosures to residents in GO-GC military family housing. Therefore, residents may have been exposed to lead-based paint or lead-based paint hazards in their GO-GC military family housing units without being aware of the hazard. For example, Wright-Patterson AFB installation officials did not monitor the condition of "presumed" lead-based paint, and we identified chipped and flaking paint at 11 GO-GC military family housing units that is presumed to be lead-based paint.



# Results in Brief

## *Evaluation of the DoD's Management of Health and Safety Hazards in Government-Owned and Government-Controlled Military Family Housing*

### **Finding (cont'd)**

- At five of the eight military installations we visited, installation officials did not maintain accurate records of the location and condition of asbestos-containing material in GO-GC military family housing. Therefore, installation officials could not determine the extent that asbestos-containing material hazards were present in GO-GC military family housing. Additionally, at six of the eight military installations we visited, installation officials did not notify residents of asbestos-containing material in GO-GC military family housing. Therefore, residents may have been exposed to asbestos-containing materials in their GO-GC military family housing units without being aware of the hazard. For example, Naval Station Guantanamo Bay installation officials did not maintain accurate records, perform any surveillance, or notify residents of the existence of asbestos-containing material in GO-GC military family housing.
- At three of the eight military installations we visited, installation officials did not establish a radon assessment and mitigation program for GO-GC military family housing. Additionally, at four of the eight military installations we visited, installation officials established a radon assessment and mitigation program but did not manage radon hazards in GO-GC military family housing. Therefore, installation officials could not determine the extent that radon hazards were present in GO-GC military family housing, and residents may have been exposed to radon hazards in GO-GC military family housing units without being aware of the hazard. For example, USAG Humphreys and USAG Wiesbaden installation officials did not establish a radon assessment and mitigation program to manage radon hazards in GO-GC military family housing.

Additionally, we found instances where installation officials did not manage other health and safety hazards, such as fire safety or drinking water quality. At two of the eight military installations we visited, installation officials did not incorporate fire safety requirements, such as window size requirements for fire escape, in GO-GC military family housing. At one of the eight military installations we visited, installation officials did not test for all drinking water quality hazards in GO-GC military family housing. Therefore, residents may have been exposed to fire safety and drinking water quality hazards in GO-GC military family housing units without being aware of the hazard.

The deficiencies in the management of health and safety hazards at the eight military installations we visited occurred because the DoD's housing policies do not define minimum standards for health and safety hazard management in GO-GC military family housing. The DoDM 4165.63 states that DoD housing must meet "minimum standards for...condition, health, and safety" in GO-GC military family housing. However, the DoDM 4165.63 does not define the "minimum standards for...condition, health, and safety." Additionally, the DoD housing policies do not require any type of assessment of the condition of housing units to address the management of health and safety hazards in GO-GC military family housing. Moreover, the DoD's Unified Facilities Criteria for family housing only applies to new construction or renovation projects and does not address the management of health and safety hazards in existing military family housing.

The deficiencies in the management of health and safety hazards at the eight military installations we visited also occurred because Service oversight inspections and audits were not designed to identify deficiencies in the management of health and safety hazards. The DoDM 4165.63 states that the Services



# Results in Brief

## *Evaluation of the DoD's Management of Health and Safety Hazards in Government-Owned and Government-Controlled Military Family Housing*

### **Finding (cont'd)**

must “provide managerial oversight to ensure that the housing inventory is maintained in good condition and housing management is operated in an effective and cost-efficient manner.” The Services are required by their policies to perform oversight over their programs, including military family housing; however, the oversight policies, procedures, and checklists for inspections and audits of their programs are not designed to address all requirements related to the management of health and safety hazards in GO-GC military family housing.

We believe the deficiencies we identified at the eight military installations we visited indicate that the potential exists for similar deficiencies in the management of health and safety hazards in GO-GC military family housing worldwide. If the DoD and the Services do not improve policies and procedures to identify, mitigate or minimize, monitor, disclose, and oversee health and safety hazards in GO-GC military family housing, the DoD and the Services will continue to risk the health and safety of Service members and their families.

### **Recommendations**

We recommend that the Under Secretary of Defense for Acquisition and Sustainment (USD[A&S]) and the Under Secretary of Defense for Personnel and Readiness (USD[P&R]) collaboratively establish or revise appropriate DoD policy(s) to address health and safety hazards—including lead-based paint, asbestos-containing material, radon, fire and electrical safety, drinking water quality, window fall prevention, mold, carbon monoxide, and pest management—in military family housing to manage health, safety, and environmental risks to acceptable levels for military family housing residents.

Additionally, we recommend that the Services revise Army Regulation 420-1, Chief of Naval Operations Instruction 5009.1, Marine Corps Order 11000.22, Air Force Instruction 32-6001, and all other housing-related policies to align with recommended DoD policy revisions. Furthermore, we recommend that the Services develop oversight policies and procedures to assess the management of health and safety hazards in GO-GC military family housing. Finally, we recommend that the Services direct installation officials to correct the specific lead-based paint, asbestos-containing material, radon, fire safety, and drinking water quality health and safety hazard management deficiencies discussed in this report.

### **Management Comments and Our Response**

The Acting Assistant Secretary of Defense for Sustainment, responding on behalf of the USD(A&S), and the Official Performing the Duties of the Under Secretary of Defense for Personnel and Readiness, partially agreed with the recommendation to establish or revise appropriate DoD policy(s) to address health and safety hazards in military family housing. Comments from the Acting Assistant Secretary of Defense for Sustainment and the Official Performing the Duties of the Under Secretary of Defense for Personnel and Readiness, partially addressed the recommendation, but did not provide any details on what specific action(s) would be taken or when the action(s) would be taken; therefore, the recommendation is unresolved. We request that both the USD(A&S) and the USD(P&R) describe specific actions that they will take to determine (1) which policies will be issued or updated, (2) who will be responsible for updating the policies, (3) what will be updated in the policies, and (4) the timeline for when the policies will be released.



# Results in Brief

## *Evaluation of the DoD's Management of Health and Safety Hazards in Government-Owned and Government-Controlled Military Family Housing*

### **Comments (cont'd)**

The Deputy Assistant Secretary of the Army for Installations, Housing and Partnerships, responding for the Assistant Secretary of the Army for Installations, Energy and Environment, agreed with the recommendation to update Service policies, develop oversight policies and procedures, and direct corrective action for the health and safety hazard deficiencies identified in this report. Comments from the Deputy Assistant Secretary addressed the recommendation; therefore, the recommendation is resolved but will remain open. We will close the recommendation once the DoD updates policies for health and safety hazard management and we verify that the Army took actions to fully address the recommendation.

The Acting Assistant Secretary of the Navy for Energy, Installations and Environment agreed with the recommendation to update Service policies, develop oversight policies and procedures, and direct corrective action for the health and safety hazard deficiencies identified in this report. Comments from the Acting Assistant Secretary addressed the recommendation; therefore, the recommendation is resolved but will remain open. We will close the recommendation once the DoD updates policies for health and safety hazard management and we verify that the Navy and Marine Corps took actions to fully address the recommendation.

The Principal Deputy Assistant Secretary of the Air Force for Installations, Environment and Energy, responding for the Assistant Secretary of the Air Force Environment and Energy, agreed with the recommendation to update Service policies and develop oversight policies and procedures, but only partially agreed with the recommendation to direct corrective action for the health and safety hazard deficiencies identified in this report. Comments from the Principal Deputy Assistant Secretary addressed the recommendation by agreeing to conduct corrective action and providing a different office to coordinate the corrective actions, but did not provide any details on what specific action(s) would be taken or when the action(s) would be taken; therefore, the recommendation is resolved but will remain open. We will close the recommendation once the DoD updates policies for health and safety hazard management and we verify that the Air Force took actions to fully address the recommendation.

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

## Recommendations Table

Management	Recommendations Unresolved	Recommendations Resolved	Recommendations Closed
DoD – Under Secretary of Defense for Acquisition and Sustainment; Under Secretary of Defense for Personnel and Readiness	1	None	None
U.S. Army - Office of the Assistant Secretary of the Army for Installations, Energy and Environment	None	2.a, 2.b, 2.c	None
U.S. Navy and U.S. Marine Corps - Office of the Assistant Secretary of the Navy for Energy, Installations and Environment	None	3.a, 3.b, 3.c	None
U.S. Air Force – Office of the Assistant Secretary of the Air Force, Installations, Environment and Energy	None	4.a, 4.b, 4.c	None

Please provide Management Comments by May 30, 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**

April 30, 2020

**MEMORANDUM FOR DISTRIBUTION**

**SUBJECT: Evaluation of the DoD's Management of Health and Safety Hazards in  
Government-Owned and Government-Controlled Military Family Housing  
(Report No. D2020-082)**

This final report provides the results of the DoD Office of Inspector General's evaluation. 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. All comments received are included in the report.

This report contains one recommendation that is considered unresolved because both the Under Secretary of Defense for Acquisition and Sustainment and the Under Secretary of Defense for Personnel and Readiness did not fully address the recommendation. Therefore, as discussed in the Recommendations, Management Comments, and Our Response section of this report, the recommendation remains unresolved. We will track this recommendation until an agreement is reached on the actions to be taken to address the recommendation, and adequate documentation has been submitted showing that the agreed-upon action has been completed.

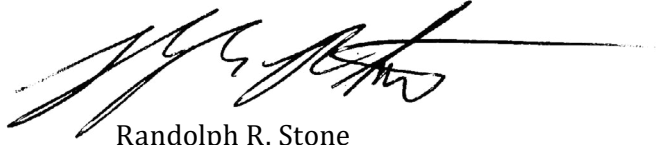
DoD Instruction 7650.03 requires that recommendations be resolved promptly. Therefore, please provide us within 30 days your response concerning specific actions in process or alternative corrective actions proposed to resolve the recommendation. Your response should be sent to [REDACTED]

For the remaining three recommendations, the Deputy Assistant Secretary of the Army for Installations, Housing and Partnerships; the Acting Assistant Secretary of the Navy for Energy, Installations and Environment; and Principal Deputy Assistant Secretary of the Air Force for Installations, Environment and Energy agreed to address all the recommendations presented in the report; therefore, the recommendations are considered resolved and open.

As described in the Recommendations, Management Comments, and Our Response section of this report, the recommendations may be closed when we receive adequate documentation showing that all agreed-upon actions to implement the recommendations have been completed. Therefore, please provide us within 90 days your response concerning specific actions in process or completed on the recommendations. Your response should be sent to [REDACTED]

If you have any questions, please contact [REDACTED]

We appreciate the cooperation and assistance received during the evaluation.

A handwritten signature in black ink, appearing to read 'R. Stone', with a long horizontal flourish extending to the right.

Randolph R. Stone  
Assistant Inspector General for Evaluations  
Space, Intelligence, Engineering, and Oversight

***Distribution:***

UNDER SECRETARY OF DEFENSE FOR ACQUISITION AND SUSTAINMENT  
UNDER SECRETARY OF DEFENSE FOR PERSONNEL AND READINESS  
HEADQUARTERS UNITED STATES MARINE CORPS  
AUDITOR GENERAL, DEPARTMENT OF THE ARMY  
AUDITOR GENERAL, DEPARTMENT OF THE AIR FORCE  
AUDITOR GENERAL, DEPARTMENT OF THE NAVY  
INSPECTOR GENERAL, DEPARTMENT OF THE ARMY  
INSPECTOR GENERAL, DEPARTMENT OF THE AIR FORCE

# Contents

---

## Introduction

Objective .....	1
Background .....	1

## **Finding. Management of Health and Safety Hazards in Government-Owned and Government-Controlled Military Family Housing Needs Improvement**..... 12

Deficiencies Existed in the Management of Health and Safety Hazards in Government-Owned and Government-Controlled Military Family Housing .....	14
Management of Health and Safety Hazards in Military Family Housing Needs Improvement .....	40
Residents May Be Exposed to Preventable Health and Safety Hazards in GO-GC Military Family Housing .....	46
Recommendations, Management Comments, and Our Response .....	47

## Appendixes

Appendix A. Scope and Methodology .....	53
Appendix B. Prior Coverage .....	61
Appendix C. EPA Lead-Based Paint Disclosure Certification and Acknowledgement Example .....	64

## Management Comments

Under Secretary of Defense for Acquisition and Sustainment .....	65
Under Secretary of Defense for Personnel and Readiness .....	66
Assistant Secretary of the Army for Installations, Energy and Environment .....	67
Assistant Secretary of the Navy for Energy, Installations and Environment .....	68
Assistant Secretary of the Air Force for Installations, Environment and Energy .....	70

## Acronyms and Abbreviations .....

## Glossary .....

# Introduction

---

## Objective

The objective of this evaluation was to determine if the DoD effectively managed health and safety hazards in Government-owned and Government-controlled (GO-GC) military family housing. Specifically, we determined whether:

- the DoD and Services established policies and programs to manage health and safety hazards in GO-GC military family housing; and
- the military installation officials managed health and safety hazards in GO-GC military family housing.

For this report, management is defined as policies and procedures used by DoD and Service officials to identify, mitigate or minimize, monitor, disclose, and oversee health and safety hazards in GO-GC military family housing.

## Background

In September 2018, Congress directed the Government Accountability Office and the DoD Office of Inspector General (OIG) to evaluate whether Service members and their families were exposed to lead hazards while living in military family housing.<sup>1</sup> In November 2018, the DoD OIG announced an evaluation of lead-based paint in GO-GC military family housing.<sup>2</sup> Subsequently, the Senate Armed Services and House Appropriations committees held several hearings that included the discussion of construction defects, mold, pest infestations, and contamination from lead-based paint, which affected the health, safety, and well-being of Service members and their families in privatized family housing.<sup>3</sup>

Although the statements from the Senate Armed Services and House Appropriations committee hearings focused on privatized military family housing, the concerns raised in the hearings prompted the DoD Office of Inspector General to expand the scope of its GO-GC military family housing evaluation.<sup>4</sup> We expanded the scope of

---

<sup>1</sup> House Report 115-929, "Energy and Water Development and Related Agencies for the Fiscal Year Ending September 30, 2019, and For Other Purposes," September 10, 2018. House Report 115-952, "Department of Defense for the Fiscal Year Ending September 30, 2019, and For Other Purposes," September 13, 2018.

<sup>2</sup> Through discussion, the DoD OIG agreed to conduct an evaluation on GO-GC and GAO agreed to conduct an audit on privatized housing; DoD OIG Project No. D2019-D000PT-0052.000, "Announcement of the Evaluation of Lead Paint in Military Family Housing (Congressional Request)," November 16, 2018.

<sup>3</sup> House Appropriations Committee, Subcommittee on Military Construction, Veterans Affairs, and Related Agencies, hearing on "Quality of Life in the Military," February 7, 2019.  
Senate Armed Services Committee, Subcommittee on Personnel, hearing on "Military Personnel Policies and Military Family Readiness," February 27, 2019.  
Senate Armed Services Committee, "Hearing to Receive Testimony on Accountability to Provide Safe Military Housing and other Building Infrastructure to Service members and their Families," March 7, 2019.

<sup>4</sup> DoD OIG Project No. D2019-D000PT-0052.000, "Reannouncement of the Evaluation of Lead Paint in Military Family Housing (Congressional Request) as the Evaluation of Health and Safety Hazards in Government-Owned and Government-Controlled Military Family Housing," March 6, 2019.

the evaluation of the management of lead-based paint hazards in GO-GC military family housing to include the management of other health and safety hazards, such as asbestos-containing material, radon, fire and electrical safety, drinking water quality, window fall prevention, mold, carbon monoxide, and pest management.

### ***Description of Military Family Housing***

Military family housing is divided into two broad categories: privatized and GO-GC. Privatized military family housing is either leased to or built by a private entity and then managed by the private entity for Government use. GO-GC military family housing is owned, managed, or maintained by the DoD. In this report, we evaluated the management of health and safety hazards in GO-GC military family housing.<sup>5</sup>

Under the Military Housing Privatization Initiative legislation, established in 1996, the Military Departments privatized almost 99 percent (more than 200,000 units) of military family housing in the continental United States (CONUS).<sup>6</sup> However, the Military Housing Privatization Initiative did not include military family housing that is outside the continental United States (OCONUS).<sup>7</sup> Therefore, the majority of GO-GC military family housing is OCONUS. As of January 9, 2019, there were approximately 38,000 GO-GC military family housing units worldwide. Approximately 95 percent (more than 36,000 units) of GO-GC military family housing is located OCONUS. Table 1 provides a summary of the number of CONUS and OCONUS GO-GC military family housing units, by Service.

*Table 1. Government-Owned and Government-Controlled Military Family Housing*

Service	CONUS GO-GC Housing Units	OCONUS GO-GC Housing Units	Total GO-GC Housing Units
Army	1,202	9,357	10,559
Navy	27	8,921	8,948
Marines	80	1,788	1,868
Air Force	111	16,543	16,654
<b>Total</b>	<b>1,420</b>	<b>36,609</b>	<b>38,029</b>

Source: The DoD OIG; derived from the 2018 Real Property Asset Database annual report and Enterprise Military Housing (eMH) data pulled on January 9, 2019, and corroborated with data received from each Service.

<sup>5</sup> The Government Accountability Office is responsible to report on privatized housing. Government Accountability Office Project No. 103153, "Hazards in Privatized Military Housing," November 30, 2018.

<sup>6</sup> Public Law 104-106, "National Defense Authorization Act for Fiscal Year 1996," "Title XXVIII—General Provisions," "Subtitle A—Military Housing Privatization Initiative," February 10, 1996.

<sup>7</sup> This does not include privatized family housing in Alaska and Hawaii.

We selected the following eight military installations, which host approximately 15,525 (41 percent) GO-GC military family housing units worldwide, for our evaluation:

1. U.S. Army Garrison (USAG) Humphreys, Republic of Korea;
2. USAG Wiesbaden, Germany;
3. Naval Station (NAVSTA) Guantanamo Bay, Cuba;
4. Commander Fleet Activities (CFA) Yokosuka, Japan;
5. Marine Corps Air Station (MCAS) Iwakuni, Japan;
6. Kadena Air Base (AB), Japan;
7. Spangdahlem AB, Germany; and
8. Wright-Patterson Air Force Base (AFB), Dayton, Ohio.<sup>8</sup>

During our site visits to the eight military installations, we:

- reviewed records, health and safety hazard management plans, policies and procedures, and health and safety hazard assessment and testing results to determine whether installation officials identified potential hazards and were implementing the requirements for the management of health and safety hazards in GO-GC military family housing;
- interviewed installation officials from housing, operations and maintenance, engineering, environmental, fire, safety, and health departments to determine their knowledge of applicable health and safety management requirements and their efforts to manage health and safety hazards in GO-GC military family housing; and
- visually assessed a selection of 187 GO-GC military family housing units to determine if health and safety hazards were effectively managed in GO-GC military family housing.

See Appendix A, Scope and Methodology, for a detailed discussion of how we conducted our evaluation at the military installations. Additionally, see the Glossary for definitions of technical terms used and the health and safety hazards discussed in this report.

---

<sup>8</sup> The evaluation team also visited U.S. Army Dugway Proving Ground; however, in an effort to use the same scope and methodology to evaluate the military installations and because the scope at that location was limited to lead-based paint hazards, we did not include that installation in our evaluation.

## ***Health and Safety Hazards Evaluated in GO-GC Military Family Housing***

The Toxic Substances Control Act (TSCA) of 1976 assigns regulatory and program implementation responsibilities to Federal agencies, such as the U. S. Environmental Protection Agency (EPA) and the U.S. Department of Housing and Urban Development (HUD), to control substances determined to cause unreasonable risk to public health or the environment.<sup>9</sup> The TSCA currently covers the control of toxic substances such as lead, asbestos-containing materials, radon, and other highly toxic substances.

For our evaluation, we referred to the HUD's Healthy Homes Program for best practices and techniques to achieve a healthy home.<sup>10</sup> Based on our review of health and safety hazards described in the HUD's Healthy Homes Program Manual and observations from previous DoD OIG reports, we selected the following health and safety hazards to evaluate at the eight selected military installations.

- lead-based paint
- asbestos-containing material
- radon
- fire and electrical safety
- drinking water quality
- window fall prevention<sup>11</sup>
- mold
- carbon monoxide
- pest management

### ***DoD Housing Policies***

#### ***DoD Instruction 4165.63***

The Under Secretary of Defense for Acquisition and Sustainment (USD[A&S]) published DoD Instruction (DoDI) 4165.63 to provide policy guidance and procedures for the DoD Housing Management Program.<sup>12</sup> The DoDI 4165.63 assigns responsibility for program management and oversight of DoD housing

---

<sup>9</sup> "Toxic Substances Control Act," sections 2601-2692, title 15, United States Code, 2017.

<sup>10</sup> HUD is the Federal agency responsible for programs concerned with the Nation's housing needs. According to the HUD website, the Healthy Homes program, "addresses multiple childhood diseases and injuries in the home. The Initiative takes a comprehensive approach to these activities by focusing on housing-related hazards in a coordinated fashion, rather than addressing a single hazard at a time. The [Healthy Homes Initiative] builds upon HUD's successful Lead Hazard Control programs to expand its efforts to address a variety of environmental health and safety concerns including: mold, lead, allergens, asthma, carbon monoxide, home safety, pesticides, and radon." For more information, please see the glossary.

<sup>11</sup> On March 25, 2019, officials from the Office of Deputy Assistant Secretary of Defense told us that managing window fall hazards through window fall prevention was a current focus area in military family housing deserving of our attention.

<sup>12</sup> DoD Instruction 4165.63, "DoD Housing," July 21, 2008 (Incorporating Change 2, August 31, 2018).



to the Assistant Secretary of Defense for Sustainment “to ensure it is managed in the most economical manner[.]”<sup>13</sup> The DoDI 4165.63 states that “eligible personnel and their families [should] have access to affordable, quality housing... reflecting contemporary community living standards.” The DoDI 4165.63 also states that the Services are responsible for “program and financial management, accounting, and reporting” for their respective GO-GC military family housing units. Lastly, the DoDI 4165.63 states that the Services may delegate broad authority and responsibility to the installation commanders for providing housing facilities and services.

### ***DoD Manual 4165.63***

The USD(A&S) published DoDM 4165.63 to “implement policy, assign responsibilities, and provide procedures on all matters associated with military housing.”<sup>14</sup> The DoDM 4165.63 reiterates that the Assistant Secretary of Defense for Sustainment must provide guidance and general procedures related to military family housing. The DoDM 4165.63 also requires that GO-GC military family housing must “be well maintained, structurally sound...[and] shall not pose a health, safety, or fire hazard.” Additionally, the DoDM 4165.63 states that “for DoD family housing to be considered adequate overall, it must meet minimum standards for configuration, privacy, condition, health, and safety. Any housing unit requiring whole-house repair, improvement, or replacement, as identified by Military Service condition assessments, does not meet the minimum standards of adequacy.”

The DoDM 4165.63 also states that the Services must “provide managerial oversight of [their] housing programs to ensure that the inventory is maintained in good condition and the program is being operated in an effective and cost-efficient manner.” Furthermore, the DoDM 4165.63 reiterates that the Services may delegate broad authority, responsibility, and accountability to the installation commanders for providing housing facilities and services. Finally, the DoDM 4165.63 states that “at the time of assignment and upon termination...all housing occupants shall be informed and shall acknowledge in writing their responsibilities and liability.”

### ***Unified Facilities Criteria 4-711-01***

The Unified Facilities Criteria (UFC) are joint Service documents that provide requirements for planning, design, construction, sustainment, restoration, and modernization of facilities and infrastructure. The Office of the Assistant Secretary of Defense for Sustainment, U.S. Army Corps of Engineers, Naval Facilities Engineering Command, and Air Force Civil Engineer Center jointly

<sup>13</sup> The Under Secretary of Defense for Acquisition and Sustainment was formerly the Under Secretary of Defense for Acquisition, Technology, and Logistics.

<sup>14</sup> DoD Manual 4165.63, “DoD Housing Management,” October 28, 2010 (Incorporating Change 2, August 31, 2018).

published UFC 4-711-01 to “provide planning, design, construction, sustainment, restoration, and modernization criteria” specifically for military family housing.<sup>15</sup> The UFC 4-711-01 represents a joint Services effort to “bring uniformity to the planning, design and construction of military Family Housing.”

### ***Army Housing Policy***

The Army published Army Regulation (AR) 420-1 to address “the management of public works activities, housing, and other facilities operations and management, military construction program development and execution, master planning, utilities services and energy management, and fire and emergency services” and identifies other regulations for facilities management.<sup>16</sup> AR 420-1 states that the Office of the Assistant Secretary of the Army (Installations, Energy, and Environment) is responsible for providing overall policy and program direction for Army military family housing. Additionally, AR 420-1 states that the Deputy Chief of Staff, G-9, develops policy and procedures for the administration, operation, and management of the Army’s housing programs.<sup>17</sup>

AR 420-1 also states that the Installation Management Command handles the day-to-day operations of Army installations, including GO-GC military family housing. AR 420-1 additionally states that “operation and maintenance of housing is a responsibility shared by the garrison commander and the housing resident.” Garrison commanders are responsible for providing adequate housing facilities and services on their respective installations.

### ***Navy and Marine Corps Housing Policies***

The Navy published Chief of Naval Operations Instruction (OPNAVINST) 5009.1 and Commander, Navy Installations Command (CNIC) Instruction 11103.4A to assign responsibilities for the “operations, policy, overall coordination and execution of [Navy Housing Programs]...to the Commander, Navy Installations Command (CNIC).”<sup>18</sup> As the Navy Housing Program Manager, the CNIC is responsible for providing management, control, and performance oversight of housing programs. CNIC Instruction 11103.4A requires region commanders and installation commanders to provide management, control, and

---

<sup>15</sup> The Office of the Assistant Secretary of Defense for Sustainment was formerly the Office of the Assistant Secretary of Defense (Energy, Installations, and Environment). UFC 4-711-01, “Family Housing,” August 10, 2018.

<sup>16</sup> Army Regulation 420-1, “Army Facilities Management,” rapid action revision, August 24, 2012.

<sup>17</sup> The Deputy Chief of Staff, G-9, was formerly the Assistant Chief of Staff for Installation Management.

<sup>18</sup> Chief of Naval Operations Instruction 5009.1, “Responsibility for Navy Housing and Lodging Programs,” December 26, 2007.

performance of housing programs at their respective regions or installations.<sup>19</sup> CNIC Manual 11103.3 states that residents must be provided written guidance at the installation outlining their responsibilities.<sup>20</sup>

The Marine Corps published Marine Corps Order (MCO) 11000.22 to provide comprehensive policy on the management and administration of Marine Corps family housing to effectively manage and maintain housing inventory.<sup>21</sup> MCO 11000.22 assigns responsibility for all Marine Corps housing programs to the Commander, Marine Corps Installations Command. MCO 11000.22 designates installation commanders as the onsite managers of the family housing program and requires the installation commanders to maintain and use GO-GC military family housing units in compliance with current policies and instructions. MCO 11000.22 also states that residents in Marine Corps housing must be provided adequate instructions for the proper care and maintenance of property and equipment placed in that person's custody.

### *Air Force Housing Policies*

The Air Force published Air Force Policy Directive 32-60 and Air Force Instruction (AFI) 32-6001 to provide policy for establishing and operating Air Force housing programs.<sup>22</sup> AFI 32-6001 states that the Deputy Assistant Secretary of the Air Force, Installations, Environment and Logistics is responsible for establishing housing policy and performance oversight for managing Air Force family housing programs. The commanders of the Air Force Major Commands have the responsibility and authority to implement Air Force policy and execute family housing programs.<sup>23</sup> At each installation, the installation commander is ultimately responsible for family housing programs and has broad authority to plan, program, and determine the best use of installation resources. AFI 32-6001 also requires that residents be informed of their responsibility for routine maintenance, operation, grounds care, minor repair, and housekeeping.

<sup>19</sup> Commander, Navy Installations Command Instruction 11103.4A "Responsibility for Housing Programs in the Navy," January 31, 2014.

<sup>20</sup> Commander, Navy Installations Command Manual 11103.3, "Navy Owned and Leased Family Housing Eligibility, Assignment and Termination Criteria," January 23, 2019.

<sup>21</sup> Marine Corps Order 11000.22, "Marine Corps Bachelor and Family Housing Management," January 22, 2018.

<sup>22</sup> Air Force Policy Directive 32-60, "Housing," March 4, 2015. Air Force Instruction 32-6001, "Family Housing Management," August 21, 2006, certified current October 7, 2013 (Incorporating Change 5, September 3, 2015); corrective actions applied on May 31, 2016.

Deputy Assistant Secretary of the Air Force, Installations, Environment and Logistics is now Deputy Assistant Secretary of the Air Force, Installations, Environment and Energy.

<sup>23</sup> A Major Command is a major subdivision of the Air Force that is assigned a major part of the Air Force mission.

## ***DoD Environmental and DoD Safety and Occupational Health Policies***

### ***DoDD 4715.1E***

The USD(A&S) published DoDD 4715.1E to establish policy on Environmental, Safety, and Occupational Health (ESOH) to sustain and improve the DoD mission.<sup>24</sup> The DoDD 4715.1E states that the DoD must “comply with all applicable laws and DoD policies relating to ESOH requirements. For overseas installations, commanders shall implement this policy to the extent possible under stationing and international agreements.”

### ***DoDI 4715.05***

The USD(A&S) published DoDI 4715.05 to establish policy and assign responsibilities for managing environmental compliance to protect human health and safety outside the United States on installations under DoD control.<sup>25</sup> DoDI 4715.05 states that “all organizations [must] plan, program, and budget to manage the [ESOH] risks that their activities generate in accordance with [DoDD 4715.1E].” DoDI 4715.05 states that the DoD establishes, maintains, and complies with country-specific requirements, also referred to as Final Governing Standards (FGS), written to “reconcile the requirements of international agreements and applicable host-nation environmental standards” to protect human health and the environment for certain foreign countries. Additionally, DoDI 4715.05 states that the Services establish and conduct a regular assessment of environmental compliance at installations outside the United States. Finally, the DoDI 4715.05 requires the DoD to comply with environmental requirements established in FGSs for other countries.

### ***DoD 4715.05-G***

The USD(A&S) published DoD 4715.05-G, also referred to as the Overseas Environmental Baseline Guidance Document (OEBGD), to provide requirements and management practices for environmental compliance at DoD installations overseas.<sup>26</sup> These requirements are the basis for the development of a comprehensive set of country-specific requirements to protect human health

---

<sup>24</sup> DoD Directive 4715.1E, “Environment, Safety, and Occupational Health,” March 19, 2005 (Incorporating Change 1, August 31, 2018).

<sup>25</sup> DoD Instruction 4715.05 “Environmental Compliance at Installations Outside the United States,” November 1, 2013 (Incorporating Change 2, August 31, 2018).

<sup>26</sup> DoD 4715.05-G, “Overseas Environmental Baseline Guidance Document (OEBGD),” May 1, 2007.

and the environment for certain foreign countries required by DoDI 4715.05. The OEBCG delegates responsibility to a lead DoD component to determine country-specific FGS requirements in accordance with DoDI 4715.05.<sup>27</sup>

### ***DoDI 4715.06***

The USD(A&S) published DoDI 4715.06 to “establish policy, assign responsibilities, and provide procedures for achieving and maintaining environmental compliance in the United States.”<sup>28</sup> DoDI 4715.06 states that environmental programs in the DoD must achieve, maintain, and monitor compliance with all referenced applicable environmental requirements. The DoDI 4715.06 requires the DoD to implement the environmental management system “at appropriate facilities to achieve DoD environmental goals.” Additionally, DoDI 4715.06 states that all military and civilian DoD personnel must “receive necessary and appropriate education regarding applicable environmental requirements through training, career development, and awareness programs.” Finally, DoDI 4715.06 requires all DoD operations and military installations in the United States to comply with environmental laws, including the TSCA.

### ***DoDI 6055.01***

The USD(A&S) published DoDI 6055.01 to establish policy and assign responsibilities for administering a comprehensive DoD Safety and Occupational Health program in accordance with DoD 4715.1E.<sup>29</sup> DoDI 6055.01 states that it is DoD policy to “apply risk management strategies to eliminate occupational injury or illness...both on and off duty.” DoDI 6055.01 states that all military operations and activities must use safety and occupational health management systems, including facility management.

---

<sup>27</sup> United States Forces Korea Regulation 201-1, “Environmental Governing Standards,” June 18, 2012.

United States Forces Japan, “Japan Environmental Governing Standards,” April 2018.

United States Army Installation Management Command Europe Region, “Environmental Final Governing Standards: Germany,” July 2017.

Commander Navy Region Southeast, DoD Lead Environmental Component (LEC) For Cuba, “Environmental Final Governing Standards: Cuba,” October 2016.

<sup>28</sup> DoD Instruction 4715.06, “Environmental Compliance in the United States,” May 4, 2015 (Incorporating Change 1, August 31, 2018).

<sup>29</sup> DoD Instruction 6055.01, “DoD Safety and Occupational Health (SOH) Program,” October 14, 2014 (Incorporating Change 1, August 31, 2018).

## ***Service Oversight Policies***

### ***AR 1-201***

The Secretary of the Army published AR 1-201 to establish responsibilities and policies for planning and conducting inspections in Army organizations.<sup>30</sup> AR 1-201 provides policy for Army inspector general and command officials to integrate internal and external inspections into an overarching Army inspection program. The goal of the overarching Army inspection program is to identify, prevent, or eliminate problem areas within each Army organization. Two of the internal and external inspections described in the Army oversight policy are the Installation Status Report, which includes a checklist to assess the condition of GO-GC military family housing units, and the Environmental Performance Assessment System, which includes checklists to assess environmental program management affecting GO-GC military family housing. The Installation Status Report and the Environmental Performance Assessment System are discussed later in this report.<sup>31</sup>

### ***SECNAVINST 5040.3B***

The Secretary of the Navy published Secretary of the Navy Instruction (SECNAVINST) 5040.3B to establish the objectives, policies, and responsibilities for inspection of organizations and functions within the Navy.<sup>32</sup> Additionally, Navy policy, CNICINST 5040.3 applies SECNAVINST 5040.3B to coordinate various oversight programs to minimize duplication.<sup>33</sup> One of the Navy oversight programs is the Housing Program Review, tailored to assess housing programs at each Navy installation, which we will discuss later in this report.<sup>34</sup>

Marine Corps policy, MCO 5040.6J, applies the SECNAVINST 5040.3B to establish responsibilities and policies for planning and conducting inspections in Marine Corps functional areas to ensure compliance and foundational readiness and promote effectiveness, efficiency, and economy.<sup>35</sup> These inspections require

<sup>30</sup> Army Regulation 1-201, "Army Inspection Policy," February 25, 2015.

<sup>31</sup> Army Regulation 210-14, "Installation Status Report Program," June 11, 2019.

The Installation Status Report is a major installation information system used to assess key elements of installation readiness, including facility readiness, installation service performance compared to Army standards, and installation resource capacity and security at a specific point in time.

The Environmental Performance Assessment System consists of internal and external audits and evaluates overall environmental program performance.

<sup>32</sup> Secretary of the Navy Instruction 5040.3B, "Inspections within the Department of the Navy," October 31, 2019.

<sup>33</sup> Commander, Navy Installations Command Instruction 5040.3 "Commander, Navy Installations Command Inspection Program," December 3, 2007.

<sup>34</sup> Commander, Navy Installations Command Instruction 11103.17 "Navy Housing Program Review," April 6, 2015.

The Housing Program Review is a management tool for continual internal evaluation and serves to measure the health and effectiveness of the housing program and to identify and correct weaknesses.

<sup>35</sup> MCO 5040.6J, "Inspector General of the Marine Corps Inspection Program," 11 July 2019.

the use of functional area checklists, such as the family housing functional area checklist and the safety program functional area checklist, which we will discuss later in this report.

### ***AFI 90-201***

The Secretary of the Air Force published AFI 90-201 to establish the responsibilities and policies for planning and conducting inspections in Air Force organizations.<sup>36</sup> AFI 90-201 provides policy for the Air Force inspector general and command officials to integrate internal and external inspections to evaluate performance and effectiveness of Air Force organizations. These internal and external inspections include inspections such as the Commander's Inspection Program and the Unit Effectiveness Inspection.<sup>37</sup> AFI 90-201 also provides tools to conduct inspections, such as the Management Internal Control Toolset, which includes various checklists, including the family housing checklist, which we will discuss later in this report.<sup>38</sup>

---

<sup>36</sup> Air Force Instruction 90-201, "Air Force Inspection System," November 20, 2018.

<sup>37</sup> The Commander's Inspection Program is a commander-led unit self-assessment program to improve readiness, efficiency, discipline, effectiveness, compliance, and surety in Air Force Wings.

The Unit Effectiveness Inspection is an external continual evaluation of Wing performance conducted by Air Force inspectors general.

<sup>38</sup> The Management Internal Control Toolset is the Air Force program of record to communicate a program's health and is a two-way communication tool between policy authors and field-level personnel to assess compliance with guidance and communicate risk.

## Finding

### **Management of Health and Safety Hazards in Government-Owned and Government-Controlled Military Family Housing Needs Improvement**

At each of the eight military installations we visited, we found deficiencies in the management of health and safety hazards in GO-GC military family housing. Specifically, we found systemic deficiencies in the management of lead-based paint, asbestos-containing material, and radon.

- At seven of the eight military installations we visited, installation officials did not maintain accurate records of the location and condition of lead-based paint in GO-GC military family housing. Therefore, installation officials could not determine the extent that lead-based paint hazards were present in GO-GC military family housing. Additionally, at each of the eight military installations we visited, installation officials did not provide required lead-based paint disclosures to residents in GO-GC military family housing. Therefore, residents may have been exposed to lead-based paint or lead-based paint hazards in their GO-GC military family housing units without being aware of the hazard. For example, Wright-Patterson AFB installation officials did not monitor the condition of “presumed” lead-based paint, and we identified chipped and flaking paint at 11 GO-GC military family housing units that is “presumed” to be lead-based paint.
- At five of the eight military installations we visited, installation officials did not maintain accurate records of the location and condition of asbestos-containing material in GO-GC military family housing. Therefore, installation officials could not determine the extent that asbestos-containing material hazards were present in GO-GC military family housing. Additionally, at six of the eight military installations we visited, installation officials did not notify residents of asbestos-containing material in GO-GC military family housing. Therefore, residents may have been exposed to asbestos-containing materials in their GO-GC military family housing units without being aware of the hazard. For example, Naval Station Guantanamo Bay installation officials did not maintain accurate records, perform any surveillance, or notify residents of the existence of asbestos-containing material in GO-GC military family housing.



- At three of the eight military installations we visited, installation officials did not establish a radon assessment and mitigation program for GO-GC military family housing. Additionally, at four of the eight military installations we visited, installation officials established a radon assessment and mitigation program but did not manage radon hazards in GO-GC military family housing. Therefore, installation officials could not determine the extent that radon hazards were present in GO-GC military family housing, and residents may have been exposed to radon hazards in GO-GC military family housing units without being aware of the hazard. For example, USAG Humphreys and USAG Wiesbaden installation officials did not establish a radon assessment and mitigation program to manage radon hazards in GO-GC military family housing.

Additionally, we found instances where installation officials did not manage other health and safety hazards, such as fire safety or drinking water quality. At two of the eight military installations we visited, installation officials did not incorporate fire safety requirements, such as window size requirements for fire escape, in GO-GC military family housing. At one of the eight military installations we visited, installation officials did not test for all drinking water quality hazards in GO-GC military family housing. Therefore, residents may have been exposed to fire safety and drinking water quality hazards in GO-GC military family housing units without being aware of the hazard.

The deficiencies in the management of health and safety hazards at the eight military installations we visited occurred because the DoD's housing policies do not define minimum standards for health and safety hazard management in GO-GC military family housing. The DoDM 4165.63 states that DoD housing must meet "minimum standards for...condition, health, and safety" in GO-GC military family housing. However, the DoDM 4165.63 does not define the "minimum standards for...condition, health, and safety." Additionally, the DoD housing policies do not require any type of assessment of the condition of housing units to address the management of health and safety hazards in GO-GC military family housing. Moreover, the DoD's UFC for family housing only applies to new construction or renovation projects and does not address the management of health and safety hazards in existing military family housing.

The deficiencies in the management of health and safety hazards at the eight military installations we visited also occurred because Service oversight inspections and audits were not designed to identify deficiencies in the management of health and safety hazards. The DoDM 4165.63 states that the Services must "provide managerial oversight to ensure that the housing inventory

is maintained in good condition and housing management is operated in an effective and cost-efficient manner.” The Services are required by their policies to perform oversight over their programs, including military family housing; however, the oversight policies, procedures, and checklists for inspections and audits of their programs are not designed to address all requirements related to the management of health and safety hazards in GO-GC military family housing.

We believe the deficiencies we identified at the eight military installations we visited indicate that the potential exists for similar deficiencies in the management of health and safety hazards in GO-GC military family housing worldwide. If the DoD and the Services do not improve policies and procedures to identify, mitigate or minimize, monitor, disclose, and oversee health and safety hazards in GO-GC military family housing, the DoD and the Services will continue to risk the health and safety of Service members and their families.

## **Deficiencies Existed in the Management of Health and Safety Hazards in Government-Owned and Government-Controlled Military Family Housing**

At each of the eight military installations we visited, we found deficiencies in the management of health and safety hazards in GO-GC military family housing. Systemic deficiencies existed in the management of lead-based paint, asbestos-containing material, and radon. Specifically, installation officials did not maintain accurate records of the location and condition of lead-based paint in GO-GC military family housing, did not properly disclose the location of lead-based paint to residents, or both. Installation officials did not maintain accurate records of asbestos-containing material, did not consistently notify residents of asbestos-containing material in GO-GC military family housing, or both. Installation officials also did not manage radon hazards in GO-GC military family housing. In addition to the systemic management deficiencies, we found individual instances where installation officials did not manage other health and safety hazards, such as fire safety or drinking water quality hazards.

During our evaluation, we did not find deficiencies in the management of electrical, window fall prevention, mold, carbon monoxide, and pest health and safety hazards. Specifically, installation officials established and implemented policies and procedures to identify, mitigate or minimize, monitor, disclose, and oversee the aforementioned health and safety hazards. For example, although mold is a common resident complaint mentioned in the congressional testimonies, we found that installation officials educated residents on mold prevention techniques unique to their GO-GC military family housing units, and we found that installation

officials were responsive to resident requests and complaints. In another example, at each of the eight military installations we visited, we found that installation officials had installed and maintained functioning carbon monoxide detectors in all GO-GC military family housing units where combustible fuel sources were present. Lastly, at each of the eight military installations we visited, we found that installation officials were managing pest hazards, such as mice, and were responsive to resident requests and complaints.

Although we found that installation officials at each of the eight military installations we visited were managing some health and safety hazards, as discussed above, we found systemic deficiencies in the management of lead-based paint, asbestos-containing material, and radon in GO-GC military family housing. Additionally, we found individual instances where installation officials did not manage fire safety or drinking water quality hazards. The deficiencies in the management of health and safety hazards are discussed in the following sections of this report.

### ***Installation Officials Did Not Manage Lead-Based Paint Hazards***

At seven of the eight military installations we visited, installation officials did not maintain accurate records of the location and condition of lead-based paint in GO-GC military family housing. Therefore, installation officials could not determine the extent that lead-based paint hazards were present in GO-GC military family housing. Additionally, at each of the eight military installations we visited, installation officials did not provide required lead-based paint disclosures to residents in GO-GC military family housing. Therefore, residents may have been unaware of the presence of lead-based paint or lead-based paint hazards in their GO-GC military family housing units.

Lead is a naturally occurring element, which can be poisonous if inhaled or ingested. As defined by the TSCA, lead-based paint is paint or other surface coatings that contain lead in amounts that exceeds the acceptable amounts according to current regulations.<sup>39</sup> Lead-based paint is hazardous when inhaled or ingested after the paint deteriorates (peels, flakes, or turns into dust). Lead-based paint can also become hazardous when disturbed during renovation work. Typical interior and exterior housing locations where lead-based paint deteriorates are “friction surfaces,” such as door frames and windows which open and close, or weather exposed surfaces, such as porches and stoops. Lead

---

<sup>39</sup> As defined by Subchapter IV of the TSCA, the term “lead-based paint” means paint or other surface coatings that contain lead in excess of 1.0 milligrams per centimeter squared or 0.5 percent by weight or (a) in the case of paint or other surface coatings on target housing. See the glossary for more information.

is particularly dangerous to children because their growing bodies absorb more lead than adults and their brains and nervous systems are more sensitive to the damaging effects of lead. Lead poisoning may cause problems with learning, growth, and behavior that last a lifetime. Children are more likely to be exposed to lead from deteriorated lead-based paint because they often put their hands and other objects that can have lead dust on them into their mouths.

Homes built in the United States after 1978 were required to use paint that was not lead-based.<sup>40</sup> However, lead-based paint is regulated differently worldwide, and homes built in other countries after 1978 may contain lead-based paint. Therefore, the number of GO-GC military family housing units OCONUS with the potential to contain lead-based paint is not tied to the 1978 year of construction, and the number of GO-GC military family housing units with lead-based paint has not been accurately determined by the DoD, as discussed in the following sections.

### ***Lead-Based Paint Hazard Management Policies***

Subchapter IV of the TSCA, the Lead Exposure Reduction Act, assigns responsibility to the EPA and HUD for identifying lead-based paint hazard thresholds and providing overarching guidance for the management of lead-based paint hazards.<sup>41</sup> The EPA and HUD have requirements for the management of lead-based paint hazards in housing, which are (1) evaluating or presuming lead-based paint hazards, (2) controlling lead-based paint hazards, and (3) documenting disclosure of the presence of lead-based paint or lead-based paint hazards to residents.<sup>42</sup>

The DoD has implemented the TSCA lead-based paint requirements through its policies on military installations worldwide. DoDI 4715.06 requires that all DoD operations and military installations in the United States comply with environmental laws, including the TSCA. Additionally, DoDI 4715.05 requires that all DoD operations and military installations OCONUS comply with the OEBGD and FGSs.<sup>43</sup> The OEBGD and FGSs require that all DoD operations and military installations OCONUS comply with the requirements to evaluate, control, and disclose for lead-based paint hazard management.

---

<sup>40</sup> The Lead-Based Paint Poisoning Prevention Act of 1971 was implemented by 16 CFR 1303 in 1977, which banned lead based paint effective February 1978.

"Lead-Based Paint Poisoning Prevention Act," 42 U.S.C. §§ 4801-4846, 1971. 16 CFR § 1303.1(b) (1977).

<sup>41</sup> "Toxic Substances Control Act," 15 U.S.C. §§ 2681-2692, 2017.

<sup>42</sup> 24 CFR § 35 section 80-98, section 1300-1355 (2018).

40 CFR § 745 (2018). HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing, Second Edition, July 2012.

<sup>43</sup> DoD 4715.05-G. For an explanation of FGSs, see the Background section of this report.

The Services have implemented the TSCA lead-based paint requirements through their policies on military installations worldwide. The Army policy, AR 420-1 states that “HUD has developed guidelines for the evaluation and control of lead-based paint hazards, and these guidelines will be followed in assessing, managing, and abating lead hazards.” The Navy policy, OPNAVINST 5090.1D, states that “TSCA requires owners of target housing...to notify occupants regarding lead-based paint risks...[and] regulates renovation practices, maintenance practices, sampling practices, and abatement practices for lead-based paint in target housing. Navy commands shall comply with the requirements of [TSCA] and applicable state and local lead-based paint management requirements.”<sup>44</sup> The Marine Corps policy, MCO 11000.22, states that “[a]ll Government-owned, leased, and privatized housing constructed prior to 1978 shall be managed and maintained as required by HUD [and EPA] guidelines for [lead-based paint].” The Air Force policy, AFI 32-6001, requires installation officials to maintain GO-GC military family housing units according to an Air Force memo issued in 1993 by the Chief of Staff of the Air Force, which applies TSCA, EPA, and HUD requirements for the management of lead-based paint.<sup>45</sup>

### ***Installation Officials Did Not Maintain Accurate Records of the Location and Condition of Lead-Based Paint***

At seven of the eight military installations we visited, installation officials did not maintain accurate records of the location and condition of lead-based paint in GO-GC military family housing as required by Federal law and DoD policies. We reviewed installation lead-based paint hazard management plans and records and found that, at each of the eight military installations we visited, installation officials made a determination of where lead-based paint was present in GO-GC military family housing. However, we found deficiencies in the records of the location and condition of lead-based paint at USAG Wiesbaden, NAVSTA Guantanamo Bay, CFA Yokosuka, MCAS Iwakuni, Spangdahlem AB, Kadena AB, and Wright-Patterson AFB. Additionally, we visually assessed 187 GO-GC military family housing units at the eight military installations for peeling or flaking paint

<sup>44</sup> The TSCA defines “target housing” as any housing constructed prior to 1978, except housing for the elderly or persons with disabilities (unless any child who is less than 6 year of age resides or is expected to reside in such housing) or any zero-bedroom dwelling. Target housing has a high probability of the presence of lead-based paint that can endanger children.

<sup>45</sup> AFI 32-6001 requires installation officials to maintain family housing according to the USAF Family Housing Guide for Planning, Programming, Design, and Construction, August 2004. The USAF Family Housing Guide for Planning, Programming, Design, and Construction, August 2004, requires lead-based paint to be managed as required by the Air Force Policy and Guidance on Lead-Based Paint in Facilities, issued 24 May 1993.

Air Force Instruction 33-360, “Publications and Forms Management,” December 1, 2015, states that Air Force policy memorandums expire 1 year after their effective date. Therefore, the policy memorandum issued in 1993 by the Chief of Staff of the Air Force, which applies TSCA, EPA, and HUD requirements for the management of lead-based paint, is expired and is not publically available on the Air Force publication website.

on interior and exterior surfaces, especially around window sills and door frames. We found instances of visibly peeling or flaking paint in 20 GO-GC military family housing units at USAG Wiesbaden, Kadena AB, and Wright-Patterson AFB that may have contained lead-based paint.

As discussed above, the EPA and HUD have requirements for the management of lead-based paint hazards in housing, which includes evaluating or presuming lead-based paint hazards. The EPA and HUD require a determination of the presence, the location, and the condition of lead-based paint or lead-based paint hazards.<sup>46</sup> We found that installation officials at each of the eight military installations documented their initial determination of the presence, the location, and the condition of lead-based paint or lead-based paint hazards on their military installations in records, such as evaluation reports, management plans, memorandums, or maintenance contracts. For example, installation officials at Spangdahlem AB maintained records of a risk assessment and lead hazard screening from 1996, which concluded that lead-based paint was present, but not wide spread, and in good condition. In another example, installation officials at Wright-Patterson AFB maintained language in their maintenance contracts that all GO-GC military family housing units are presumed to contain lead-based paint. However, installation officials at seven of the eight military installations did not maintain accurate records of the location and condition of lead-based paint or lead-based paint hazards since their initial determinations, in order to control and document disclosure of the presence of lead-based paint or lead-based paint hazards to residents, as required by the EPA and HUD.

As discussed above, the EPA and HUD have requirements for the management of lead-based paint hazards in housing, including controls, such as ongoing lead-based paint maintenance and reevaluation activities. HUD defined the three methods to control lead-based paint hazards in homes as: (1) interim controls, (2) interim controls with some abatement, or (3) full abatement. Interim controls are designed to reduce the risk of exposure to lead-based paint hazards and include activities such as painting over the lead-based paint and specialized cleaning.<sup>47</sup> If an installation official applies interim controls, they must also conduct maintenance and reevaluation activities. Maintenance activities are defined as regular visual assessment and repair, when necessary, of deteriorated paint on interior and exterior surfaces. Maintenance activities should be conducted upon receipt of a

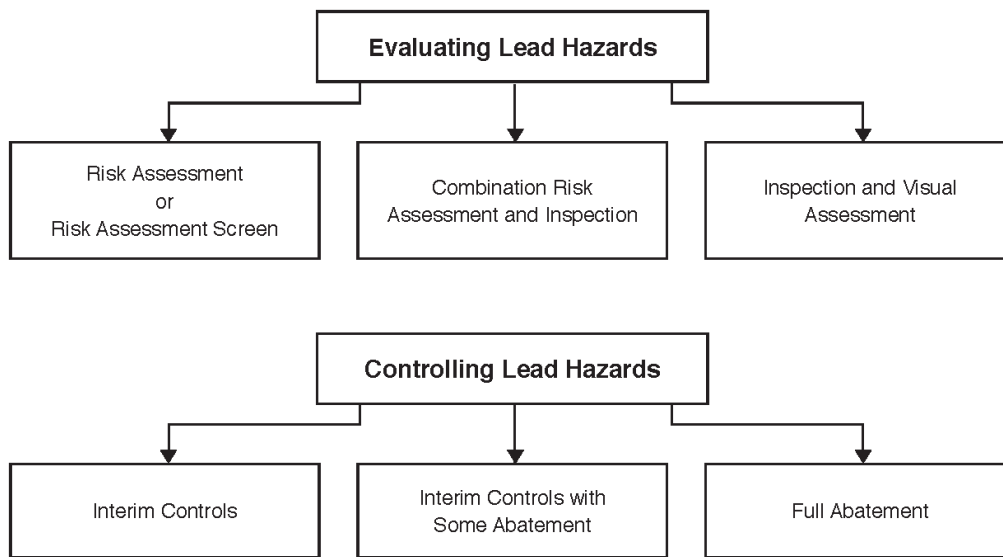
---

<sup>46</sup> Determination can either be through survey or presumption. "Presumption" is another alternative to evaluation. Property owners may presume that all painted surfaces are coated with lead-based paint and that all bare soil is hazardous, so long as they treat all surfaces to be disturbed as if they contain lead. Such a presumptive approach may be cost-effective in the case of pre-1960 housing in poor condition. Presumption is specifically included in the Lead Safe Housing Rule.

<sup>47</sup> 24 CFR § 35.110 (2018).

resident complaint, unit change of occupancy, when significant damage to the home occurs (such as a natural disaster), and at least once every year.<sup>48</sup> Reevaluation activities are defined as a visual assessment of painted surfaces, performed by a certified lead-based paint risk assessor, conducted periodically following lead-based paint hazard reduction where lead-based paint is still present.<sup>49</sup> Reevaluation must be conducted at 2-year intervals, and any lead-based paint hazards identified during the renovation must be addressed with interim controls. Figure 1 shows the process for the evaluation and control of lead-based paint, as described above.

*Figure 1. Lead Hazard Evaluation and Control*



Source: HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing, Second Edition, July 2012.

We found that installation officials at USAG Humphreys controlled lead-based paint hazards by performing interim controls, such as maintenance and reevaluation activities, or performing full abatement of lead-based paint in GO-GC military family housing. However, we found that installation officials at USAG Wiesbaden, NAVSTA Guantanamo Bay, CFA Yokosuka, MCAS Iwakuni, Spangdahlem AB, Kadena AB, and Wright-Patterson AFB did not control lead-based paint hazards or maintain records of performing interim controls, such as maintenance and reevaluation activities or performing full abatement. For example, installation officials at NAVSTA Guantanamo Bay contracted a private company in 2007 to perform a lead-based paint inspection and risk assessment. The contractor delivered a comprehensive report on the presence of lead-based paint on the military installation, including recommendations for installation officials to

<sup>48</sup> 24 CFR § 35.1355 (2018).

<sup>49</sup> 24 CFR § 35.1355 (2018).

establish a lead-based paint hazard management program, a lead determination for each type of housing, and options for interim controls or abatement for each type of lead-based paint hazard found. Additionally, the contractor recommended procedures for ongoing maintenance and reevaluation of lead-based paint. However, installation officials at NAVSTA Guantanamo Bay told us that they did not have anyone assigned to manage the lead-based paint hazard management program or perform the ongoing maintenance and reevaluation. In another example, installation officials at USAG Wiesbaden have a lead-based paint hazard management plan, which includes roles and responsibilities for housing officials and requires maintenance at change of occupancy and once per year. However, installation housing officials at USAG Wiesbaden told us that they do not perform any visual assessments to specifically evaluate the condition of lead-based paint.

Furthermore, installation officials at Wright-Patterson AFB told us that they presume all paint in GO-GC military family housing on the installation is lead-based paint. Specifically, installation officials have included requirements in their maintenance contract that all painted surfaces, both interior and exterior, are presumed to be lead-based paint. However, installation housing officials told us that they do not perform any visual assessments to specifically evaluate the condition of lead-based paint. Furthermore, installation officials told us that they did not have anyone assigned to manage the lead-based paint hazard management program and relied on the housing maintenance contractor to maintain their GO-GC military family housing units. During our visual assessment at Wright-Patterson AFB, we identified chipped and flaking paint, which is presumed to be lead-based paint, at each of the 11 GO-GC military family housing units we visited. Figure 2 shows an example of deteriorated paint that is presumed by Wright-Patterson officials to be lead-based paint.



Figure 2. Presumed Lead-Based Paint Flaking on Window at Wright-Patterson AFB

Source: DoD Office of Inspector General (OIG).



In sum, installation officials at the eight military installations we visited documented the determination of the presence of lead-based paint in GO-GC military family housing in their records. However, we determined that installation officials at seven of the eight military installations we visited did not maintain accurate records of the location and condition of lead-based paint, and did not perform maintenance and reevaluation activities required by the EPA and HUD. Therefore, installation officials could not determine the extent that lead-based paint hazards were present in GO-GC military family housing. Furthermore, without accurate records of the location and condition of lead-based paint, installation officials cannot provide required lead-based paint disclosures to residents in GO-GC military family housing units with known or suspected lead-based paint.

### ***Installations Officials Did Not Provide Required Lead-Based Paint Disclosures***

At each of the eight military installations we visited, installation officials did not provide lead-based paint disclosures to residents in GO-GC military family housing as required by Federal law and DoD policies. To determine if installation officials complied with the lead-based paint disclosure requirements, we reviewed installation lead-based paint hazard management plans, resident handbooks, and housing assignment documentation to see if the documentation contained the lead-based paint disclosure. The EPA and HUD define lead-based paint disclosure as distribution of the following to residents,

1. An EPA-approved education pamphlet, such as the “Protect Your Family from Lead in Your Home” educational pamphlet,
2. A lead-based paint certification and acknowledgement, as shown in Appendix C, that contains the following five parts:
  - a. lead warning statement,
  - b. presence of known or suspected lead-based paint or hazards,
  - c. list of records or reports of historical testing (if available),
  - d. the signature of the resident and an installation official, and
  - e. a copy of the signed notice given to the resident and maintained by installation officials,
3. A copy of available records or reports pertaining to the presence of lead-based paint or lead-based paint hazards known or suspected in the assigned housing unit and any associated common areas.<sup>50</sup>

<sup>50</sup> 24 CFR § 35.88 (2018).

40 CFR § 745.107 (2018).

HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing, Second Edition, July 2012. Example EPA Lessor’s Disclosure of Information on Lead-Based Paint and/or Lead-Based Paint Hazards: <https://www.epa.gov/lead/lessors-disclosure-information-lead-based-paint-and-or-lead-based-paint-hazards>

We found that installation officials at USAG Humphreys, NAVSTA Guantanamo Bay, CFA Yokosuka, and MCAS Iwakuni distributed an EPA-approved education pamphlet, such as the “Protect Your Family from Lead in Your Home” educational pamphlet; however, installation officials at USAG Wiesbaden, Spangdahlem AB, Kadena AB, and Wright-Patterson AFB did not. For example, installation officials at Spangdahlem AB did not distribute an EPA-approved education pamphlet, such as the “Protect Your Family from Lead in Your Home” educational pamphlet.

Installation officials at NAVSTA Guantanamo Bay, MCAS Iwakuni, and Wright-Patterson AFB distributed the lead-based paint certification and acknowledgement to residents, as required by the EPA and HUD. However, installation officials at USAG Humphreys, USAG Wiesbaden, CFA Yokosuka, Spangdahlem AB, and Kadena AB did not distribute the lead-based paint certification and acknowledgement to residents. For example, installation officials at Kadena AB distributed a housing assignment checklist that included a lead warning statement. However, the housing assignment checklist did not meet the requirements for the lead-based paint certification and acknowledgement. Specifically, the housing assignment checklist did not include each of the five parts required for a complete lead-based paint certification and acknowledgement. Although installation officials had detailed information available regarding lead-based paint, the housing assignment checklist provided generic information to residents. Installation officials showed us records and reports of historical lead-based paint testing; however, residents were not informed of these records on the housing assignment checklist or any other housing document we reviewed. In another example, installation environmental officials at USAG Wiesbaden wrote a comprehensive lead-based paint hazard management plan, which detailed how to distribute the lead-based paint certification and acknowledgement to residents and also provided a sample form. However, installation housing officials did not distribute a lead-based paint certification and acknowledgement to residents. We asked installation housing officials why they did not distribute a lead-based paint certification and acknowledgement to residents, but they could not provide us with a reason.

Lastly, installation officials at USAG Humphreys, USAG Wiesbaden, NAVSTA Guantanamo Bay, CFA Yokosuka, MCAS Iwakuni, Spangdahlem AB, and Kadena AB did not distribute a copy of available records or reports pertaining to the presence of lead-based paint or lead-based paint hazards known or suspected in the assigned GO-GC military family housing unit and any associated common areas.<sup>51</sup> For example, installation officials at CFA Yokosuka distributed a lead-based paint notice memorandum, which states that “a copy of lead-based paint assessment

---

<sup>51</sup> Installation officials at Wright-Patterson AFB are not required to complete this requirement because they have presumed all paint in GO-GC military family housing is lead-based paint and have not completed any survey or testing.

results will be made available to residents.” However, installation officials did not distribute the assessment results to residents; instead, installation officials told us that they verbally inform residents of known lead-based paint in the resident’s GO-GC military family housing unit.

In sum, installation officials at the eight military installations we visited did not disclose lead-based paint hazards as required by the EPA and HUD. Therefore, residents may have been exposed to lead-based paint or lead-based paint hazards in their GO-GC military family housing unit without knowledge of the presence of lead-based paint. Furthermore, without accurate disclosure of the location and condition of lead-based paint by the installation officials, residents cannot monitor potential hazards and inform installation officials when lead-based paint has deteriorated and is a hazard.

Table 2 provides a summary of whether installation officials maintained accurate records of the location and condition of lead-based paint or distributed a lead-based paint disclosure. A check mark indicates compliance with the management requirements discussed in this section, and an ‘x’ indicates deficiencies.

*Table 2. Lead-Based Paint Hazard Management Summary by Installation*

Installation	Evaluate: Determination by Evaluation or Presumption	Control: Ongoing Maintenance and Reevaluation or Abatement	Distribute Disclosure:		
			EPA-Approved Educational Pamphlet	Signed Certification	Copy of Records/ Reports Related to Housing Unit
USAG HUMPHREYS (ARMY)	✓	✓	✓	✗	✗
USAG WIESBADEN (ARMY)	✓	✗	✗	✗	✗
NAVSTA GUANTANAMO BAY, CUBA (NAVY)	✓	✗	✓	✓	✗
CFA YOKOSUKA (NAVY)	✓	✗	✓	✗	✗
MCAS IWAKUNI, JAPAN (MARINE CORPS)	✓	✗	✓	✓	✗
SPANGDAHLEM AB (AIR FORCE)	✓	✗	✗	✗	✗
KADENA AB (AIR FORCE)	✓	✗	✗	✗	✗
WRIGHT-PATTERSON AFB (AIR FORCE)	✓	✗	✗	✓	N/A

Note: A check mark indicates compliance with the management requirements discussed in this section, and an ‘x’ indicates deficiencies.

Source: The DoD OIG; derived from analysis of evidence collected from November 2018 through February 2020.

## ***Installation Officials Did Not Manage Asbestos-Containing Materials***

At five of the eight military installations we visited, installation officials did not maintain accurate records of the location and condition of asbestos-containing material in GO-GC military family housing. Therefore, installation officials could not determine the extent that asbestos-containing material hazards were present in GO-GC military family housing. Additionally, at six of the eight military installations we visited, installation officials did not consistently notify residents of asbestos-containing material in GO-GC military family housing. Therefore, residents may have been unaware of the presence of asbestos-containing materials in their GO-GC military family housing units.

Asbestos is a naturally occurring mineral fiber found in rock and soil. Asbestos-containing materials have asbestos mineral fibers included in them. As defined by the TSCA, the term “asbestos-containing material” means any material which contains asbestos in amounts that exceed the acceptable amount according to current regulations.<sup>52</sup> Asbestos-containing materials have been used in a variety of construction materials, such as wall and ceiling plasters, floor tile, insulation, and asphalt roofing. These materials generally do not pose health risks unless they are disturbed during building or home maintenance, repair, remodeling, and demolition work. Disturbed or deteriorated (friable) asbestos-containing materials can become airborne and pose a significant risk to human health if inhaled by someone not wearing protective respiratory equipment.<sup>53</sup> When inhaled, the asbestos fibers can contribute to various types of cancers, such as lung cancer and mesothelioma.

Homes built in the United States after 1989 were required to use construction materials that did not contain asbestos.<sup>54</sup> However, asbestos-containing materials are regulated differently worldwide, and homes built in other countries after 1989 may have asbestos-containing materials. Therefore, the number of GO-GC military family housing units OCONUS with the potential to have asbestos-containing

<sup>52</sup> As defined by Subchapter II of the TSCA, the term “asbestos-containing material” means any material which contains more than 1 percent asbestos by weight. For more information, see the glossary.

<sup>53</sup> The term “friable asbestos-containing material” means any asbestos-containing material applied on ceilings, walls, structural members, piping, duct work, or any other part of a building which, when dry, may be crumbled, pulverized, or reduced to powder by hand pressure. The term includes non-friable asbestos-containing material after such previously non-friable material becomes damaged to the extent that, when dry, it may be crumbled, pulverized, or reduced to powder by hand pressure.

<sup>54</sup> Some asbestos-containing materials were banned through the following:

“1989 Rule,” Federal Register 29,460, Vol. 54, No. 132 (1989) (codified in 40 CFR section 763).

“Clean Air Act,” 42 U.S.C. § 7401, 1970.

“Consumer Product Safety Act,” 15 U.S.C. § 2051, 1972.

materials is not tied to the 1989 year of construction, and the number of GO-GC military family housing units with asbestos-containing materials has not been accurately determined by the DoD, as discussed in the following sections.

### ***Asbestos-Containing Material Hazard Management Policies***

Subchapter II of the TSCA, the Asbestos Hazard Emergency Response Act, assigns responsibility to the EPA for providing overarching guidance for the management of asbestos-containing material hazards.<sup>55</sup> The TSCA and EPA have requirements for the management of asbestos-containing material hazards, which are (1) writing and implementing an asbestos management plan, (2) evaluating and controlling asbestos-containing materials, and (3) notifying residents of the presence of asbestos-containing materials.<sup>56</sup>

The DoD has implemented the TSCA and EPA asbestos-containing material requirements through its policies on military installations worldwide.<sup>57</sup> DoDI 4715.06 requires that all DoD operations and military installations in the United States comply with environmental laws, including the TSCA. Additionally, DoDI 4715.05 requires that all DoD operations and military installations OCONUS comply with the OEBGD and FGSS. The OEBGD and FGSS have requirements for the management of asbestos-containing material hazards, which are to (1) implement an asbestos management plan, (2) evaluate and control asbestos-containing materials, and (3) notify residents of the presence of asbestos-containing materials.

The Services have implemented the TSCA and EPA requirements through their policies for asbestos-containing material hazard management on military installations worldwide. The Army policy, AR 420-1 states that, “where asbestos is known or believed to exist, the site must be inspected and a determination made as to the containment/disposition of the material.” Additionally, AR 420-1 states that, “[installation officials] will manage any monitoring, abatement, removal, handling, and disposal of asbestos contaminated materials. The dates of identification, monitoring, and abatement or removal must be documented and retained in the housing files.”

<sup>55</sup> “Toxic Substances Control Act,” 15 U.S.C. §§ 2641-2656, 2017.

<sup>56</sup> Although the TSCA and EPA policies are primarily written for schools, it also covers Federal “public and commercial buildings,” which is defined as any building which is not a school building, except for any residential apartment building with fewer than 10 units. However, DoD and Service policies do not distinguish between the types of residential buildings; therefore, the policies apply to all housing. Additionally, the definition for “school building” also includes any facility used for the housing of students.

<sup>57</sup> “Toxic Substances Control Act,” 15 U.S.C. §§ 2641 – 2656, 2017.

“Guidance for Controlling Asbestos-Containing Materials in Buildings,” United States Environmental Protection Agency, 560/5-85-024, June 1985.

Title 40 Code of Federal Regulations section 763 (2011).

DoD 4715.05-G (OEBGD).

The Navy policy, OPNAVINST 5090.1D, states that installation officials at all CONUS installations “shall establish an asbestos management program to implement standards for the periodic inspection, sampling, control, evaluation, maintenance, and abatement of [asbestos-containing materials]. Installation commanding officers shall appoint an asbestos program manager (APM) who will be responsible for carrying out the asbestos management program ashore.” The Marine Corps policy, MCO 11000.22, states that asbestos must be managed and maintained as required by EPA regulations in Government-owned, leased, or privatized family housing.

The Air Force policy, AFI 32-1052, requires installation officials to develop a written asbestos-containing material management and operating plan.<sup>58</sup> The management plan provides procedures to maintain a permanent record of the current status of all asbestos-containing materials in an installation’s facility inventory as required by TSCA and other applicable regulations. The operating plan provides procedures for performing asbestos-related projects. Additionally, the Air Force policy, AFI 32-6001 requires installation housing officials to disclose, in writing, the potential risk of asbestos exposure and to inform residents of housing elements that contain asbestos. Finally, the Army, Navy, and Air Force policies state that OCONUS military installations must follow the OEBGD or FGS, if applicable.

### ***Installation Officials Did Not Maintain Accurate Records of the Location and Condition of Asbestos-Containing Material***

At five of the eight military installations we visited, installation officials did not maintain accurate records of the location and condition of asbestos-containing material in GO-GC military family housing as required by Federal law and DoD policies. We reviewed installation asbestos-containing material hazard management plans and records and found that, at each of the eight military installations we visited, installation officials evaluated and determined where asbestos-containing materials were present in GO-GC military family housing. However, we found deficiencies in the installation records of the location and condition of asbestos-containing materials at NAVSTA Guantanamo Bay, CFA Yokosuka, MCAS Iwakuni, Spangdahlem AB, and Wright-Patterson AFB. Additionally, we visually assessed 187 GO-GC military family housing units at the eight military installations for disturbed or deteriorated asbestos-containing material, because disturbed or deteriorated asbestos-containing materials can become airborne and pose a significant risk to human health if breathed in by someone not wearing protective respiratory equipment. We did not find instances of disturbed or deteriorated asbestos-containing materials in GO-GC military family housing units.

<sup>58</sup> Air Force Instruction 32-1052, “Facility Asbestos Management,” December 24, 2014.

As discussed above, the TSCA, EPA, and OEBGD have requirements for the management of asbestos-containing material hazards, which includes implementing a written asbestos hazard management plan. We found that installation officials at each of the military installations implemented a written asbestos management plan that complied with TSCA, EPA, or OEBGD requirements.

Furthermore, the TSCA, EPA, and the OEBGD have requirements for the management of asbestos-containing material hazards, which includes evaluating and controlling asbestos-containing materials. Evaluation is defined as any inspection, periodic reinspection, or long-term surveillance actions used to identify and monitor the location and condition of asbestos-containing materials. Control is defined as the methods or response actions, such as removal, encapsulation, enclosure, repair, or operations and maintenance, to reduce the potential for adverse health effects. To evaluate and control asbestos-containing materials, as required by TSCA, EPA, and the OEBGD, installation officials must have a detailed record of the evaluation conducted for asbestos-containing material identification, location and condition of asbestos-containing material, and control methods taken to prevent residents or building occupants from exposure to asbestos.

We found that installation officials at USAG Humphreys, USAG Wiesbaden, and Kadena AB implemented evaluation and control methods to manage asbestos-containing materials in GO-GC military family housing that complied with TSCA, EPA, or OEBGD requirements. For example, USAG Humphreys and USAG Wiesbaden installation officials maintained asbestos-containing material inventories. The inventories included records of the location and condition of asbestos-containing materials in GO-GC military family housing, the date the asbestos-containing materials were last inspected, and the next inspection due date. Additionally, we determined that installation officials conducted inspections according to the schedule described in the installation-specific asbestos management plans. However, we found that installation officials at NAVSTA Guantanamo Bay, CFA Yokosuka, MCAS Iwakuni, Spangdahlem AB, and Wright-Patterson AFB did not implement evaluation and control methods to manage asbestos-containing materials in GO-GC military family housing. For example, MCAS Iwakuni installation officials did not maintain records that reflected actual conditions of previously known asbestos-containing materials in GO-GC military family housing. Specifically, MCAS Iwakuni installation officials told us that only three GO-GC military family housing units had asbestos-containing materials and all other asbestos-containing materials were removed. However, we reviewed the MCAS Iwakuni asbestos-containing material inventory record and found 79 GO-GC military family housing buildings, which contain multiple military family housing units, identified as having or possibly having asbestos-containing materials, and installation officials did not have documentation to prove that the asbestos-containing materials were removed.

In sum, installation officials at the eight military installations we visited documented the presence of asbestos-containing material in GO-GC military family housing in their records. However, we determined that installation officials at five of the eight military installations we visited did not maintain accurate records of the location and condition of asbestos-containing materials. Therefore, installation officials could not determine the extent that asbestos-containing material hazards were present in GO-GC military family housing. Furthermore, without accurate records of the location and condition of asbestos-containing materials, installation officials cannot notify residents of the presence of known or suspected asbestos-containing material in their GO-GC military family housing units.

### ***Installations Officials Did Not Notify Residents of Asbestos-Containing Material***

At six of the eight military installations we visited, installation officials did not notify residents of asbestos-containing material in GO-GC military family housing as required by the OEBGD and Service policies. To determine if installation officials complied with the requirement to notify or disclose the presence of asbestos-containing material to residents, we reviewed installation asbestos management plans, resident handbooks, and resident housing assignment documentation to determine if military family housing residents received notification of the presence of asbestos-containing material in their GO-GC military family housing unit.

The OEBGD and Service policies require installation officials to have an asbestos notification and education program to inform residents, workers, and building occupants where asbestos-containing material with the potential to be disturbed is located, and how and why to avoid disturbing the asbestos-containing material. We found that installation officials at USAG Humphreys and Kadena AB notified residents in GO-GC military family housing of asbestos-containing material as required by the OEBGD and Service policies. However, we found that installation officials at USAG Wiesbaden, NAVSTA Guantanamo Bay, CFA Yokosuka, MCAS Iwakuni, Spangdahlem AB, and Wright-Patterson AFB did not notify residents in GO-GC military family housing of asbestos-containing material as required by the OEBGD and Service policies. For example, NAVSTA Guantanamo Bay installation officials did not provide any notification to residents and told us that they were unsure if asbestos-containing materials were present in military GO-GC military family housing. During our evaluation, installation officials found an asbestos-containing material survey of GO-GC military family housing units performed by a private company in 2007. The results of the 2007 survey indicated that asbestos-containing materials were found in GO-GC military family



housing units in 11 of the 14 neighborhoods surveyed. However, the results of this survey were not included on the NAVSTA Guantanamo Bay asbestos-containing material inventory, and installation officials were not evaluating and controlling the asbestos-containing materials. As a result, installation officials were unable to accurately identify the location and condition of asbestos-containing materials in GO-GC military family housing to notify residents. In another example, Wright-Patterson AFB installation officials did educate residents about general asbestos-containing material hazards; however, installation officials did not notify residents of the presence of known asbestos-containing materials in their GO-GC military family housing units.

In sum, residents may have been exposed to asbestos-containing material or asbestos-containing material hazards in their GO-GC military family housing unit. Without accurate disclosure of the location and condition of asbestos-containing material by installation officials, residents cannot monitor potential hazards and inform installation officials when asbestos-containing material has deteriorated and is a hazard.

Table 3 provides a summary of whether installation officials maintained accurate records or distributed an asbestos-containing material notification. A check mark indicates compliance with the management requirements discussed in this section, and an 'x' indicates deficiencies.

*Table 3. Asbestos-Containing Material Hazard Management Summary by Installation*

Installation	Implement: Written Asbestos Management Plan	Evaluate and Control: Survey and Maintain Accurate Records	Notify Residents: Notification & Education Program
USAG HUMPHREYS (ARMY)	✓	✓	✓
USAG WIESBADEN (ARMY)	✓	✓	x
NAVSTA GUANTANAMO BAY, CUBA (NAVY)	✓	x	x
CFA YOKOSUKA (NAVY)	✓	x	x
MCAS IWAKUNI, JAPAN (MARINE CORPS)	✓	x	x
SPANGDAHLEM AB (AIR FORCE)	✓	x	x
KADENA AB (AIR FORCE)	✓	✓	✓
WRIGHT-PATTERSON AFB (AIR FORCE)	✓	x	x

Note: A check mark indicates compliance with the management requirements discussed in this section, and an 'x' indicates deficiencies.

Source: The DoD OIG; derived from analysis of evidence collected from November 2018 through February 2020.

## ***Installation Officials Did Not Manage Radon Hazards***

At three of the eight military installations we visited, installation officials did not establish a radon assessment and mitigation program for GO-GC military family housing. Additionally, at four of the eight military installations we visited, installation officials established a radon assessment and mitigation program but did not manage radon hazards in GO-GC military family housing. Therefore, installation officials could not determine the extent that radon hazards were present in GO-GC military family housing at seven of the eight installations we visited, and residents may have been exposed to radon hazards in these GO-GC military family housing units.

Radon is a naturally occurring, odorless, colorless radioactive gas formed by the decay of uranium. Radon exists in varying amounts in all soils, rocks, and some groundwater supplies worldwide. Radon enters the lungs when inhaled and long-term exposure may lead to lung cancer. Radon poses a relatively low threat to human health outdoors; however, radon can accumulate to dangerous levels indoors. The presence of high levels of uranium in the soil or rock is not the sole reason for elevated indoor radon potential. Building design, building usage, building construction material, airflow, occupancy pattern, and the operation of the building's heating, ventilation, and air-conditioning system influence the accumulation of radon indoors. Testing for radon is the only way to determine if radon hazards are present in GO-GC military family housing.

### ***Radon Hazard Management Policies***

Subchapter III of the TSCA, the Indoor Radon Abatement Act, established a "long-term goal that indoor air be as free from radon as the ambient air outside buildings."<sup>59</sup> However, the Indoor Radon Abatement Act does not establish policy for radon hazard management; therefore, radon is still considered a voluntary, nonregulated program. The TSCA assigns responsibility to the EPA for establishing radon thresholds and for working with Federal agencies to assess the extent of radon contamination in Federal facilities, such as GO-GC military family housing.<sup>60</sup>

DoDI 4715.06 requires all DoD operations and military installations in the United States to comply with environmental laws, including the TSCA. Additionally, DoDI 4715.05 requires that all DoD operations and military installations OCONUS comply

<sup>59</sup> "Toxic Substances Control Act," 15 U.S.C. §§ 2661-2671, 2017.

<sup>60</sup> EPA Radon Threshold: Radon levels may vary considerably within the same geographic area. Risks are determined by performing screening measurements and from data on local geology, radioactivity, soil parameters, and construction methods. In the United States, radon is measured in picocuries per liter of air (pCi/L). The EPA and the Centers for Disease Control and Prevention recommend that corrective actions be taken at 4 pCi/L or higher. In addition, the EPA also recommends that Americans consider corrective actions for radon levels between 2 pCi/L and 4 pCi/L as well. Currently the EPA recommends that corrective action be taken for any test result  $\geq 4$  pCi/L as soon as possible to lower the lifetime risk of radon-induced lung cancer.

with the OEBGD and FGSs. However, the OEBGD removed the requirements for managing radon in March 2000.<sup>61</sup> The current OEBGD does not include policy for radon hazard management. As a result, both the OEBGD and the FGSs do not include any radon hazard management requirements. However, the Services have established policies for the management of radon at military installations worldwide.

In response to the TSCA requirement to assess the extent of radon contamination, the Services conducted radon assessments at military installations worldwide in the 1990s. Based on results of the worldwide radon assessment, the Services assigned tiered risk designations to military installations, as discussed below. The Services then applied their tiered risks designations to establish requirements for radon assessment and mitigation programs at military installations worldwide. The Services established radon assessment and mitigation programs through the following policies by adopting the EPA radon threshold and requiring corrective actions for radon measurements that exceed the EPA radon threshold.

The Army policy, AR 420-1, requires Army installation officials worldwide to establish a radon assessment and mitigation program.<sup>62</sup> Additionally, Army Public Works Technical Bulletin (PWTB) 200-1-144 contains management “guidance” for radon that includes an installation-specific radon management plan to identify, mitigate, periodically retest, maintain records, inform residents of radon hazards, and perform periodic inspection and maintenance of mitigation systems.<sup>63</sup> Army PWTB 200-1-144 assigned a tiered risk designation of priority one, priority two, or priority three for radon hazard management based on the building structure type. Priority one includes “structures such as day care centers, hospitals, schools, and living areas (quarters and family housing).” Priority two includes “structures such as areas having 24-hour operations.” Priority three includes “all other routinely occupied structures.” Furthermore, Army PWTB 200-1-144 defines assessment and mitigation requirements and timelines based on the tiered risk designation. For example, for priority one structures at Army military installation that did not require any mitigation after initial screening, a minimum of 10 percent of structures must be retested every 5 years.

<sup>61</sup> DoD 4715.05-G, “Overseas Environmental Baseline Guidance Document (OEBGD),” March 15, 2000 (Superseded).

<sup>62</sup> Army Public Works Technical Bulletin (PWTB) 200-1-144 states, “[The AR 420-1] requires that each [Army] installation establish a radon assessment and mitigation program...It erroneously refers back to AR 200-1 which no longer contains the [Army Radon Reduction Program (ARRP)]...Since the ARRP is no longer in AR 200-1 nor is it in AR 420-1, [the PWTB 200-1-144] provides guidance to installation personnel [for radon assessment and mitigation programs].” PWTBs are published by the Headquarters, U.S. Army Corps of Engineers. They are intended to provide information on specific topics in areas of Facilities Engineering and Public Works.

<sup>63</sup> U.S. Army Corps of Engineers, Public Works Technical Bulletin 200-1-144, “Toxics Management,” October 30, 2014.

The Navy policy, OPNAVINST 5090.1D, requires Navy and Marine Corps installation officials worldwide to implement the Navy Radon Assessment and Mitigation Program.<sup>64</sup> The Navy Radon Assessment and Mitigation Program contains current radon policy and provides requirements for the implementation of radon-resistant new construction, radon testing, radon mitigation, and radon system maintenance activities at Navy and Marine Corps installations worldwide. The Navy Radon Assessment and Mitigation Program states that installation officials must identify, mitigate, periodically retest, maintain records, and inform residents of radon hazards and perform periodic inspection and maintenance of mitigation systems. Additionally, the Navy and Marine Corps assigned a tiered risk designation of radon potential category (RPC) one, RPC two, or RPC three for radon hazard management at military installations worldwide. RPC one includes installations or sites with known elevated radon potential.<sup>65</sup> RPC two includes installations or sites with unknown radon potential. RPC three includes installations or sites with sufficient screening data that indicated low radon potential. The Navy Radon Assessment and Mitigation Program defines assessment and mitigation requirements and timelines based on the tiered risk designation. For example, an RPC three military installation requires installation officials to perform testing on all GO-GC military family housing units and to perform retesting for radon hazards after renovations.

The Air Force policy, AFI 48-148, requires Air Force installation officials worldwide to assess radon levels, mitigate radon levels (where the radon threshold is exceeded), perform maintenance on mitigation systems, perform long term radon monitoring, maintain records, and inform housing residents of the presence of radon.<sup>66</sup> Additionally, the Air Force military installations were assigned a tiered risk designation of high-risk, medium-risk, and low-risk for radon hazard management. High-risk includes installations and sites with very elevated radon potential. Medium-risk includes installations and sites with elevated radon potential. Low-risk includes installations and sites with low potential for elevated radon. The Air Force's guidebook for radon management defines assessment and mitigation requirements and timelines based on the tiered risk designation.<sup>67</sup> For example, installation officials at medium-risk and high-risk military installations are required to perform more testing than low-risk installations, and medium-risk and high-risk military installations are required to perform periodic retesting of remediated and non-remediated housing.

---

<sup>64</sup> Naval Facilities Engineering Command, Pacific, "Navy Radon Assessment and Mitigation Program, Guidebook for Naval Shore Installations," September 21, 2016.

<sup>65</sup> Radon Potential Category is a dynamic category assigned by the Navy based on historical radon testing data to a naval installation or site which designates its potential for having elevated radon levels.

<sup>66</sup> Air Force Instruction 48-148, "Ionizing Radiation," November 20, 2014.

<sup>67</sup> Bioenvironmental Engineer's Guidebook for Radon Management, 2nd Edition, March 2015.

In sum, the DoD-level policies do not require radon assessment and mitigation programs at military installations. However, the Service-specific policies address radon assessment and mitigation program requirements which require corrective actions for radon measurements that exceed the EPA radon threshold. The Service policies have requirements for the management of radon by (1) evaluating radon hazards, (2) controlling radon hazards, and (3) informing residents of the presence of radon.

### ***Installation Officials Did Not Establish a Radon Assessment and Mitigation Program***

At each of the eight military installations we visited, installation officials maintained records of the worldwide radon assessment conducted in the 1990s, which identified the eight military installations as locations requiring installation officials to continually evaluate, control, and inform residents of the presence of radon. Specifically, at three of the eight military installations we visited, installation officials did not establish a radon assessment and mitigation program for GO-GC military family housing as required by Service policies. As discussed above, Service policies require installation officials to establish a radon assessment and mitigation program. We determined that installation officials at USAG Humphreys, USAG Wiesbaden, and NAVSTA Guantanamo Bay did not establish a radon assessment and mitigation program for GO-GC military family housing.

We asked installation officials at USAG Humphreys and USAG Wiesbaden why they did not establish a radon assessment and mitigation program. Installation officials at USAG Humphreys and USAG Wiesbaden told us that they were not aware of a requirement for a radon assessment and mitigation program at Army installations. However, the Army's PWTB 200-1-144 defines GO-GC military family housing as a tiered risk designation of priority one which requires the testing of a minimum of 10 percent of priority one structures every 5 years.

Installation officials at NAVSTA Guantanamo Bay told us that they do not have a radon assessment and mitigation program because they were not aware of the Navy Radon Assessment and Mitigation Program requirements. Although NAVSTA Guantanamo Bay was assigned a tiered risk designation of radon potential category (RPC) three, the NAVSTA Guantanamo Bay radon records indicate that the installation officials have not performed radon testing since 1990. The Navy Radon Assessment and Mitigation Program requires installations with a tiered risk designation of RPC three to perform testing on all GO-GC military family housing, including new construction, and to retest for radon hazards after renovations. Installation officials at NAVSTA Guantanamo Bay did not perform testing on GO-GC military family housing units constructed since the radon testing

in 1990 or perform retesting after renovations were completed in GO-GC military family housing. For example, NAVSTA Guantanamo Bay installation officials did not perform radon testing on 480 GO-GC military family housing units constructed between 1993 and 2018.

In sum, installation officials at USAG Humphreys, USAG Wiesbaden, and NAVSTA Guantanamo Bay could not determine the extent that radon hazards were present in GO-GC military family housing. Without establishing a radon assessment and mitigation program, installation officials cannot manage radon hazards, and residents may have been exposed to radon hazards in GO-GC military family housing.

### ***Installation Officials Established a Radon Assessment and Mitigation Program but Did Not Manage Radon Hazards***

As discussed above, at three of the eight military installations we visited, installation officials did not establish a radon assessment and mitigation program. Additionally, at four of the eight military installations we visited, installation officials established a radon assessment and mitigation program but did not manage radon hazards in GO-GC military family housing as required by Service policies. We reviewed installation records and interviewed installation officials to determine if installations officials were managing radon hazards. We found that installation officials at CFA Yokosuka, MCAS Iwakuni, Spangdahlem AB, and Kadena AB were not evaluating hazards, controlling hazards, or informing residents of the presence of radon.

As previously discussed, the Services have requirements for the management of radon hazards, which are (1) evaluating radon hazards, (2) controlling radon hazards, and (3) informing residents of the presence of radon. The Services have defined the requirements for evaluating radon hazards as surveys, screenings, assessments, or tests to identify location and level of radon in GO-GC military family housing. Additionally, the Services have defined the requirements for controlling radon hazards as performing mitigation within specified timelines, conducting maintenance on mitigation systems as required, and monitoring radon levels through periodic retesting. Finally, the Services have defined the requirements for informing residents of radon hazards as providing educational information and radon testing results.

Installation officials at CFA Yokosuka, MCAS Iwakuni, Kadena AB, and Wright-Patterson AFB evaluated radon hazards by performing surveys, screenings, assessments, or tests to identify the location and level of radon in GO-GC military family housing. However, we found that installation officials at Spangdahlem AB did not evaluate radon hazards in all GO-GC military family housing units, as

required by Service policy. According to the Air Force's guidebook for radon management, Spangdahlem AB has a tiered risk designation of medium-risk for radon. The Air Force policy, AFI 48-148 states that "[r]adon measurements must be available for all DoD housing," and that the requirement to perform radon testing on all GO-GC military family housing includes medium-risk installations. Spangdahlem AB has 215 GO-GC family housing units of different types, including single family homes, duplex and threeplex townhomes, and multi-family housing units. Although installation officials performed radon testing on a sample of 11 single family homes and townhomes, they did not perform radon testing on the remaining 130 single family homes and townhomes. Additionally, they did not perform radon testing on any of the 74 multi-family housing units. We asked installation officials why they did not perform radon testing on all GO-GC military family housing units. Installation officials could not provide us with a reason.

Additionally, installation officials at Wright-Patterson AFB controlled radon hazards by performing mitigation within specified timelines and by including the requirement for their housing maintenance contractor to conduct maintenance on mitigation systems. However, we determined that installation officials at CFA Yokosuka, MCAS Iwakuni, Spangdahlem AB, and Kadena AB did not control radon hazards by performing mitigation, maintaining mitigation systems, or conducting long-term monitoring and retesting. For example, installation officials at CFA Yokosuka did not perform radon retesting, as required by Service policy. The OPNAVINST 5090.1D and the Navy Radon Assessment and Mitigation Program require retesting after major structural modifications for family housing on Navy military installations, regardless of the installation tiered risk designation. The CFA Yokosuka radon records indicate that installation officials last performed radon assessments in GO-GC military family housing on the CFA Yokosuka base in the 1990s. The February 2014 CFA Yokosuka radon management plan states that "[c]hanges to building envelopes (especially housing) have occurred since the initial screenings [for radon in GO-GC military family housing on the CFA Yokosuka base in the 1990s] and re-testing under the monitoring requirements of OPNAVINST 5090.1D is required." However, installation officials could not provide us evidence of radon retesting, and installation officials could not provide us with a reason why they did not perform the radon retesting required by OPNAVINST 5090.1D.

In another example, installation officials at Kadena AB did not control radon hazards in GO-GC military family housing, because installation officials did not perform periodic retesting as required by Service policy. Specifically, Kadena AB has a tiered risk designation of high-risk, and AFI 48-148 requires installation officials at high-risk installations to perform retesting every 5 years in GO-GC

military family housing. We reviewed the Kadena AB radon test records and found that 3,160 (46 percent) of 6,810 GO-GC military family housing units were past due for radon retesting. Installation officials awarded a radon testing contract in July 2019, and we verified that the AFI 48-148 requirement to perform radon testing was included in the contract.

Furthermore, installation officials at MCAS Iwakuni, Kadena AB, and Wright-Patterson AFB informed residents of radon hazards by providing educational information and radon testing results. However, we found that installation officials at CFA Yokosuka and Spangdahlem AB did not inform residents of radon hazards by providing educational information and radon testing results. Installation officials at Spangdahlem AB did not provide educational information or radon testing results as required by Service policy. The AFI 32-6001 states that installation officials are required to provide an education pamphlet and radon testing results regardless of the radon level reported from testing. As previously discussed, installation officials at Spangdahlem AB performed radon testing on townhome units from October 2016 through March 2017. However, installation officials did not provide radon testing results to residents. Installation officials told us that informing residents of radon testing results was unnecessary because the results in the townhome units showed radon at acceptable levels.

In sum, installation officials are unable to identify the extent that radon hazards were present in GO-GC military family housing because installation officials did not evaluate and control radon hazards. Therefore, residents may have been exposed to radon hazards in GO-GC military family housing. Furthermore, without installation officials informing residents of radon hazards, residents may not be aware of the potential health effects of radon exposure.



Table 4 provides a summary of whether installation officials established a radon assessment and mitigation program to manage radon hazards. A check mark indicates compliance with the management requirements discussed in this section, and an 'x' indicates deficiencies.

*Table 4. Radon Hazard Management Program Summary by Installation*

Installation	Establish: Radon Hazard Management Program	Evaluate: Radon Screening and/or Testing	Control:		Inform: Presence of Radon to Residents
			Radon Mitigation Within Specified Timelines and Mitigation System Maintenance	Long-term Radon Monitoring and Retesting	
USAG HUMPHREYS (ARMY)	x	x	x	x	x
USAG WIESBADEN (ARMY)	x	x	x	x	x
NAVSTA GUANTANAMO BAY, CUBA (NAVY)	x	✓	x	x	x
CFA YOKOSUKA (NAVY)	✓	✓	✓	x	x
MCAS IWAKUNI, JAPAN (MARINE CORPS)	✓	✓	✓	x	✓
SPANGDAHLEM AB (AIR FORCE)	✓	x	x	x	x
KADENA AB (AIR FORCE)	✓	✓	x	x	✓
WRIGHT-PATTERSON AFB (AIR FORCE)	✓	✓	✓	✓	✓

Note: A check mark indicates compliance with the management requirements discussed in this section, and an 'x' indicates deficiencies.

Source: The DoD OIG; derived from analysis of evidence collected from November 2018 through February 2020.

### ***Installation Officials Did Not Manage Fire Safety Hazards***

In addition to the systemic management deficiencies previously discussed, we found instances where installation officials did not manage fire safety. At two of the eight military installations we visited, installation officials did not incorporate fire safety requirements, such as window size requirements for fire escape, in GO-GC military family housing. Therefore, residents may have been exposed to fire safety hazards in GO-GC military family housing.

At Wright-Patterson AFB, installation officials did not manage fire safety hazards in GO-GC military family housing units, as required by the National Fire Protection Association 101.<sup>68</sup> The National Fire Protection Association 101 requires all living areas to have two fire escape routes. If one of the fire escape routes is a window, it must be large enough to be used as a fire escape.<sup>69</sup> Installation officials at Wright-Patterson AFB replaced windows in 62 GO-GC military family housing units during multiple projects completed between 2001 and 2011, but the windows did not meet the National Fire Protection Association 101 requirements for fire escape. After the window replacement projects were completed, installation fire safety officials identified, in July 2014, that the windows were too small to be used as a fire escape; however, installation officials did not take corrective action. We asked an installation fire safety official why this occurred. He told us that installation fire safety officials were not provided the opportunity to review the design of the window replacement project prior to the installation in the GO-GC military family housing units.

Additionally, installation officials at Wright-Patterson AFB did not manage fire safety hazards in GO-GC military family housing units, as required by UFC 3-601-02.<sup>70</sup> Since 2010, the UFC 3-601-02 requires that battery-operated smoke detectors in military family housing units be replaced with wired and interconnected smoke detectors during resident change of occupancy. Wired and interconnected smoke detectors sound their alarms to alert residents to a fire hazard when one smoke detector senses smoke regardless of the location of the smoke detector in the housing unit. Installation officials told us that they were not aware of the UFC 3-601-02 requirement until April 2019. Installation officials told us that their GO-GC military family housing maintenance contract was in the process of being renewed and that they would include the requirement to replace the battery-operated smoke detectors with wired and interconnected smoke detectors during the next change of occupancy. We verified that the UFC 3-601-02 requirement was included in the draft contract documentation. However, at the time of our evaluation, the contract had not been awarded.

---

<sup>68</sup> National Fire Protection Association "NFPA 101: Life Safety Code," 2012 Edition (superseded 2018 – requirements unchanged).

<sup>69</sup> An outside window used as a secondary means of fire escape must provide a clear opening of not less than 5.7 ft<sup>2</sup> (0.53 m<sup>2</sup>). The width must be not less than 20 in. (510 mm), and the height must be not less than 24 in. (610 mm). The bottom of the opening must be not more than 44 in. (1120 mm) above the floor.

<sup>70</sup> UFC 3-601-02, "Operation and Maintenance: Inspection, Testing, and Maintenance of Fire Protection Systems," September 8, 2010.

At USAG Wiesbaden, installation officials did not manage fire safety hazards in GO-GC military family housing units, as required by the Army in Europe Supplement 1 to AR 420-1.<sup>71</sup> Specifically, the November 2008 Army in Europe Supplement 1 to AR 420-1 requires installation officials to “replace any remaining child-safety bars on windows with master-keyed, locking window handles that provide the child-safe tilt function (the window tilts inward from the top only and may be operated by the locking handle)” on GO-GC military family housing units.<sup>72</sup> However, installation officials at USAG Wiesbaden did not remove all of the child-safety bars on windows in GO-GC military family housing units. Installation housing officials told us that they requested installation maintenance officials remove the child-safety bars on windows approximately 10 years ago, but the work was not completed. However, installation housing officials never followed up on the request with installation maintenance officials and could not provide us with a reason why the bars were not removed. Figure 3 shows the child-safety bars identified as a fire safety hazard (marked by arrows) and the child-safe tilt function (marked by circles).



<sup>71</sup> Army in Europe Supplement 1 to AR 420-1, “Army Facilities Management,” November 20, 2008.

<sup>72</sup> The Army in Europe Supplement 1 to AR 420-1 did not specify why the child-safety bars were a fire safety hazard, but it specified that their removal was required for fire protection reasons. However, we believe the windows that provide the child-safe tilt function provide better window fall prevention than the existing child-safety bars.

### ***Installation Officials Did Not Manage Drinking Water Quality***

We found one instance where installation officials did not manage drinking water quality. At one of the eight military installations we visited, installation officials did not test for all drinking water quality hazards in GO-GC military family housing. Therefore, residents may have been exposed to drinking water quality hazards in GO-GC military family housing.

At Spangdahlem AB, installation officials did not manage drinking water quality in GO-GC military family housing units as required by the Germany FGS. Specifically, since 2017, the Germany FGS requires installation officials to perform “annual monitoring of Legionella at facilities containing showers or other activities where warm drinking water is aerosolized.”<sup>73</sup> Legionella is a bacteria found throughout the world, mostly in aquatic and moist environments and can impact public health. As of May 2019, installation officials at Spangdahlem AB installation officials had not performed monitoring of the Legionella bacteria at facilities containing showers, such as GO-GC military family housing units, during water quality monitoring. Installation officials could not provide us a reason why they did not perform annual monitoring of the Legionella bacteria in the installation’s drinking water. Installation officials told us that future testing will include annual monitoring of Legionella bacteria requirement. We verified that installation officials had included the annual monitoring of Legionella bacteria requirement in an updated Spangdahlem AB water sampling plan.

### **Management of Health and Safety Hazards in Military Family Housing Needs Improvement**

The deficiencies in the management of health and safety hazards at the eight military installations we visited occurred because the DoD’s housing policies do not define minimum standards for health and safety hazard management in GO-GC military family housing. DoDM 4165.63 states that DoD housing must meet “minimum standards for...condition, health, and safety” in GO-GC military family housing. However, DoDM 4165.63 does not define the “minimum standards for...condition, health, and safety.” Additionally, DoD housing policies do not require any type of assessment of the condition of housing units to address the management of health and safety hazards in GO-GC military family housing. Moreover, the DoD’s

---

<sup>73</sup> Legionella bacteria can be found throughout the world, mostly in aquatic and moist environments (for example, in lakes, rivers, ground water, and soil). The bacteria can also grow in drinking water distribution systems and plumbing. People are exposed to Legionella when they inhale water droplets containing the bacteria. Most healthy people are not affected by the bacteria. However, the elderly and those with weakened immune systems may develop Legionellosis, which is a respiratory disease caused by the legionella bacteria. Serious infections can cause a severe pneumonia called Legionnaires’ disease. The bacteria can also cause a less serious infection, called Pontiac fever, which resembles a mild case of the flu.

UFC for family housing only applies to new construction or renovation projects and does not address the management of health and safety hazards in existing military family housing.

The deficiencies in the management of health and safety hazards at the eight military installations we visited also occurred because Service oversight inspections and audits were not designed to identify deficiencies in the management of health and safety hazards. The DoDM 4165.63 states that the Services must “provide managerial oversight to ensure that the housing inventory is maintained in good condition and housing management is operated in an effective and cost-efficient manner.” The Services are required by their policies to perform oversight of their programs, including military family housing; however, the oversight policies, procedures, and checklists for inspections and audits of their programs are not designed to address all requirements related to the management of health and safety hazards in GO-GC military family housing.

### ***DoD’s Housing Policies Do Not Define Minimum Standards to Allow for the Adequate Management of Health and Safety Hazards in GO-GC Military Family Housing***

The deficiencies in the management of health and safety hazards at the eight military installations we visited occurred because the DoD’s housing policies do not define minimum standards for health and safety hazard management in GO-GC military family housing. The DoD housing policies also do not require any type of assessment of the condition of housing units to address the management of health and safety hazards in GO-GC military family housing. Furthermore, the DoD’s UFC for family housing only applies to new construction or renovation projects and does not address the management of health and safety hazards in existing housing.

DoDI 4165.63 states that military families should have access to affordable, quality housing facilities, consistent with rank and dependent status that reflect contemporary community living standards. DoDI 4165.63 assigns broad authority to the installation commanders to decide the best use of resources to provide access to housing for eligible service members and their families. Furthermore, DoDM 4165.63 states that for DoD housing to be adequate, it must meet “minimum standards for...condition, health, and safety[,]” be well-maintained and structurally sound (must not pose a health, safety, or fire hazard), and must not need repairs and improvements that exceed 20 percent of its replacement cost. However, DoDI 4165.63 and DoDM 4165.63 do not define the minimum standards for the “condition, health, and safety” of GO-GC military family housing except for the replacement cost criteria. Additionally, DoDM 4165.63 states that “for DoD family

housing to be considered adequate overall, it must meet minimum standards for configuration, privacy, condition, health, and safety. Any housing unit requiring whole-house repair, improvement, or replacement, as identified by Military Service condition assessments, does not meet the minimum standards of adequacy.” However, the policies do not define the requirements for a “Military Service condition assessment” of military family housing, such as a condition assessment to address the management of health and safety hazards in GO-GC military family housing.

Additionally, UFC 4-711-01 provides requirements for addressing health and safety concerns during the design, construction, and improvement of DoD family housing facilities in the United States and overseas, including health and safety hazards such as lead-based paint, asbestos-containing material, and radon. However, UFC 4-711-01 does not apply to the management of health and safety hazards in existing housing. While UFC 4-711-01 is a comprehensive guide to incorporating health and safety concerns in the planning, design, and construction of DoD family housing facilities, it states that military installation “[p]rojects should not be created for the sole purpose of meeting” the health and safety requirements of the UFC. Specifically, installation officials cannot use UFC 4-711-01 as the sole justification to develop a project to conduct a renovation of GO-GC military family housing. Therefore, UFC 4-711-01 does not address the management of health and safety hazards in existing GO-GC military family housing.

Furthermore, the DoD environmental policies, such as DoDD 4715.1E, DoDI 4715.05, DoDI 4715.05-G, and DoDI 4715.06, direct the Services to comply with applicable environmental laws at installations worldwide. Specifically, DoDD 4715.1E provides DoD policy for mitigation of health and safety hazards in the workplace. Additionally, DoDI 6055.01 provides DoD policy on assessing risks posed by the presence of health and safety hazards in the workplace.<sup>74</sup> However, the DoDI 6055.01 risk assessments do not address health and safety hazard management in military family housing. Ultimately, DoDD 4715.1E and DoDI 6055.01 only apply to health and safety hazards in the workplace and do not apply to housing or non-work situations.<sup>75</sup>

As discussed previously, eight DoD policies address housing, environmental, and safety and occupational health. The DoD housing policies focus on housing size, eligibility, and assignment, but they do not define minimum standards to allow for the adequate management of health and safety hazards. The DoD environmental

---

<sup>74</sup> DoDI 6055.01 defines a risk management process which includes identifying hazards, assessing hazards, implementing controls, and hazard risk mitigation.

<sup>75</sup> DoDI 6055.01 defines occupational safety and health as programs and practices for protecting individuals from harm and loss of resources caused by hazards in the workplace.

and safety and occupational health policies focus on the management of health and safety hazards in the workplace, but they do not provide requirements for the management of health and safety hazards in GO-GC military family housing. Additionally, none of the eight DoD policies discussed above require an assessment of the condition of housing units to address health and safety hazards. Therefore, the DoD cannot identify whether military family housing meets minimum standards for condition, health, and safety or identify the extent that health and safety hazards are present in GO-GC military family housing.

As discussed in the background section of this report, the HUD “Healthy Homes Program Guidance Manual,” describes best practices and techniques to manage health and safety hazards in order to achieve safe housing.<sup>76</sup> The manual states that effective housing programs are defined by the integration of health and housing services. Furthermore, the manual states that a comprehensive approach towards housing addresses multiple health hazards that are often interrelated and ultimately promotes cost-efficient housing interventions.

### ***Service Oversight Inspections and Audits Are Not Designed to Identify Deficiencies in the Management of Health and Safety Hazards in GO-GC Military Family Housing***

The deficiencies in the management of health and safety hazards at the eight military installations we visited also occurred because Service oversight inspections and audits were not designed to identify deficiencies in the management of health and safety hazards. DoDM 4165.63 states that the Services must “provide managerial oversight to ensure that the housing inventory is maintained in good condition and housing management is operated in an effective and cost-efficient manner.” The purpose of oversight is to oversee an organization’s operations; provide constructive criticism to management; and, where appropriate, make recommendations so that the organization achieves its objectives.

The Army oversight policy specifies how each Army organization should conduct various inspections and audits. However, the various inspections and audits mentioned in the Army oversight policy are not designed to address all requirements for the management of health and safety hazards in GO-GC military family housing. Two of the various inspections and audits described in the Army oversight policy are the Installation Status Report and the Environmental Performance Assessment System. The Installation Status Report assesses installation readiness, including facility functional capability, quality, and readiness. The Installation Status Report includes a housing checklist that requires

<sup>76</sup> Healthy Homes Program Guidance Manual, July 19, 2012.

assessment of the structural condition of Army housing; however, it does not include management of other health and safety hazards in GO-GC military family housing. For example, when assessing the condition of an interior wall, the age and structural integrity of the wall is considered. However, whether the paint contains lead or causes any other health and safety hazard is not assessed.

Additionally, the Army Environmental Performance Assessment System consolidates “environmental regulations...into consistent and easy-to-use checklists” to allow for environmental oversight.” The Environmental Performance Assessment System checklists include requirements for the assessment of health and safety hazards; however, the checklists only include requirements from the Army environmental policy and are silent on requirements from the Army housing policy for the management of health and safety hazards. Furthermore, the Environmental Performance Assessment System checklists are different for CONUS and OCONUS military installations. For example, the Environmental Performance Assessment System radon checklists includes radon assessment and mitigation program requirements for CONUS military installations, but not OCONUS military installations. Therefore, the Environmental Performance Assessment System reports developed by Army officials could not have identified that USAG Humphreys and USAG Wiesbaden installation officials did not establish radon assessment and mitigation programs, as summarized in Table 4.

The Navy oversight policy specifies how each Navy organization should conduct various inspections. However, the various inspections mentioned in the Navy oversight policy are not designed to address all requirements for the management of health and safety hazards in GO-GC military family housing. One of the various inspections, the Housing Program Review, has procedures which are used to conduct Navy housing inspections, including health and safety hazards. However, the Housing Program Review does not include a standard checklist for the assessment of the management of health and safety hazards in GO-GC military family housing. As a result, Housing Program Reviews are not standardized and each review may not include the requirements for the management of health and safety hazards in GO-GC military family housing. For example, the September 2018 NAVSTA Guantanamo Bay and the May 2014 Navy Region Japan (which includes CFA Yokosuka) Housing Program Reviews performed by Navy officials did not include requirements for the management of asbestos-containing materials. Therefore, Navy officials did not identify that installation officials at NAVSTA Guantanamo Bay and CFA Yokosuka were not maintaining accurate records of the location and condition of asbestos-containing materials in GO-GC military family housing, as summarized in Table 3.



The Marine Corps oversight policy specifies how each Marine Corps organization should conduct inspections and requires the use of functional area checklists. However, the functional area checklists mentioned in the Marine Corps oversight policy are not designed to address all requirements for the management of health and safety hazards in GO-GC military family housing. The family housing functional area checklist includes a small subset of requirements from the Marine Corps housing policy, but it does not include any requirements for the management of health and safety hazards. Additionally, the safety program functional area checklist assesses whether installation commanders have appointed both a trained asbestos program manager and a trained lead program manager. However, the safety program functional area checklist does not include the other requirements of the asbestos-containing material or lead hazard management programs, such as evaluation, control, and disclosure of the hazard. Therefore, the family housing and safety program functional area checklists used by Marine Corps officials are not designed to identify the deficiencies in the management of health and safety hazards discussed in this report. Furthermore, the family housing and safety program functional area checklists could not have identified that MCAS Iwakuni installation officials were not maintaining accurate records of the location and condition of asbestos-containing materials in GO-GC military family housing, as summarized in Table 3.

The Air Force oversight policy specifies how each Air Force organization should conduct inspections and requires the use of various inspections. However, the inspections mentioned in the Air Force oversight policy are not designed to address all requirements for the management of health and safety hazards in GO-GC military family housing. One of the various inspections, the Management Internal Control Toolset, includes various checklists, such as the family housing checklist for GO-GC military family housing. The family housing checklist assesses requirements in the Air Force housing policy, but it does not include requirements for the management of health and safety hazards in GO-GC military family housing. For example, the Air Force housing policy requires installation housing officials to disclose known or suspected health and safety hazards, such as lead-based paint; however, the family housing checklist does not include this requirement. Therefore, the family housing checklist used by Air Force officials is not designed to identify the deficiencies in the management of health and safety hazards discussed in this report. Furthermore, the family housing checklist could not have identified that Spangdahlem AB, Kadena AB, and Wright-Patterson AFB installation officials were not providing complete lead-based paint disclosures in GO-GC military family housing, as summarized in Table 2.

During our evaluation, we found that Service oversight inspections and audits were not designed to identify the deficiencies in the management of health and safety hazards in GO-GC military family housing discussed in this report. Therefore, Service oversight cannot identify deficiencies in the management of health and safety hazards in GO-GC military family housing. The DoD OIG has previously published multiple reports on the condition of military family housing. Specifically, Report No. DODIG-2017-004 summarized the deficiencies found in six previous DoD OIG reports.<sup>77</sup> Each of the six previous DoD OIG reports cited deficiencies in the inspection and maintenance of military facilities.<sup>78</sup> The deficiencies identified in the management of health and safety hazards in this and previous DoD OIG reports highlight the need for Service officials to take action to improve their oversight of the management of health and safety hazards in GO-GC military family housing.

## Residents May Be Exposed to Preventable Health and Safety Hazards in GO-GC Military Family Housing

We believe the deficiencies identified at the eight military installations we visited indicate that the potential exists for similar deficiencies in the management of health and safety hazards in GO-GC military family housing worldwide. As discussed in this report, at each of the eight military installations we visited, we found deficiencies in the management of health and safety hazards in GO-GC military family housing. Installation officials at each of the eight military installations we visited did not maintain records of the location and condition of potential hazards, did not consistently perform required management actions, and did not provide required disclosures and notifications of potential hazards. Therefore, installation officials were not effectively managing health and safety hazards in GO-GC military family housing. Additionally, residents may not have been aware of potential hazards in their GO-GC military family housing units and, therefore, may not effectively monitor potential hazards to determine when actions are needed to prevent hazardous situations.

<sup>77</sup> Report No. DODIG-2017-004, "Summary Report – Inspections of DoD Facilities and Military Housing and Audits of Base Operations and Support Services Contracts," October 14, 2016.

<sup>78</sup> Report No. DODIG-2016-106, "U.S. Military-Occupied Facilities Inspection—King Abdullah II Special Operations Training Center," July 7, 2016.

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

Report No. DODIG-2015-162, "Continental United States Military Housing Inspections – National Capital Region," August 31, 2015.

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

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

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

DoDM 4165.63 states that GO-GC military family housing must “be well maintained, structurally sound...[and] shall not pose a health, safety, or fire hazard.” However, the DoD’s housing policies do not define minimum standards for the adequate management of health and safety hazards in GO-GC military family housing, and Service oversight inspections and audits are not designed to identify deficiencies in the management of health and safety hazards. Therefore, the DoD and the Services cannot determine whether health, safety, and environmental risks have been managed to acceptable levels for military family housing residents. If the DoD and the Services do not improve policies and procedures to identify, mitigate or minimize, monitor, disclose, and oversee health and safety hazards in GO-GC military family housing, the DoD and the Services will continue to risk the health and safety of Service members and their families.

## Recommendations, Management Comments, and Our Response

### ***Recommendation 1***

**We recommend that the Under Secretary of Defense for Acquisition and Sustainment and the Under Secretary of Defense for Personnel and Readiness collaboratively establish or revise appropriate DoD policy(s) to address health and safety hazards—including lead-based paint, asbestos-containing material, radon, fire and electrical safety, drinking water quality, window fall prevention, mold, carbon monoxide, and pest management—in military family housing to manage health, safety, and environmental risks to acceptable levels for military family housing residents.**

### ***Under Secretary of Acquisition and Sustainment Comments***

The Acting Assistant Secretary of Defense for Sustainment, responding on behalf of the USD(A&S) partially agreed with the recommendation. Specifically, the Acting Assistant Secretary agreed that both the USD(A&S) and the Under Secretary of Defense for Personnel and Readiness (USD[P&R]) should review existing DoD policies to ensure that the policies address health and safety hazards—including lead-based paint, asbestos-containing material, radon, fire and electrical safety, drinking water quality, window fall prevention, mold, carbon monoxide, and pest management—in military family housing to manage health, safety, and environmental risks to acceptable levels for military family housing residents. However, the Acting Assistant Secretary stated that the DoD should not establish policies in areas where there is no Federal standard (such as mold), as the DoD is not the regulatory agency responsible for setting standards for environmental, health, or safety hazards.

### ***Under Secretary of Personnel and Readiness Comments***

The Official Performing the Duties of the Under Secretary of Defense for Personnel and Readiness, partially agreed with the recommendation. Specifically, the USD(P&R) will provide a subject matter expert to review policies under the responsibility of the USD(A&S), such as DoDI 4165.63 and other policies for environmental management. Additionally, the USD(P&R) will issue policy for health and safety hazards which have been determined to fill a gap and falls within the scope of DoDI 6055.01.

### ***Our Response***

Comments from the USD(A&S) partially addressed the recommendation; therefore, the recommendation is unresolved. While the comments provided by the USD(A&S) agreed that USD (A&S) and USD(P&R) should review existing DoD policies and guidance to ensure that the publications address health and safety hazards, the comments do not provide specific actions or timelines to resolve our recommendation. Specifically, the comments do not address which policies, if any, will be reviewed, issued, or updated, or the timeline for when the policies will be released.

Comments from the USD(P&R) partially addressed the recommendation; therefore, the recommendation is unresolved. While the comments provided by the USD(P&R) were coordinated with the USD(A&S), the comments do not provide specific actions or timelines to resolve this recommendation for either office. Specifically, the comments do not address which policies, if any, will be issued or updated, or the timeline for when the policies will be released.

We request that both the USD(A&S) and the USD(P&R) describe specific actions that they will take to determine (1) which policies will be issued or updated, (2) who will be responsible to update the policies, (3) what will be updated in the policies, and (4) the timeline for when the policies will be released.

## ***Recommendation 2***

**We recommend that the Office of the Assistant Secretary of the Army for Installations, Energy and Environment:**

- a. Update Service policies to align with revisions to DoD policy for health and safety hazard management;**
- b. Develop oversight policies and procedures to assess the management of health and safety hazards in GO-GC military family housing; and**
- c. Direct installation officials to correct the specific lead-based paint, asbestos-containing material, radon, and fire safety health and safety hazard management deficiencies discussed in this report.**

### ***Assistant Secretary of the Army for Installations, Energy and Environment Comments***

The Deputy Assistant Secretary of the Army for Installations, Housing and Partnerships, responding for the Assistant Secretary of the Army for Installations, Energy and Environment, agreed with the recommendation. The Deputy Assistant Secretary stated that the Army will update policies to align with new or revised DoD health and safety hazard management policies within 3 months after the DoD publishes its policies. The Army will develop oversight policies and procedures to assess the management of health and safety hazards by December 31, 2020. Additionally, the Army will direct installation officials to correct the deficiencies discussed in this report and requested that we provide a list of deficiencies at both Army locations we visited. The Army's response included an enclosure with additional comments and requested edits to the report.

### ***Our Response***

Comments from the Deputy Assistant Secretary of the Army for Installations, Housing and Partnerships addressed the recommendation; therefore, the recommendation is resolved but will remain open. We responded directly to the Office of the Deputy Assistant Secretary of the Army for Installations, Housing and Partnerships to address the Army's request for a deficiency list. Additionally, we reviewed the enclosure, included relevant changes, and provided the Army officials with a rationale for items not included in the report. We will close the recommendation once the DoD updates policies for health and safety hazard management and we verify that the Army took actions to fully address the recommendation.

### ***Recommendation 3***

**We recommend that the Office of the Assistant Secretary of the Navy for Energy, Installations and Environment (on behalf of the U.S. Navy and U.S. Marine Corps):**

- a. Update Service policies to align with revisions to DoD policy for health and safety hazard management;**
- b. Develop oversight policies and procedures to assess the management of health and safety hazards in GO-GC military family housing; and**
- c. Direct installation officials to correct the specific lead-based paint, asbestos-containing material, and radon health and safety hazard management deficiencies discussed in this report.**

### ***Assistant Secretary of the Navy for Energy, Installations and Environment Comments***

The Acting Assistant Secretary of the Navy for Energy, Installations and Environment agreed with the recommendation. The Acting Assistant Secretary stated that the Department of the Navy will align Navy and Marine Corps policies upon release of a directive-type memorandum currently being developed by the Office of the Secretary of Defense for “Managing Health and Safety Risks in Housing.”

Additionally, the Acting Assistant Secretary stated that CNIC released additional guidance in May 2019 for installation housing officials to standardize how health and safety issues are tracked in the eMH system. In September 2019, CNIC launched an inspector training course to improve its procedures to assess health and safety hazards. The CNIC and Marine Corps Installation Command are also developing policies for the management of health and safety hazard in Navy and Marine Corps military family housing. Furthermore, the Acting Assistant Secretary stated that there is a multi-service effort underway to develop an environmental health and safety module in eMH to track health and safety hazards in military housing.

The Acting Assistant Secretary stated that the Department of the Navy will develop health and safety policies to address the deficiencies at the Navy and Marine Corps installations discussed in this report with an implementation date of mid-2020. Finally, the CNIC and Commander, Marine Corps Installations Command will develop and issue plans of action and milestones with specific actions to correct deficiencies in lead-based paint, asbestos-containing material, radon, and health and safety hazard management, including oversight, discussed in this report.

### ***Our Response***

Comments from the Acting Assistant Secretary of the Navy for Energy, Installations and Environment addressed the recommendation; therefore, the recommendation is resolved but will remain open. We will close the recommendation once the DoD updates policies for health and safety hazard management and we verify that the Navy took actions to fully address the recommendation.

### ***Recommendation 4***

**We recommend that the Office of the Assistant Secretary of the Air Force for Installations, Environment and Energy:**

- a. Update Service policies to align with revisions to DoD policy for health and safety hazard management;**

### ***Assistant Secretary of the Air Force for Installations, Environment and Energy Comments***

The Principal Deputy Assistant Secretary of the Air Force for Installations, Environment and Energy, responding for the Assistant Secretary of the Air Force for Installations, Environment and Energy, agreed with the recommendation to update Service policies to align with revisions to DoD policy. The Principal Deputy Assistant Secretary stated that the Air Force will establish AFI 32-6000 by March 2020 to consolidate existing Air Force housing policies and to update existing policies to better address the requirement to fully disclose health and safety hazards to residents. The Air Force will make additional policy revisions, as applicable, based on updates to DoD policy in DoDM 4165.63.

### ***Our Response***

Comments from the Principal Deputy Assistant Secretary addressed the recommendation to update Service policies to align with revisions to DoD policy; therefore, the recommendation is resolved but will remain open. We obtained AFI 32-6000, published March 18, 2020, from the Air Force publications website. Although AFI 32-6000 addressed some of the deficiencies discussed in this report, the intent of the recommendation is for the Services to incorporate future updates to DoD policies for health and safety hazard management. We will close the recommendation to update Service policies to align with revisions to DoD policy, once the DoD updates policies for health and safety hazard management and we verify that the Air Force took action to fully address the recommendation.

- b. Develop oversight policies and procedures to assess the management of health and safety hazards in GO-GC military family housing; and**

### ***Assistant Secretary of the Air Force for Installations, Environment and Energy Comments***

The Principal Deputy Assistant Secretary agreed with the recommendation to develop oversight policies and procedures. The Principal Deputy Assistant Secretary stated that the Air Force will update the Air Force Management Internal Control Toolset checklists related to Air Force housing to reflect the requirements in AFI 32-6000.

### ***Our Response***

Comments from the Principal Deputy Assistant Secretary partially addressed the recommendation to develop oversight policies and procedures to assess the management of health and safety hazards; therefore, the recommendation is resolved but will remain open. While the comments state that the Air Force agrees

to conduct corrective action, the comments did not (1) identify which updates will be included in the Air Force Management Internal Control Toolset checklist(s), (2) clearly describe how the updates will address the health and safety hazard management deficiencies discussed in this report, and (3) identify a timeline to resolve our recommendation. We do not require any additional comments from the Air Force to this report. We will close the recommendation once we verify that the Air Force took action to fully address the recommendation.

- c. Direct installation officials to correct the specific lead-based paint, asbestos-containing material, radon, fire safety, and drinking water quality health and safety hazard management deficiencies discussed in this report.**

### ***Assistant Secretary of the Air Force for Installations, Environment and Energy Comments***

The Principal Deputy Assistant Secretary partially agreed with the recommendation to direct installation officials to correct the specific health and safety hazard management deficiencies discussed in this report. The Principal Deputy Assistant Secretary stated that the Secretary of the Air Force for Installations, Environment and Energy will partner with various Air Force offices to develop and issue clarifying guidance to installation officials to address management deficiencies and standardize implementation of policies at Air Force installations. Additionally, the Air Force will correct deficiencies in accordance with the most current DoD and Air Force policies and will apply Final Governing Standards at OCONUS Air Force installations.

### ***Our Response***

Comments from the Principal Deputy Assistant Secretary partially address the recommendation to direct installation officials to correct health and safety hazard management deficiencies discussed in this report; therefore, the recommendation is resolved but will remain open. While the comments state that the Air Force will accomplish deficiency corrections, the comments did not identify what actions the Air Force will take and did not identify a timeline to resolve our recommendation. We do not require any additional comments from the Air Force to this report. We will close the recommendation once we verify that the Air Force took action to fully address the recommendation.



## Appendix A

---

### Scope and Methodology

We conducted this evaluation from November 2018 through February 2020 in accordance with the Council of Inspectors General on Integrity and Efficiency “Quality Standards for Inspection and Evaluation,” published in January 2012. Those standards require that we adequately plan the evaluation to ensure that objectives are met and that we perform the evaluation to obtain sufficient, competent, and relevant evidence to support the findings, conclusions, and recommendations. We believe that the evidence obtained was sufficient, competent, and relevant to lead a reasonable person to sustain the findings, conclusions, and recommendations.

To accomplish the objectives in this report, we obtained and reviewed DoD, Service, and installation-level policies and procedures to identify, track, and mitigate health and safety hazards in GO-GC military family housing. We also reviewed and analyzed documentation related to DoD and Military Service policies and procedures for compliance with Federal health and safety requirements. We used guidance laid out by the U.S. Department of Housing and Urban Development to determine housing management best practices and to develop our selection of health and safety hazards for evaluation. We interviewed DoD officials and performed evaluations at eight judgmentally-selected military installations. We visited and visually assessed a non-statistical sample of individual GO-GC military family housing units at each of the eight military installations. We also collected documentary evidence from Service officials and each of the eight military installations.

### ***Criteria***

We reviewed criteria from Federal laws and regulations; the U.S. Department of Housing and Urban Development; the U.S. Environmental Protection Agency; the National Fire Protection Association; DoD directives, instructions, manuals, and policy memorandums; Country-Specific Final Governing Standards; Unified Facilities Criteria; Military Service orders, directives, instructions, and manuals; and installation management plans. The criteria listed below were most pertinent to the analysis and conclusions in this report.

### ***Laws, Regulations, and Guidance***

- “Toxic Substances Control Act,” sections 2601–2692, title 15, United States Code, 2017
- “Lead-Based Paint Poisoning Prevention Act,” sections 4801–4846, title 42, United States Code, 1971
- “Clean Air Act,” section 7401, title 42, United States Code, 1970
- “Consumer Product Safety Act,” section 2051, title 15, United States Code, 1972
- Title 24 Code of Federal Regulations section 35 (2018)
- Title 40 Code of Federal Regulations section 745 (2018)
- Title 40 Code of Federal Regulations section 763 (2011)
- National Fire Protection Association “NFPA 101: Life Safety Code,” 2012 Edition (superseded 2018 – requirements unchanged)
- Healthy Homes Program Guidance Manual, U.S. Department of Housing and Urban Development, July 19, 2012
- “Help Yourself to a Healthy Home” booklet, U.S. Department of Housing and Urban Development
- HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing, Second Edition, July 2012
- “Protect Your Family From Lead in Your Home” pamphlet, June 2017, jointly published by United States Environmental Protection Agency, United States Consumer Product Safety Commission, and United States Department of Housing and Urban Development
- “Guidance for Controlling Asbestos-Containing Materials in Buildings,” United States Environmental Protection Agency, 560/5-85-024, June 1985

### ***DoD Directives, Instruction, Manuals, and Policy Memorandums***

- DoD Directive 4715.1E, “Environment, Safety, and Occupational Health,” March 19, 2005, (Incorporating Change 1, August 31, 2018)
- DoD Instruction 4165.63, “DoD Housing,” July 21, 2008, (Incorporating Change 2, August 31, 2018)
- DoD Instruction 4715.06, “Environmental Compliance in the United States,” May 4, 2015, (Incorporating Change 1, August 31, 2018)
- DoD Instruction 4715.05, “Environmental Compliance at Installations Outside the United States,” November 1, 2013, (Incorporating Change 2, August 31, 2018)

- DoD Instruction 6055.01, “DoD Safety and Occupational Health (SOH) Program,” October 14, 2014, (Incorporating Change 1, August 31, 2018)
- DoD Manual 4165.63, “DoD Housing Management,” October 28, 2010, (Incorporating Change 2, August 31, 2018)
- DoD Guidance 4715.05-G, “Overseas Environmental Baseline Guidance Document (OEBGD),” May 1, 2007
- Under Secretary of Defense, Acquisition, Technology and Logistics Memorandum, “Facility Sustainment and Recapitalization Policy,” April 29, 2014
- Under Secretary of Defense, Acquisition, Technology and Logistics Memorandum, “Standardizing Facility Condition Assessments,” September 10, 2013

### ***Country-Specific Final Governing Standards***

- Commander Navy Region Southeast, DoD Lead Environmental Component For Cuba, “Environmental Final Governing Standards: Cuba,” October 2016
- United States Army Installation Management Command Europe Region, “Environmental Final Governing Standards: Germany,” July 2017
- United States Forces Japan, “Japan Environmental Governing Standards,” April 2018
- United States Forces Korea Regulation 201-1, “Environmental Governing Standards,” June 18, 2012

### ***Unified Facilities Criteria***

- Unified Facilities Criteria 3-601-02, “Operation and Maintenance: Inspection, Testing, and Maintenance of Fire Protection Systems,” September 8, 2010
- Unified Facilities Criteria 4-711-01, “Family Housing,” August 10, 2018

### ***Military Service Standards and Instructions***

- Army Regulation 1-201, “Army Inspection Policy,” February 25, 2015
- Army Regulation 200-1, “Environmental Protection and Enhancement,” December 13, 2007
- Army Regulation 210-14, “Installation Status Report Program,” June 11, 2019
- Army Regulation 420-1, “Facilities Engineering Army Facilities Management,” February 12, 2008, Rapid Action Revision August 24, 2012

- Army in Europe Supplement 1 to AR 420-1, "Army Facilities Management," November 20, 2008
- U.S. Army Corps of Engineers, Public Works Technical Bulletin 200-1-144, "Toxics Management," October 30, 2014
- Chief of Naval Operations Instruction 5009.1, "Responsibility for Navy Housing and Lodging Programs," December 26, 2007
- Secretary of the Navy Instruction 5040.3B, "Inspections Within the Department of the Navy," October 31, 2019
- Commander, Navy Installations Command Instruction 5040.3 "Commander, Navy Installations Command Inspection Program," December 3, 2007
- Chief of Naval Operations Instruction 5090.1D, "Environmental Readiness Program," January 10, 2014
- Commander, Navy Installations Command Instruction 11103.4A "Responsibility for Housing Programs in the Navy," January 31, 2014
- Commander, Navy Installations Command Instruction Manual 11103.3, "Navy Owned and Leased Family Housing Eligibility, Assignment and Termination Criteria," January 23, 2019
- Marine Corps Order 5040.6J, "Inspector General of the Marine Corps Inspection Program," July 11, 2019
- Marine Corps Order 11000.22, "Marine Corps Bachelor and Family Housing Management," January 22, 2018
- Air Force Instruction 32-1052, "Facility Asbestos Management," December 24, 2014
- Air Force Policy Directive 32-60, "Housing," March 4, 2015
- Air Force Instruction 32-6001, "Family Housing Management," August 21, 2006, certified current October 7, 2013, (Incorporating Change5, September 3, 2015); corrective actions applied on May 31, 2016
- Air Force Instruction 32-6002, "Family Housing Planning, Programming, Design, and Construction," November 20, 2015
- Air Force Policy Directive 32-70, "Environmental Considerations in Air Force Programs and Activities," July 30, 2018
- Air Force Instruction 33-360, "Publications and Forms Management," December 1, 2015
- Air Force Instruction 48-148, "Ionizing Radiation Protection," November 20, 2014
- Air Force Instruction 90-201, "Air Force Inspection System," November 20, 2018

- Air Force Policy Memo, “Air Force Policy and Guidance on Lead-Based Paint in Facilities,” May 24, 1993
- Air Force Family Housing Guide for Planning, Programming, Design, and Construction, August 2004

### ***Interviews with Officials***

We met and interviewed individuals at the following organizations.

- Office of the Assistant Secretary of Defense (Sustainment)
- Office of the Assistant Secretary of Defense (Readiness)
- Office of the Assistant Secretary of the Army (Installations, Energy and Environment)
- Office of the Deputy Chief of Staff, G-9 (formerly known as the Assistant Chief of Staff for Installation Management)
- Office of the Assistant Secretary of the Navy (Energy, Installations and Environment)
- Commander, Navy Installations Command
- Naval Facilities Engineering Command
- Office of the Deputy Assistant Secretary of the Air Force (Installations)
- Air Force Materiel Command, Air Force Civil Engineer Center
- Navy and Marine Corps Public Health Center
- Enterprise Military Housing (eMH) System Management
- Installation Public Works Departments/Civil Engineering
- Installation health/medical officials

### ***Site Visits***

We conducted site visits in February, May, and June 2019. We interviewed installation officials, including housing management and maintenance, environmental, engineering, safety, and health personnel. We also interviewed maintenance contract workers employed by the companies contracted to maintain GO-GC military family housing on military installations. Additionally, we visited and visually assessed individual GO-GC military family housing units and interacted with residents at each installation.

### *Installation Selection Criteria*

We identified approximately 38,000 GO-GC military family housing units at military installations worldwide. We selected a non-statistical sample of eight military installations. These eight military installations host approximately 15,525 (41 percent) GO-GC family housing units worldwide. We selected the following military installations.

1. U.S. Army Garrison Humphreys, Republic of Korea
2. U.S. Army Garrison Wiesbaden, Germany
3. Naval Station Guantanamo Bay, Cuba
4. Commander Fleet Activities Yokosuka, Japan
5. Marine Corps Air Station Iwakuni, Japan
6. Kadena Air Base, Japan
7. Spangdahlem Air Base, Germany
8. Wright-Patterson Air Force Base, Dayton, Ohio<sup>79</sup>

We made our non-statistical site selection using the following considerations:

- we sampled installations from the Army, Navy, Marine Corps, and Air Force;
- we evaluated two sites per Service;<sup>80</sup>
- we selected sites which represented one large and one small/medium-sized site per Service, with regard to the number of GO-GC military family housing units on the installation;
- we selected eight military installations for site visits which represented four different combatant command areas of responsibility;
- we considered the age of the GO-GC military family housing units to account for certain health and safety hazards more prevalent in older construction;
- we considered installations suggested by the Services and used evidence provided to us by the Services; and
- we reviewed available DoD OIG hotline allegations and historical information.

---

<sup>79</sup> The evaluation team also visited U.S. Army Dugway Proving Ground; however, in an effort to use the same scope and methodology to evaluate the military installations and because the scope at that location was limited to lead-based paint hazards, we did not include that installation in our evaluation.

<sup>80</sup> The Marine Corps has very few GO-GC military family housing units. Therefore, we evaluated only one Marine Corps GO-GC military family housing site. To round out our selection of sites, we evaluated an additional Air Force site CONUS.

### ***Housing Units Selection Criteria***

We selected a non-statistical sample of GO-GC military family housing units per installation for onsite visits and visual assessment. We performed a random sample of GO-GC military family housing units which represented every neighborhood, unit type (such as duplex), year of construction, military service rank assigned to the home, and condition rating (if available).<sup>81</sup> In total, the evaluation team visited and visually assessed 187 GO-GC military family housing units.

At each GO-GC military family housing unit, we documented observations on a checklist. We created the checklist to account for the health and safety hazards evaluated and to account for any other complaints noted by residents. Also, the evaluation team took photographs where appropriate and allowed by residents.

### ***Document Collection***

We collected and reviewed the following types of documents.

- Facility inventories (lists of GO-GC military family housing units)
- Maintenance contracts
- Facility inspection reports
- Change-of-Occupancy walkthrough checklists
- Satisfaction surveys
- Renovations and maintenance records
- Personnel qualifications
- Complaints/maintenance requests and reports
- Resident handbooks and housing assignment documentation
- Installation health and safety hazard management plans
- Installation health and safety hazard testing results
- Installation health and safety hazard inventories
- Installation communications of health and safety hazard issues
- Installation standard operating procedures
- Installation internal health and safety reviews

---

<sup>81</sup> Each Service assesses the condition of their infrastructure, including GO-GC military family housing units. These assessments, while similar in intent, vary across the Services. In general, quality ratings of 1-4 or numerical ratings between 1 and 100 are used to reflect the condition of the building structure and its systems.

### ***Use of Computer-Processed Data***

We used computer-processed data for this evaluation. Specifically, we used lists of GO-GC military family housing units provided by the Deputy Assistant Secretary of Defense for Infrastructure, Office of the Assistant Secretary of Defense for Sustainment taken from the Real Property Asset Database and lists of GO-GC military family housing units provided by the Enterprise Military Housing (eMH) System Manager taken from the Enterprise Military Housing database.<sup>82</sup>

We compared these lists, addressed discrepancies with Service officials, and compiled sufficiently reliable lists of GO-GC military family housing units.

From these compiled lists of GO-GC military family housing units, we selected a non-statistical sample of installations for our review. We obtained additional lists of GO-GC military family housing units directly from installation officials in our sample and used them to further corroborate the Real Property Asset Database and eMH data. We determined that the information we obtained was sufficiently reliable to develop a sample selection of individual GO-GC military family housing units to evaluate, with physical walkthroughs to support our results.

### ***Use of Technical Assistance***

Members of the OIG Quantitative Methods Division provided technical assistance by discussing the appropriate parameters for our site selection and GO-GC military family housing unit visits and visual assessment.

---

<sup>82</sup> The Real Property Asset Database is a DoD-wide database of real property data annually compiled by the Office of the Secretary of Defense from the inventories of the Military Services and DoD's Washington Headquarters Services, which manages real property in the National Capital region. The DoD uses the Real Property Asset Database to report on the DoD's real property to Congress and other Federal agencies, such as the Office of Management and Budget and the General Services Administration to assist in managing Federal real property.

eMH is the DoD information management system and authoritative data source for DoD housing operations and inventory management.



## Appendix B

---

### Prior Coverage

During the last 5 years, the Government Accountability Office (GAO) and the DoD Office of Inspector General (OIG) issued nine reports related to military family housing.

Unrestricted GAO reports can be accessed at <http://www.gao.gov>. Unrestricted DoD OIG reports can be accessed at <http://www.dodig.mil/reports.html/>.

### GAO

Report No. GAO-20-281, “Military Housing: DOD Needs to Strengthen Oversight and Clarify Its Role in the Management of Privatized Housing,” March 26, 2020

The GAO determined that the DoD conducts some oversight of the physical condition of privatized housing, but the scope of these oversight efforts has been limited. The DoD has not used reliable or consistent data to report on the condition of privatized housing. The GAO also found that military housing offices have not effectively communicated their role as a resource for service members experiencing challenges with privatized housing. Furthermore, the GAO determined that the DoD has made progress in developing and implementing initiatives intended to improve privatized housing; however, the DoD may face challenges with timeliness, resources, and the financial risk of improvement initiatives.

Report No. GAO-18-218, “Military Housing Privatization: DoD Should Take Steps to Improve Monitoring, Reporting, and Risk Assessment,” March 13, 2018

The GAO determined that the DoD has regularly assessed the financial condition of its privatized housing projects; however, it has not used consistent measures or consistently assessed future sustainment (that is, the ability to maintain the housing in good condition), or issued required reports to Congress in a timely manner.

### DoD OIG

Report No. DODIG-2017-118, “Followup Evaluation on DoD OIG Report No. DODIG-2014-121, ‘Military Housing Inspections–Japan,’ September 30, 2014,” September 8, 2017

This 2017 report followed up on the 2014 report. The 2014 report discussed the inspection of 15 military housing facilities in Japan and identified 1,057 deficiencies in fire protection, electrical systems, environmental health

and safety, and housing management, which posed a risk to the health, safety, and well-being of warfighters and their families. The prior report made various recommendations for corrective action. The followup evaluation, we determined that the Military Departments had partially implemented the recommendations from the prior report.

Report No. DODIG-2017-104, "Followup on DoD OIG Report No. DODIG-2015-013, "Military Housing Inspections–Republic of Korea," July 20, 2017

This 2017 report followed up on the 2014 report. The 2014 report discussed the inspection of 13 military installations in the Republic of Korea and identified 646 deficiencies for fire protection, electrical systems, environmental health and safety, and housing management, which posed a risk to the health, safety, and well-being of warfighters and their families. The prior report made various recommendations for corrective action. The followup evaluation, we determined that the Army and Air Force had partially implemented the recommendations from the prior report.

Report No. DODIG-2017-004, "Summary Report–Inspections of DoD Facilities and Military Housing and Audits of Base Operations and Support Services Contracts," October 14, 2016

This 2016 report summarized the results of six previous reports issued from July 2013 to July 2016 related to health and safety inspections of DoD facilities at various locations around the world, which documented 3,783 deficiencies in electrical system safety, fire protection systems, and environmental health and safety. During these inspections, 12 notices of concern were issued, detailing 319 critical deficiencies requiring immediate action at 24 of the 36 installations inspected. Deficiencies in electrical system safety, fire protection systems, and environmental health and safety were pervasive because of a lack of adequate preventative maintenance and inspections being performed at the installations.

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

The DoD OIG identified 389 deficiencies that could affect the health, safety, and well-being of warfighters and their families at three installations in the Southeastern region of the continental United States. These electrical system safety, fire protection, and environmental health and safety deficiencies resulted from improper installation, insufficient inspection, and inadequate maintenance of housing facilities.

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

The DoD OIG identified 316 deficiencies that could affect the health, safety, and well-being of warfighters and their families at both United States Army Garrison (USAG) Fort Belvoir and Joint Base Anacostia–Bolling. The majority of these electrical system safety, fire protection, and environmental health and safety deficiencies, in both accompanied and unaccompanied housing facilities, resulted from improper installation, insufficient inspection, and inadequate maintenance of housing facilities.

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

The DoD OIG identified 646 deficiencies that could affect the health, safety, and well-being of warfighters and their families at military housing in the Republic of Korea. These electrical system safety, fire protection, and environmental health and safety deficiencies resulted from insufficient inspection, maintenance, and repair of housing facilities.

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

The DoD OIG identified 1,057 deficiencies that could affect the health, safety, and well-being of warfighters and their families at military housing in Japan. These electrical system safety, fire protection, environmental health and safety, and housing management deficiencies resulted from insufficient inspection, maintenance, and repair of housing facilities.

## Appendix C

### EPA Lead-Based Paint Disclosure Certification and Acknowledgement Example

The EPA and HUD define lead-based paint disclosure as a three-part process that includes the distribution of a lead-based paint certification and acknowledgement, as shown in Figure 4.

Figure 4. EPA Lead-Based Paint Disclosure Certification and Acknowledgement Example

**Disclosure of Information on Lead-Based Paint and/or Lead-Based Paint Hazards**

**Lead Warning Statement**  
*Housing built before 1978 may contain lead-based paint. Lead from paint, paint chips, and dust can pose health hazards if not managed properly. Lead exposure is especially harmful to young children and pregnant women. Before renting pre-1978 housing, lessors must disclose the presence of known lead-based paint and/or lead-based paint hazards in the dwelling. Lessees must also receive a federally approved pamphlet on lead poisoning prevention.*

**Lessor's Disclosure**

(a) Presence of lead-based paint and/or lead-based paint hazards (check (i) or (ii) below):

(i) \_\_\_\_\_ Known lead-based paint and/or lead-based paint hazards are present in the housing (explain).

\_\_\_\_\_

\_\_\_\_\_

(ii) \_\_\_\_\_ Lessor has no knowledge of lead-based paint and/or lead-based paint hazards in the housing.

(b) Records and reports available to the lessor (check (i) or (ii) below):

(i) \_\_\_\_\_ Lessor has provided the lessee with all available records and reports pertaining to lead-based paint and/or lead-based paint hazards in the housing (list documents below).

\_\_\_\_\_

\_\_\_\_\_

(ii) \_\_\_\_\_ Lessor has no reports or records pertaining to lead-based paint and/or lead-based paint hazards in the housing.

**Lessee's Acknowledgment (initial)**

(c) \_\_\_\_\_ Lessee has received copies of all information listed above.

(d) \_\_\_\_\_ Lessee has received the pamphlet *Protect Your Family from Lead in Your Home*.

**Agent's Acknowledgment (initial)**

(e) \_\_\_\_\_ Agent has informed the lessor of the lessor's obligations under 42 U.S.C. 4852d and is aware of his/her responsibility to ensure compliance.

**Certification of Accuracy**

The following parties have reviewed the information above and certify, to the best of their knowledge, that the information they have provided is true and accurate.

Lessor	Date	Lessor	Date
Lessee	Date	Lessee	Date
Agent	Date	Agent	Date

Source: Example EPA Lessor's Disclosure of Information on Lead-Based Paint and/or Lead-Based Paint Hazards: <https://www.epa.gov/lead/lessors-disclosure-information-lead-based-paint-andor-lead-based-paint-hazards>.

# Management Comments

## Under Secretary of Defense for Acquisition and Sustainment



SUSTAINMENT

ASSISTANT SECRETARY OF DEFENSE

3500 DEFENSE PENTAGON  
WASHINGTON, DC 20301-3500

MAR 27 2020

MEMORANDUM FOR PROGRAM DIRECTOR, RESEARCH & ENGINEERING DIVISION,  
OFFICE OF THE DEPARTMENT OF DEFENSE INSPECTOR GENERAL

SUBJECT: Review of Draft Inspector General Report "Evaluation of the DoD's Management of Health and Safety Hazards in Government-Owned and Government-Controlled Military Family Housing," Project Number D2019-D000PT-0052.00

I am providing the response to the recommendation for the Under Secretary of Defense for Acquisition and Sustainment contained in the subject report.

I appreciate the DoDIG's review of the Department's government-owned housing for health and safety hazards. This assessment is a companion to GAO's assessment of privatized housing and together they provide a comprehensive status of DoD's housing management efforts.

The DoDIG's draft report recommends "...that the Under Secretary of Defense for Acquisition and Sustainment and the Under Secretary of Defense for Personnel and Readiness collaboratively establish or revise appropriate DoD policy to address health and safety hazards including lead-based paint, asbestos-containing material, radon, fire and electrical safety, drinking water quality, window fall prevention, mold, carbon monoxide, and pest management in military family housing to manage health, safety, and environmental risks to acceptable levels for military family housing residents."

I partially concur with this recommendation. I agree that OUSD(A&S) and OUSD(P&R) should review existing DoD policies and guidance to ensure they "address health and safety hazards including lead-based paint, asbestos-containing material, radon, fire and electrical safety, drinking water quality, window fall prevention, mold, carbon monoxide, and pest management—in military family housing to manage health, safety, and environmental risks to acceptable levels for military family housing residents." However, I disagree that DoD should establish policies in areas where there is no Federal standard (e.g., mold). DoD is not the regulatory agency responsible for setting standards for environmental, health or safety hazards and therefore cannot get ahead of other Federal agencies on those topics.

My point of contact is [REDACTED]

  
Peter Potochney  
Acting

## Under Secretary of Defense for Personnel and Readiness



PERSONNEL AND  
READINESS

OFFICE OF THE UNDER SECRETARY OF DEFENSE  
4000 DEFENSE PENTAGON  
WASHINGTON, D.C. 20301-4000

MAK 20 2020

MEMORANDUM FOR ASSISTANT INSPECTOR GENERAL FOR EVALUATIONS,  
SPACE, INTELLIGENCE, ENGINEERING AND OVERSIGHT  
DIRECTORATE

SUBJECT: Review of Draft Inspector General Report Recommendations: "Evaluation of the DoD's Management of Health and Safety Hazards in Government-Owned and Government-Controlled Military Family Housing"

This memorandum responds to your recommendation: "We recommend that the Under Secretary of Defense for Acquisition and Sustainment and the Under Secretary of Defense for Personnel and Readiness collaboratively establish or revise appropriate DoD policy to address health and safety hazards—including lead-based paint, asbestos-containing material, radon, fire and electrical safety, drinking water quality, window fall prevention, mold, carbon monoxide, and pest management—in military family housing to manage health, safety, and environmental risks to acceptable levels for military family housing residents."

We partially concur with this recommendation. We will provide safety and occupational and environmental health subject matter expert support to the Under Secretary of Defense for Acquisition and Sustainment in reviewing policy under their responsibility as the principal staff assistant for Department of Defense Instruction (DoDI) 4165.63, "DoD Housing" and DoDIs for environmental management. We will issue policy that we determine fills a policy gap and is within the scope of DoDI 6055.01, "DoD Safety and Occupational Health (SOH) Program."

A handwritten signature in black ink, appearing to read "Alexis Lasselle Ross".

Alexis Lasselle Ross  
Performing the Duties of the Under Secretary of  
Defense for Personnel and Readiness

## Assistant Secretary of the Army for Installations, Energy and Environment



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

SAIE-IHP

MAR 06 2020

MEMORANDUM FOR Office of the Inspector General, Department of Defense, 4800 Mark Center Drive, Alexandria, VA 22350-1500

SUBJECT: Army Response to "Evaluation of the DoD's Management of Health and Safety Hazards in Government-Owned and Government-Controlled Military Family Housing (Project No. D2019-D000PT-0052.000)" Draft Report

1. The Army reviewed the Department of Defense Inspector General's (DoD IG) "Evaluation of the DoD's Management of Health and Safety Hazards in Government-Owned and Government-Controlled Military Family Housing" draft report.
2. The Army concurs with the recommendation (Recommendation 2a) to update our policies to align with the new or revised DoD health and safety hazard management policies. We anticipate accomplishing this within three months after the DoD publishes their policies.
3. The Army concurs with the recommendation (Recommendation 2b) to develop oversight policies and procedures to assess the management of health and safety hazards in Government Owned-Government Controlled Military Family Housing. The Army's goal is to have these policies and procedures established by 31 December 2020.
4. The Army concurs with the recommendation (Recommendation 2c) to direct installation officials to correct the deficiencies noted in the report at both U.S. Army Garrison (USAG) Humphreys and USAG Wiesbaden. The Army requests that the DoD IG provide a list of all deficiencies noted by housing unit at both locations.
5. The Army suggested changes to the draft report are enclosed.

Encl.

A handwritten signature in black ink, appearing to read "Paul D. Cramer".

PAUL D. CRAMER  
Deputy Assistant Secretary of the Army  
(Installations, Housing and Partnerships)

CF:  
Office of the Under Secretary of Defense for Acquisition and Sustainment  
Office of the Deputy Chief of Staff, G-9  
U.S. Army Materiel Command

## Assistant Secretary of the Navy for Energy, Installations and Environment



DEPARTMENT OF THE NAVY  
THE ASSISTANT SECRETARY OF THE NAVY  
(ENERGY, INSTALLATIONS AND ENVIRONMENT)  
1000 NAVY PENTAGON  
WASHINGTON DC 20350-1000

MAR 12 2020

MEMORANDUM FOR INSPECTOR GENERAL OF THE DEPARTMENT OF DEFENSE

SUBJECT: Department of the Navy Response to the Draft Department of Defense Office of Inspector General Report, "Evaluation of the Department of Defense Management of Health and Safety Hazards in Government-Owned and Government-Controlled Military Family Housing"

Reference: (a) Project Number D2019-D000PT-0052.000, February 21, 2020

Below are the Department of the Navy's (DON) responses to the recommendations made by your office in reference (a):


- **Recommendation 3a:** "Update Service policies to align with revisions to Department of Defense (DoD) policy for health and safety hazard management."
  - **DON Response:** Concur. The DON is collaborating with the Office of the Secretary of Defense (OSD) to develop a Directive-type memorandum, "Managing Health and Safety Risks in Housing." Once OSD finalizes and releases the memorandum, the Navy and Marine Corps will implement all requirements, including policy updates. The DON will align its policies with updated DoD issuances and policies.
- **Recommendation 3b:** "Develop oversight policies and procedures to assess the management of health and safety hazards in Government-Owned and Government-Controlled (GO-GC) military family housing (MFH)."
  - **DON Response:** Concur. The DON has taken steps to develop and strengthen oversight policies and procedures to assess the management of health and safety hazards in Navy and Marine Corps family housing for example. In May 2019, Commander, Navy Installations Command (CNIC), released additional guidance for housing offices to standardize how health and safety issues in housing are tracked in the Enterprise Military Housing (eMH) system. In September 2019, CNIC launched the Inspector Training course, in part to improve its procedure to assess health and safety hazards. CNIC & MCICO are currently developing policy for Health and Safety management in Navy Family Housing. There is a multi-service effort underway also to develop an Environmental Health and Safety module in eMH to track health and safety hazards in military housing.
- **Recommendation 3c:** "Direct installation officials to correct the specific lead-based paint, asbestos-containing material, and radon health and safety hazard management deficiencies discussed in this report."



## Assistant Secretary of the Navy for Energy, Installations and Environment (cont'd)

- **DON Response:** Concur. The DON is working to minimize or eliminate future resident exposure to described health hazards. The DON will develop Health and Safety policy to address these deficiencies with an implementation date of mid-2020. Plans of Action and Milestones (POAMs) will be developed by CNIC and the Commander, Marine Corps Installations Command (MCICOM) to correct the lead-based paint (LBP), asbestos-containing material, radon, and health and safety hazard management deficiencies discussed in reference (a). Future actions include:
  - LBP – Instituting interim controls, including maintenance and re-evaluation activities or full abatement, and distributing copies of available records or reports pertaining to LBP for each housing unit.
  - Asbestos – Establishing detailed records of evaluations conducted for asbestos-containing material identification, location, and condition of asbestos-containing material, and control methods taken to prevent resident or building occupant exposure to asbestos.
  - Radon – Establish or improve radon hazard management programs at all Navy and Marine Corps installations. Improve control of radon hazards by performing mitigation, maintaining mitigation systems, or conducting long-term monitoring and testing.
  - Management – Update safety checklists to include verification of all asbestos-containing and lead hazard management programs. Update family housing checklists to include disclosure of all known hazards to the resident.

My point of contact for this matter is [REDACTED]

  
Lucian Niemeyer  
Acting

cc:  
Commander, Navy Installations Command  
Commander, Marine Corps Installations Command

## Assistant Secretary of the Air Force for Installations, Environment and Energy



DEPARTMENT OF THE AIR FORCE  
WASHINGTON, DC 20330-1000

OFFICE OF THE ASSISTANT SECRETARY

18 March 2020

MEMORANDUM FOR DEPARTMENT OF DEFENSE INSPECTOR GENERAL

FROM: SAF/IE  
1665 Air Force Pentagon  
Washington, DC 20330-1665

SUBJECT: Air Force Response to DoD Office of Inspector General Draft Report, "Evaluation of the DoD's Management of Health and Safety Hazards in Government-Owned and Government-Controlled Military Family Housing (Project No. D2019-D000PT-0052.000)"

1. This is the Department of the Air Force response to the DoDIG Draft Report "Evaluation of the DoD's Management of Health and Safety Hazards in Government-Owned and Government-Controlled Military Family Housing (Project No. D2019-D000PT-0052.000)." The SAF/IE concurs with the report as written, and welcomes the opportunity to improve the management of health and safety hazards in Government Owned-Government Controlled (GO-GC) military family housing.
2. The Deputy Chief of Staff for Logistics, Engineering and Force Protection, Director of Civil Engineers (AF/A4C), in coordination with Assistant Secretary of the Air Force Installations, Energy and Environment (SAF/IE) and Air Force Installation and Mission Support Center Commander (AFIMSC/CC) will correct issues identified in this report, and develop and implement a corrective action plan outlined in the following recommendations:

**RECOMMENDATION 4:** We recommend that the Office of the Assistant Secretary of the Air Force for Installations, Environment and Energy:

**RECOMMENDATION 4a:** Update Service policies to align with revisions to DOD policy for health and safety hazard management;

**AIR FORCE RESPONSE:** Concur. The rewrite of existing AF housing policy into AFI 32-6000 incorporated language to better address the requirement to fully disclose environmental hazards to residents. AFI 32-6000 is scheduled to be published in March 2020. The Air Force will make additional revisions, as applicable, based on updates to DoD policy in DoDM 4165.63.

**RECOMMENDATION 4b:** Develop oversight policies and procedures to assess the management of health and safety hazard in GO-GC military family housing;

## Assistant Secretary of the Air Force for Installations, Environment and Energy (cont'd)

**AIR FORCE RESPONSE:** Concur. The Air Force is updating Air Force Management Internal Controls checklist items related to AF Housing to reflect changes in AFI 32-6000 resulting from other AF Inspector General, Government Accountability Office, and DoD IG reports. At the time of the inspection, the Air Force policy governing oversight of health and safety management in GO-GC military family housing was consistent with DoD policy. Air Force policy will continue to follow DoD guidance and policy.

**RECOMMENDATION 4c:** Direct installation officials to correct the specific lead-based paint, asbestos-containing material, radon, fire safety, and drinking water quality health and safety hazard management deficiencies discussed in this report.

**AIR FORCE RESPONSE:** Partially Concur. SAF/IE will partner with AF/A4C and the AFIMSC/CC to develop and issue clarifying guidance to the field to address program management deficiencies and standardize implementation across the portfolio. At the time of the inspection, the Air Force policy was consistent with DoD policy. While the inspection identified important issues and shortcomings, it is important to note that systemic deficiencies were noted within three of the nine health and safety categories. The report identified no deficiencies in the management of electrical, window fall prevention, mold, carbon monoxide, and pest hazards. The Air Force will accomplish deficiency corrections in accordance with the most current DoD guidance and Air Force policy, and will apply Final Governing Standards of the OCONUS locations. Developing and caring for our people and their families is an enduring imperative. We remain committed to providing safe homes for Service members and their families.

3. The AF/A4C point of contact is [REDACTED]

MILLER.JENNIFER  
.LYNN. [REDACTED]

Digitally signed by  
MILLER.JENNIFER.LYNN [REDACTED]  
Date: 2020.03.19 10:56:05 -0400

JENNIFER L. MILLER, SES  
Principal Deputy Assistant Secretary of the Air Force  
(Installations, Environment, and Energy)

## Acronyms and Abbreviations

---

<b>AB</b>	Air Base
<b>AFB</b>	Air Force Base
<b>AFI</b>	Air Force Instruction
<b>AR</b>	Army Regulation
<b>CFA</b>	Commander Fleet Activities
<b>CNIC</b>	Commander, Navy Installations Command
<b>CONUS</b>	Continental United States
<b>DoDD</b>	Department of Defense Directive
<b>DoDI</b>	Department of Defense Instruction
<b>DoDM</b>	Department of Defense Manual
<b>eMH</b>	Enterprise Military Housing
<b>EPA</b>	U.S. Environmental Protection Agency
<b>FGS</b>	Final Governing Standards
<b>GO-GC</b>	Government-Owned/Government-Controlled
<b>HUD</b>	U.S. Department of Housing and Urban Development
<b>MCAS</b>	Marine Corps Air Station
<b>MCO</b>	Marine Corps Order
<b>NAVSTA</b>	Naval Station
<b>OCONUS</b>	Outside the Continental United States
<b>OEBGD</b>	Overseas Environmental Baseline Guidance Document
<b>OIG</b>	Office of Inspector General
<b>OPNAVINST</b>	Office of the Chief of Naval Operations Instruction
<b>PWTB</b>	Public Works Technical Bulletin
<b>RPC</b>	Radon Potential Category
<b>SECNAVINST</b>	Secretary of the Navy Instruction
<b>TSCA</b>	Toxic Substances Control Act
<b>UFC</b>	Unified Facilities Criteria
<b>USAG</b>	United States Army Garrison
<b>USD(A&amp;S)</b>	Under Secretary of Defense for Acquisition and Sustainment
<b>USD(P&amp;R)</b>	Under Secretary of Defense for Personnel and Readiness

## Glossary

---

**Asbestos.** Asbestos is a mineral fiber that occurs in rock and soil. Because of its fiber strength and heat resistance, asbestos has been used in a variety of building construction materials for insulation and as a fire retardant. Asbestos has also been used in a wide range of building materials, including roofing shingles, ceiling and floor tiles, paper products, and asbestos cement products. Asbestos fibers may be released into the air during product use, demolition work, building or home maintenance, repair, and remodeling. Disturbed asbestos-containing materials can become airborne, posing a significant risk to human health if breathed in by someone not wearing protective respiratory equipment. Three major health effects associated with asbestos exposure are lung cancer, mesothelioma, and asbestosis.

**Carbon Monoxide.** Carbon monoxide is an odorless, colorless, and toxic gas that is released when something is burned. The greatest sources of carbon monoxide to outdoor air are cars, trucks and other vehicles or machinery that burn fossil fuels. A variety household items such as unvented kerosene and gas space heaters, leaking chimneys and furnaces, and gas stoves also release carbon monoxide, affecting air quality indoors. The effects of carbon monoxide exposure can vary greatly from person to person depending on age, overall health, and the concentration and length of exposure. Exposure to low concentration can cause fatigue and chest pain. Exposure to moderate concentration can cause angina, impaired vision, and reduced brain function. Exposure to higher concentrations can cause headaches, dizziness, confusion, nausea, flu-like symptoms, and even fatality.

**Drinking Water Quality.** Drinking water quality refers to the chemical, physical, biological, and radiological characteristics of water. It is most frequently used by reference to a set of standards against which compliance, generally achieved through treatment of the water, can be assessed. The most common standards used to assess water quality relate to health of ecosystems, safety of human contact, and drinking water.

**Final Governing Standards.** The DoD establishes, maintains, and complies with final governing standards (FGS) to protect human health and the environment for those foreign countries identified by the Under Secretary of Defense for Acquisition, Technology, and Logistics. The final governing standards reconcile the requirements of applicable international agreements and applicable host-nation environmental standards in accordance with Executive Order 12088 and DoD 4715.05-G, also known and referred to as the “Overseas Environmental Baseline Guidance Document (OEBGD).”

**Fire Safety/Prevention.** Fire safety is also known as Fire Prevention. Fire safety measures include training, public education, plans reviews, surveys and inspections, engineering reviews, installation of fire detection and suppression equipment, and life safety code enforcement for preventing and minimizing consequences of a fire.

**Government-owned and Government-controlled (GO-GC) military family housing.** DoD-owned, -managed, and -maintained housing designated for personnel who have family members living with them. A family member is also referred to as a dependent. Families who are eligible to live in DoD family housing are comprised of a member of the Military Services (or DoD civilian or DoD-sponsored civilian) and their dependents.

**Hazard.** Any real or potential condition that can cause injury, illness, or death to personnel; damage to or loss of equipment or property; and mission degradation.

**HUD Healthy Home Program.** The U.S. Department of Housing and Urban Development (HUD), directed by Congress, launched the Healthy Homes Initiative to protect children and their families from housing-related health and safety hazards. HUD lays out steps they will take to advance the healthy homes agenda nationwide in the Healthy Homes Strategic plan.

The Healthy Homes Program addresses multiple childhood diseases and injuries in the home. The Initiative takes a comprehensive approach to these activities by focusing on housing-related hazards in a coordinated fashion, rather than addressing a single hazard at a time. The [Healthy Homes Initiative] builds upon HUD's successful Lead Hazard Control programs to expand its efforts to address a variety of environmental health and safety concerns including: mold, lead, allergens, asthma, carbon monoxide, home safety, pesticides, and radon.

**Lead.** Lead is a naturally occurring element, which can be poisonous if breathed in or otherwise consumed. Lead is particularly dangerous to children because their growing bodies absorb more lead than adults and their brains and nervous systems are more sensitive to the damaging effects of lead. Lead poisoning may cause problems with learning, growth, and behavior that last a lifetime.

**Lead-Based Paint.** Lead-based paint is defined as paint or other surface coatings that contain lead in amounts that exceed current regulations. Lead-based paint may still be present in many homes constructed before lead-based paint bans. Lead from deteriorating paint used both on interior and exterior surfaces and the dust created by deterioration or renovation work is one of the most common causes

of lead poisoning. Children are more likely to be exposed to lead from deteriorated lead-based paint because they often put their hands and other objects that can have lead dust on them into their mouths.

**Legionella.** Legionella bacteria can be found throughout the world, mostly in aquatic and moist environments (for example, in lakes, rivers, ground water, and soil). The bacteria can also grow in drinking water distribution systems and plumbing. People are exposed to Legionella when they inhale water droplets containing the bacteria. Most healthy people are not affected by the bacteria. However, the elderly and those with weakened immune systems may develop Legionellosis, which is a respiratory disease caused by the legionella bacteria. Serious infections can cause a severe pneumonia called Legionnaires' disease. The bacteria can also cause a less serious infection, called Pontiac fever, which resembles a mild case of the flu.

**Mitigate.** To reduce the risk from a hazard.

**Mold.** Molds are part of the natural environment. Molds play a part in nature by breaking down dead organic matter such as fallen leaves and dead trees. Molds become a problem indoors when mold spores land on a wet or damp spot and begin growing. Molds have the potential to cause health problems by producing allergens (substances that can cause allergic reactions) and irritants. Inhaling or touching mold or mold spores may cause allergic reactions, such as hay fever-type symptoms, sneezing, runny nose, red eyes, and skin rash, in sensitive individuals. Molds can also cause asthma attacks and can irritate the eyes, skin, nose, throat, and lungs of both mold-allergic and non-allergic people.

**Pest Management.** Integrated Pest Management is an effective and environmentally sensitive approach to manage pest damage by the most economical means and with the least possible hazard to people, property, and the environment. Pest management takes advantage of all appropriate pest management options including the judicious use of pesticides.

**Radon.** Radon is a naturally occurring, odorless, colorless radioactive gas released from rock, soil, or water. Radon poses a relatively low threat to human health outdoors; however, radon can accumulate to dangerous levels indoors. The health hazard associated with indoor radon is not from the radon gas itself, but from the products of its decay. Radon decays to form radioactive products which can enter the body via inhalation and remain in the lungs and continue to decay. The radiation released during this decay process damages lung tissue and may lead to lung cancer.

**Window Fall Prevention.** Measures, including installed safety devices, installed to prevent window falls.





# **Whistleblower Protection**

## **U.S. DEPARTMENT OF DEFENSE**

*Whistleblower Protection safeguards DoD employees against retaliation for protected disclosures that expose possible waste, fraud, and abuse in government programs. For more information, please visit the Whistleblower webpage at <http://www.dodig.mil/Components/Administrative-Investigations/Whistleblower-Reprisal-Investigations/Whistleblower-Reprisal/> or contact the Whistleblower Protection Coordinator at [Whistleblowerprotectioncoordinator@dodig.mil](mailto:Whistleblowerprotectioncoordinator@dodig.mil)*

## **For more information about DoD OIG reports or activities, please contact us:**

### **Congressional Liaison**

703.604.8324

### **Media Contact**

[public.affairs@dodig.mil](mailto:public.affairs@dodig.mil); 703.604.8324

### **DoD OIG Mailing Lists**

[www.dodig.mil/Mailing-Lists/](http://www.dodig.mil/Mailing-Lists/)

### **Twitter**

[www.twitter.com/DoD\\_IG](http://www.twitter.com/DoD_IG)

### **DoD Hotline**

[www.dodig.mil/hotline](http://www.dodig.mil/hotline)



DEPARTMENT OF DEFENSE | OFFICE OF INSPECTOR GENERAL

4800 Mark Center Drive  
Alexandria, Virginia 22350-1500  
[www.dodig.mil](http://www.dodig.mil)  
DoD Hotline 1.800.424.9098

