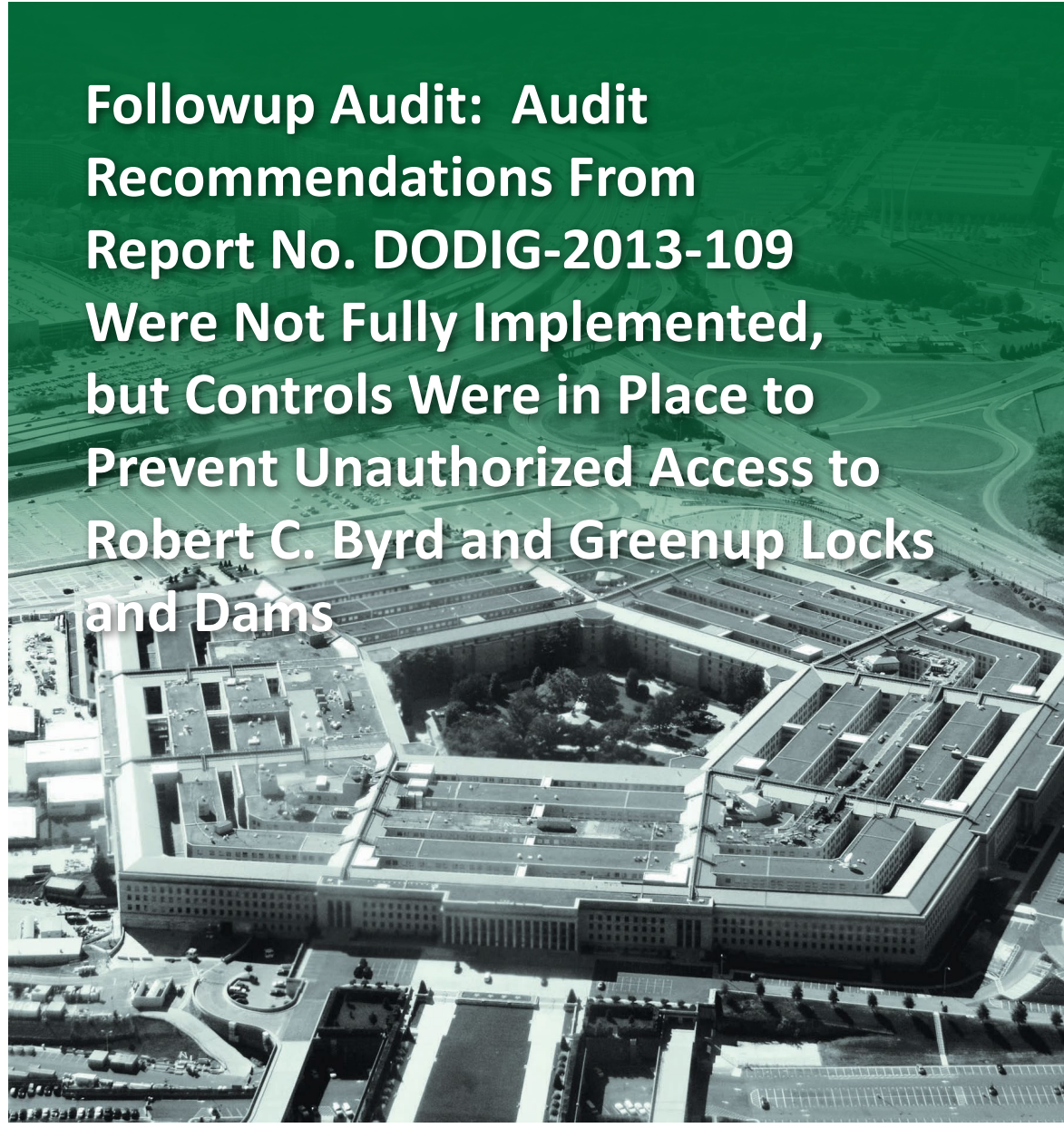


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INSPECTOR GENERAL

U.S. Department of Defense

MAY 10, 2016



Followup Audit: Audit Recommendations From Report No. DODIG-2013-109 Were Not Fully Implemented, but Controls Were in Place to Prevent Unauthorized Access to Robert C. Byrd and Greenup Locks and Dams

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Results in Brief

Followup Audit: Audit Recommendations From Report No. DODIG-2013-109 Were Not Fully Implemented, but Controls Were in Place to Prevent Unauthorized Access to Robert C. Byrd and Greenup Locks and Dams

May 10, 2016

Objective

We determined whether the Commander, U.S. Army Corps of Engineers (USACE), Huntington District, in coordination with the Operations Project Manager (OPM) for Robert C. Byrd (RCB) Locks and Dam and Greenup Locks and Dam, implemented Recommendations A.1.b through e and A.2.a through d in Report No. DODIG-2013-109 as agreed.

(FOUO) Report No. DODIG-2013-109, "Improved Security Needed to Protect Infrastructure and Systems in the Great Lakes and Ohio River Division," was issued on July 23, 2013. Recommendations A.1.b through e and A.2.a through d stated that the Commander, USACE Huntington District, in coordination with the OPM for RCB and Greenup, should:

- (FOUO) ██████████ at RCB and Greenup;
- (FOUO) ██████████ at RCB and Greenup;
- conduct inventories of keys at RCB and Greenup;
- (FOUO) ██████████ at RCB; and
- (FOUO) ██████████ at Greenup.

Findings

(FOUO) The Commander, USACE, Huntington District, implemented five of the eight audit recommendations we reviewed from Report No. DoDIG 2013-109. However, the Commander did not:

Findings (cont'd)

- (FOUO) ██████████ at RCB and Greenup as agreed to in Recommendations A.1.b and A.2.b; and
- (FOUO) ██████████ at Greenup as agreed to in Recommendation A.2.c.

(FOUO) Instead of repairing the ██████████ at RCB and Greenup, the Commander ██████████ the end of their lifecycle and were costly to maintain. In addition, the Commander did not ██████████ at the lock control station because resources were not made available.

(FOUO) Though the Commander, Huntington District, did not implement three of the eight audit recommendations, physical security efforts with the use of risk assessments allowed the Commander to make informed, risk management decisions for implementing reasonable physical security to prevent unauthorized access to RCB and Greenup. Additionally, Huntington District personnel requested funds in the FY 2017 budget to ██████████ at Greenup as agreed to in Recommendation A.2.c.

Recommendations

We are not making recommendations in this report. The Commander, USACE, Huntington District made informed, risk management decisions for implementing reasonable physical security to prevent unauthorized access to the RCB Locks and Dam and Greenup Locks and Dam based on available resources.

Management Comments and Our Response

We provided a discussion draft report to management for review and comment. Management concurred with our conclusion and did not have any comments to the discussion draft. Therefore, no written response to this report is required.

Recommendations Table

Management	Recommendations Requiring Comment
Commander, Huntington District, U.S. Army Corps of Engineers	None



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

May 10, 2016

MEMORANDUM FOR DIRECTOR OF CIVIL WORKS, U.S. ARMY CORPS OF ENGINEERS
AUDITOR GENERAL, DEPARTMENT OF THE ARMY

SUBJECT: Followup Audit: Audit Recommendations From Report No. DODIG-2013-109
Were Not Fully Implemented, but Controls Were in Place to Prevent
Unauthorized Access to Robert C. Byrd and Greenup Locks and Dams
(Report No. DODIG-2016-089)

We are providing this report for your information and use. The Commander, USACE, Huntington District, implemented five of the eight audit recommendations we reviewed from Report No. DODIG-2013-109. Though USACE, Huntington District personnel did not implement the remaining three recommendations, physical security efforts with the use of risk assessments allowed the Commander to make informed, risk management decisions for implementing reasonable physical security to prevent unauthorized access to Robert C. Byrd Locks and Dam and Greenup Locks and Dam. We conducted this audit in accordance with generally accepted government auditing standards. We provided a discussion draft report to management for review and comment. Management concurred with our conclusion and did not have any comments to the discussion draft. Therefore, no written response to this report is required.

We appreciate the courtesies extended to the staff. Please direct questions to me at (703) 604-9077 (DSN 664-9077).

Jacqueline L. Wicecarver

Jacqueline L. Wicecarver
Assistant Inspector General
Acquisition and Sustainment Management

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Acronyms and Abbreviations

Introduction

Objective

We determined whether the Commander, U.S. Army Corps of Engineers (USACE), Huntington District, in coordination with the Operations Project Manager (OPM) for Robert C. Byrd (RCB) Locks and Dam and Greenup Locks and Dam, implemented Recommendations A.1.b through e and A.2.a through d in Report No. DODIG-2013-109, "Improved Security Needed to Protect Infrastructure and Systems in the Great Lakes and Ohio River Division," July 29, 2013. See the Appendix for the scope and methodology.

Background

U.S. Army Corps of Engineers

USACE owns and operates 50 percent of all federally owned dams. Specifically, USACE operates and maintains approximately 700 dams nationwide and in Puerto Rico that provide significant benefits to the nation, its people, businesses, critical infrastructure, and the environment. The USACE dam safety program uses risk analysis to operate and manage the dams, with life safety being the highest priority. USACE uses the risk analysis information to repair its dams in the most effective manner within a constrained budget. The Great Lakes and Ohio River Division is one of nine USACE divisions. The Huntington District is one of seven districts under the Great Lakes and Ohio River Division.

Huntington District

The Huntington District is responsible for 311 miles of the Ohio River, along with the tributary rivers and drainage basins that flow into the Ohio River. The Huntington District has built and now maintains 35 flood-risk reduction projects, more than any other USACE district. It also maintains nine locks and dams that include RCB and Greenup.

Intrusion Detection System

(FOUO) During the previous audit, the physical security controls at RCB and Greenup included fencing, security cameras, and the intrusion detection systems (IDS). According to personnel from the Huntington District, the IDS consists of various components that alert personnel in case of an unauthorized access attempt. For the purpose of this audit, IDS refers to [REDACTED]

[REDACTED]

Prior Audit Report

(FOUO) Audit Report DODIG-2013-109 found that the OPMs for RCB and Greenup did not implement physical security measures in accordance with the Baseline Security Posture to detect and protect Civil Works structures against unauthorized access. The report recommended that the Commander, USACE Huntington District, in coordination with the OPM for RCB and Greenup:

- (FOUO) [REDACTED] at RCB and Greenup;
- (FOUO) [REDACTED] at RCB and Greenup;
- conduct inventories of keys at RCB and Greenup;
- (FOUO) [REDACTED]
[REDACTED] at RCB; and
- (FOUO) [REDACTED] at Greenup.

Criteria

Army Regulation 190-51, "Security of Unclassified Army Property (Sensitive and Nonsensitive)," September 30, 1993. Army Regulation 190-51 establishes physical security policies, procedures, and standards for safeguarding of U. S. Army property and provides guidance for protection of both sensitive and nonsensitive supplies and equipment. The Regulation requires personnel to conduct a semiannual inventory of keys to the padlocks and maintain inventory records.

(FOUO) [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

USACE Critical Infrastructure Security Program Baseline Security Posture Guide for Civil Works Projects, March 17, 2006. The Baseline Security Posture Guide requires major subordinate commanders to evaluate the likelihood of a successful attack on dams as well as probable fatalities and economic losses. The Guide also mandated the implementation of specific security requirements based on those assessments. To protect USACE dams, the guide requires:

- IDS sensors at access portals for structures housing critical assets;
- effective locks;
- hardening of windows¹ for critical areas; and
- security cameras.

¹ The USACE Critical Infrastructure Security Program Baseline Security Posture Guide for Civil Works Projects refers to force-resistant windows as hardened windows.

Since the issuance of Report No. DODIG-2013-109, USACE physical security managers no longer use Baseline Security Posture Guide; instead, these managers use USACE Operations Order 2014-32 to implement physical security at the dams.

USACE Operations Order 2014-32, “Integrated Protection,” July 2014.

Operations Order 2014-32 provides policy and guidance for the planning, coordination, implementation, and execution of the USACE integrated protection mission. Specifically, the Order requires USACE to implement all appropriate security measures to protect its assets and people, while taking into consideration resource constraints.

Review of Internal Controls

DoD Instruction 5010.40² requires DoD organizations to implement a comprehensive system of internal controls that provides reasonable assurance that programs are operating as intended and to evaluate the effectiveness of the controls. We reviewed internal controls and did not identify any weaknesses pertaining to physical security measures related to Recommendations A.1.b-e and A.2.a-d in Report No. DODIG-2013-109.

² DoD Instruction 5010.40, “Managers’ Internal Control Program Procedures,” May 30, 2013.

Finding

Audit Recommendations Were Not Fully Implemented, but Controls Were in Place to Prevent Unauthorized Access to Robert C. Byrd and Greenup Locks and Dams

(FOUO) The Commander, USACE, Huntington District, implemented five of the eight audit recommendations we reviewed from Report No. DODIG 2013-109. However, the Commander did not:

- (FOUO) [REDACTED] at RCB and Greenup as agreed to in Recommendations A.1.b and A.2.b; and
- (FOUO) [REDACTED] at Greenup as agreed to in Recommendation A.2.c.

(FOUO) Instead of repairing the [REDACTED] at RCB and Greenup, the Commander, Huntington District, [REDACTED], including RCB and Greenup. The [REDACTED] had reached the end of their lifecycle and were costly to maintain. In addition, the Commander did not [REDACTED] because resources were not made available.

Although the Commander, Huntington District, did not implement three of the eight audit recommendations, physical security efforts with the use of risk assessments allowed the Commander to make informed, risk management decisions for implementing reasonable physical security to prevent unauthorized access to RCB and Greenup. Additionally, Huntington District personnel requested funds in the FY 2017 budget to [REDACTED] [REDACTED] at Greenup as agreed to in Recommendation A.2.c.

Audit Summary — Report No. DODIG-2013-109³

(FOUO) The OPMs for RCB and Greenup did not implement physical security measures in accordance with the Baseline Security Posture Guide to detect and protect Civil Works structures against unauthorized access. Specifically, the OPMs for RCB and Greenup did not:

- (FOUO) [REDACTED];
- (FOUO) [REDACTED]; and
- conduct inventories of keys in accordance with Army Regulation 190-51.⁴

(FOUO) Additionally, the OPM for RCB did not [REDACTED]. At Greenup, OPM [REDACTED] to prevent unauthorized entry.

(FOUO) As a result, USACE unnecessarily [REDACTED] to USACE and local communities [REDACTED] and [REDACTED] navigable waterways along the Ohio River.

Recommendations and Agreed-Upon Actions⁵

Repair IDS (Recommendations A.1.b and A.2.b)

(FOUO) Recommendations A.1.b (RCB) and A.2.b (Greenup) stated that the Commander, Huntington District, in coordination with the OPM, [REDACTED]

The Commander agreed, stating that Huntington District would include the cost of the repairs in the FY 2016 Operations and Maintenance budget.

Replace Nonfunctioning Security Cameras (Recommendations A.1.d and A.2.a)

(FOUO) Recommendations A.1.d (RCB) and A.2.d (Greenup) stated that the Commander, Huntington District, in coordination with the OPM for RCB and Greenup, [REDACTED] throughout the projects.⁶

The Commander agreed, stating that personnel would [REDACTED] in FY 2013.

³ Report No. DODIG-2013-109 contains three findings. This followup report only focused on Finding A. Specifically, Recommendations A.1.b, A.1.c, A.1.d, A.1.e, A.2.a, A.2.b, A.2.c, and A.2.d.

⁴ Army Regulation 190-51, "Security of Unclassified Army Property (Sensitive and Nonsensitive)," September 30, 1993.

⁵ Recommendations A.1.b, A.1.d, A.1.e, A.2.a, A.2.b, A.2.d related to corrective actions needed at RCB and Greenup.

⁶ USACE officials refer to their locks and dams as projects.

Conduct Inventories of Keys (Recommendations A.1.e and A.2.d)

Recommendations A.1.e and A.2.d stated that the Commander, Huntington District, in coordination with the OPM for RCB and Greenup, conduct and document inventories of keys for project personnel in accordance with Army Regulation 190-51.

The Commander agreed, stating that this recommendation was already in place. Personnel from Huntington District explained that key inventories would be completed semiannually and the documentation would be kept on file for 1 year.

Reposition Security Cameras at RCB (Recommendation A.1.c)

(FOUO) Recommendation A.1.c stated that the Commander, Huntington District, in coordination with the OPM for RCB, [REDACTED] to the operations building.

The Commander agreed, stating that personnel would implement a plan to correct the deficiency in 2013.

Install Hardened Windows at Greenup (Recommendation A.2.c)

(FOUO) Recommendation A.2.c stated that the Commander, Huntington District, in coordination with the OPM for Greenup, [REDACTED] to limit the potential of unauthorized access to a critical area where [REDACTED] were located.

The Commander agreed, stating that this requirement would be included in the project's FY 2016 Operations and Maintenance budget package submitted from Huntington District's Navigation Area Office in March 2014.

Recommendations Implemented

The Commander, Huntington District, implemented five of the eight recommendations as agreed. Specifically, personnel at USACE Huntington District:

- installed dedicated cameras at electronic points of entry at RCB (A.1.c);
- replaced cameras at RCB and Greenup (A.1.d and A.2.a); and
- conducted key inventories at RCB and Greenup (A.1.e and A.2.d).

Instead of repositioning the security cameras to monitor electronic access control points as required by recommendation A.1.c, RCB personnel installed two new dedicated security cameras to monitor the electronic access points to

the operations building. These cameras allowed personnel to provide continuous monitoring of the electronic access points without repositioning any of the cameras that were already in place.

(FOUO) Greenup personnel replaced the [REDACTED] (Recommendation A.2.a) identified in Report No. DODIG-2013-109. However, [REDACTED] did not work during our site visit. According to Huntington District personnel, the [REDACTED] were fixed after the previous audit, but [REDACTED] broke again. Huntington District personnel explained that [REDACTED] were a common occurrence because of the weather conditions and other factors. Nevertheless, Greenup personnel programmed [REDACTED] [REDACTED] [REDACTED]

(FOUO) Huntington District personnel explained that when a [REDACTED], the on-site electrician would purchase the necessary components with the Government purchase card to fix the problem. If Huntington District personnel could not fix the problem or if the parts needed were too expensive, they would notify the OPM by e-mail or with a checklist prepared by the dam and lock operators. According to Huntington District personnel, [REDACTED] were operational as of February 2016.

Army Regulation 190-51 requires personnel to conduct semiannual inventories of keys and maintain the inventory records. Although personnel at Greenup conducted and documented semiannual inventories of keys in accordance with Army Regulation 190-51 (Recommendation A.2.d), we identified a discrepancy in the key records during our site visit. Specifically, the number of keys counted during our on-site inventory did not match the number of keys in the key control register.⁷ This discrepancy occurred because the lockmaster at Greenup was on extended leave and eventually retired shortly before our site visit. Therefore Greenup personnel did not get to update the key control register in time for our review. However, once we informed Huntington District and Greenup personnel of the discrepancy, the key control register was corrected.

Recommendations Not Implemented

(FOUO) The Commander, Huntington District, did not implement three of the eight recommendations we reviewed. Specifically, the Commander did not:

- (FOUO) [REDACTED] at RCB and Greenup (Recommendations A.1.b and A.2.b); and

⁷ The key control register is the master list of all the keys held by the custodians.

- (FOUO) [REDACTED] at Greenup (Recommendation A.2.c).

IDS [REDACTED], but Other Security Measures Are In Place

(FOUO) The Commander, Huntington District, did not [REDACTED] [REDACTED] as agreed to in Recommendations A.1.b and A.2.b. Instead, the Commander, issued a decision memorandum on September 24, 2013, to [REDACTED] [REDACTED] including RCB and Greenup. However, Huntington District personnel explained that there were several layers of security in place to prevent unauthorized access to locks and dams, including the following.

- The locks and dams were surrounded by a physical fence.
- Security cameras were in use and monitored by lock and dam operators.
- Personnel were on site 24 hours a day and performed physical security checks four times a day by walking through secured areas.

(FOUO) The Commander explained in the decision memorandum that he decided [REDACTED] because it was not reliable, it was aging, and was a financial constraint to the District. The Commander further explained that Huntington District installed [REDACTED] from 2002 through 2003 as a result of USACE's Risk Assessment Methodology for Dams (RAM-D) conducted after the terrorist attacks committed on 9/11. Although RAM-D assessments recommended USACE to implement security measures to prevent a terrorist attack, [REDACTED]

[REDACTED] The Commander also explained that, since [REDACTED] [REDACTED], maintaining it became financially draining for the Huntington District. In addition, USACE HQ and Huntington District personnel considered [REDACTED] [REDACTED] and there was no funding available to replace the system. Further, the Commander, Huntington District, [REDACTED] based on the threats stated in the latest risk analysis conducted on locks and dams located within Huntington District.

(FOUO) According to the latest risk analysis, [REDACTED] [REDACTED] at RCB and Greenup. The risk analysis was conducted in accordance with DA PAM 190-51, "Risk Analysis for Army Property," September 30, 1993, which provided a method and format to determine the risk level based on each asset's value and likelihood of a security incident. DA PAM 190-51 states that the risk analyses serve as a basis to design and implement a physical security system based on available resources and local needs. Using the guidance from DA PAM 190-51 and the results of the risk analyses

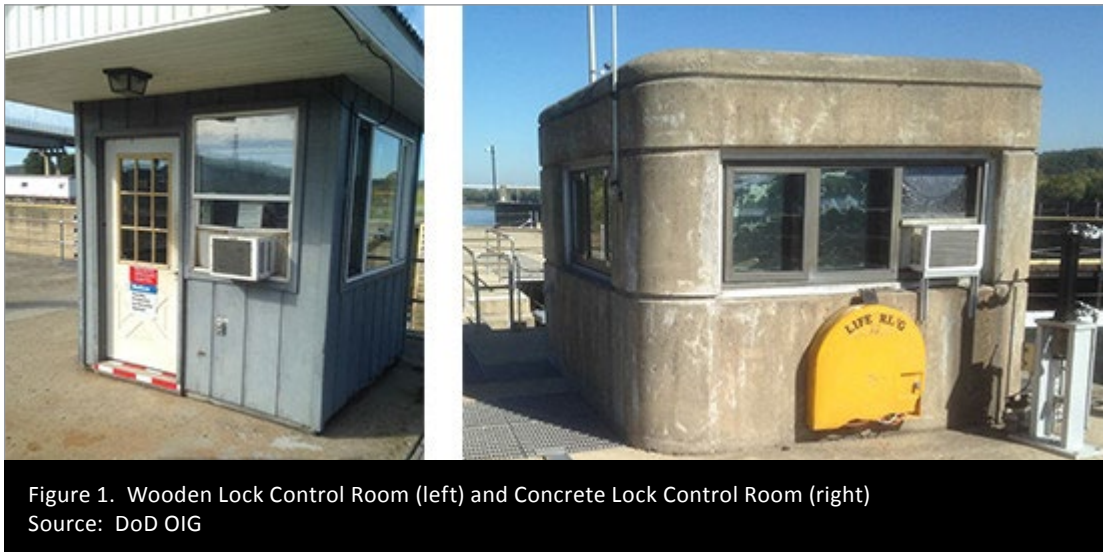
(FOUO) conducted, as well as resource availability, the Commander, Huntington District, made an informed risk management decision [REDACTED]

(FOUO) Furthermore, over the course of both audits, Huntington District personnel consistently stated that [REDACTED]. For example, [REDACTED]

Overall, according to Huntington District personnel, the layered security approach that they had in place with the fact that RCB and Greenup had never been breached, provided them the confidence that the security measures in place were adequate to prevent unauthorized access.

Hardened Windows Needed at Greenup

(FOUO) Huntington District personnel [REDACTED] at Greenup. Huntington District personnel determined [REDACTED]. According to Huntington District personnel, sufficient funding was not available to upgrade [REDACTED]



⁸ Although the previous audit recommended the installation of hardened windows at one lock control station, the USACE Huntington District personnel identified a second wooden lock control station that was in disrepair and initiated corrective action.

Huntington District personnel included estimates for upgrading [REDACTED] [REDACTED] as part of the FY 2016 Operation and Maintenance as agreed to in Recommendation A.2.c. However, USACE Huntington personnel stated that the Great Lakes and Ohio River Division did not [REDACTED] [REDACTED]. The Huntington District re-submitted the upgrade package as part of the FY 2017 budget to the Great Lakes and Ohio River Division for budget consideration. Meanwhile, Huntington District personnel installed a key mechanism that [REDACTED] [REDACTED]

Conclusion

Although Huntington District personnel did not implement three of the eight audit recommendations, physical security measures were in place to prevent unauthorized access to RCB and Greenup. In addition, the physical security efforts at Huntington District in combination with the security officer's risk assessments allowed the Commander to make informed, risk management decisions to implement reasonable physical security of the dams based on the resources available.

Appendix

Scope and Methodology

We conducted this performance audit from September 2015 through May 2016, in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

(FOUO) We visited the USACE, Huntington District Office in Huntington, West Virginia, to observe the implementations of Recommendations A.1.b-e and A.2.a-d, and to interview district and project personnel in charge of physical security at RCB and Greenup. We conducted walkthroughs at RCB and Greenup to determine whether:

- (FOUO) RCB and Greenup personnel [REDACTED]
- (FOUO) RCB personnel [REDACTED] and [REDACTED]
- (FOUO) Greenup personnel installed [REDACTED]

(FOUO) In addition, we conducted limited inventories of keys at RCB and Greenup to verify the accuracy of the key control register and reviewed supporting documentation to validate that the key custodians conducted semiannual inventories of keys. We also interviewed personnel from USACE Headquarters, Huntington District, RCB, and Greenup to discuss the [REDACTED] at both locations. Lastly, we reviewed physical security plans, risk analyses documents, and budget information related to the audit recommendations.

Use of Computer-Processed Data

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

Use of Technical Assistance

We obtained support from the DoD OIG Technical Assistance Directorate to evaluate the implementation of physical security controls at RCB and Greenup.

Prior Coverage

During the last 5 years, the Department of Defense Inspector General (DoD IG) issued three reports discussing physical security affecting USACE, Civil Works, critical infrastructure.

DoD IG

(~~FOUO~~) Report No. DODIG-2014-037, "[REDACTED]
[REDACTED]

(~~FOUO~~) Report No. DODIG-2013-109, "Improved Security Needed to Protect Infrastructure and Systems in the Great Lakes and Ohio River Division," July 29, 2013

(~~FOUO~~) Report No. DODIG-2013-036, "Improvements Are Needed to Strengthen the Security Posture of USACE, Civil Works, Critical Infrastructure and Industrial Control Systems in the Northwestern Division," January 14, 2013

Acronyms and Abbreviations

- IDS** Intrusion Detection System
- OPM** Operations Project Manager
- RCB** Robert C. Byrd Locks and Dam
- USACE** U.S. Army Corp of Engineers



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U.S. DEPARTMENT OF DEFENSE

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