



U.S. ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF INSPECTOR GENERAL



Fiscal Year 2013 Federal Information Security Management Act Report

Status of EPA's Computer Security Program

Report No. 14-P-0033

November 26, 2013



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Abbreviations

| | |
|---------|--|
| BIA | Business Impact Analysis |
| EPA | U.S. Environmental Protection Agency |
| FDCC | Federal Desktop Core Configurations |
| FISMA | Federal Information Security Management Act |
| GAO | U.S. Government Accountability Office |
| MOU | Memorandum of Understanding |
| NIST | National Institute of Standards and Technology |
| OEI | Office of Environmental Information |
| OIG | Office of Inspector General |
| OMB | Office of Management and Budget |
| POA&M | Plan of Action & Milestones |
| SP | Special Publication |
| US-CERT | U.S. Computer Emergency Readiness Team |
| USGCB | U.S. Government Configuration Baseline |

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At a Glance

Why We Did This Review

The U.S. Environmental Protection Agency's (EPA's) Office of Inspector General (OIG) conducted this review to assess the EPA's compliance with the Federal Information Security Management Act (FISMA). FISMA requires Inspectors General to prepare an annual evaluation of their agencies' information security programs and practices. The Department of Homeland Security issued reporting guidelines requesting information on 11 information system security practices within federal agencies.

This report addresses the following EPA theme:

- *Embracing EPA as a high performing organization.*

For further information, contact our public affairs office at (202) 566-2391.

The full report is at:
www.epa.gov/oig/reports/2014/20131126-14-P-0033.pdf

Fiscal Year 2013 Federal Information Security Management Act Report: Status of EPA's Computer Security Program

What We Found

The EPA has established an agencywide information security program that assesses the security state of information systems that is consistent with FISMA requirements and applicable policy and guidelines for the following areas:

- Continuous Monitoring Management
- Identity and Access Management
- Incident Response and Reporting
- Security Training
- Plan of Action and Milestones
- Remote Access Management
- Contingency Planning
- Security Capital Planning

However, the EPA should place more management emphasis on remediating significant deficiencies found within the agency's configuration management, risk management and contractor systems management practices. The agency should take steps to:

- Improve processes for timely remediation of scan result deviations.
- Address risks from an organizational, mission and business, and information system perspective.
- Obtain sufficient assurance that security controls for contractor systems are effectively implemented and comply with federal and organization guidelines.

We briefed the agency on the results of our audit work and, where appropriate, made adjustments to address its concerns.

The EPA's network and data could be exploited without processes to evaluate risks and timely remediate vulnerabilities. Data processed by EPA contractors could be at risk because adequate controls may not be in place.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

THE INSPECTOR GENERAL

November 26, 2013

MEMORANDUM

SUBJECT: Fiscal Year 2013 Federal Information Security Management Act Report:
Status of EPA's Computer Security Program
Report No. 14-P-0033

FROM: Arthur A. Elkins Jr.

A handwritten signature in black ink, appearing to read "Arthur A. Elkins Jr.", is written over the printed name.

TO: Gina McCarthy
Administrator

Attached is the Office of Inspector General's (OIG's) Fiscal Year 2013 Federal Information Security Management Act (FISMA) Reporting Template, as prescribed by the Office of Management and Budget (OMB). We performed this review in accordance with generally accepted government auditing standards. These standards require the team to plan and perform the review to obtain sufficient and appropriate evidence to provide a reasonable basis for the findings and conclusions based on the objectives of the review.

We believe the evidence obtained provides a reasonable basis for our findings and conclusions, and in all material respects, meets the FISMA reporting requirements prescribed by OMB. In accordance with OMB reporting instructions, we are forwarding this report to you for submission, along with the agency's required information, to the Director of OMB.

We briefed agency officials on the results of our audit work and, where appropriate, made an adjustment in the Continuous Monitoring section to address their concern. The agency needs to make improvements in the following programs: (1) Configuration Management, (2) Risk Management, and (3) Contractor Systems.

We will post this report on our website at <http://www.epa.gov/oig>.

If you or your staff have any questions regarding this report, please contact Richard Eyermann, Acting Assistant Inspector General for Audit, at 202-566-0565 or eyermann.richard@epa.gov; or Rudolph M. Brevard, Director for Information Resources Management Audits, at 202-566-0893 or brevard.rudy@epa.gov.

Inspector General

Section Report

2013

Annual FISMA
Report

Environmental Protection Agency

Section 1: Continuous Monitoring Management

1.1 Has the organization established an enterprise-wide continuous monitoring program that assesses the security state of information systems that is consistent with FISMA requirements, OMB policy, and applicable NIST guidelines? Besides the improvement opportunities that may have been identified by the OIG, does the program include the following attributes?

Yes

1.1.1 Documented policies and procedures for continuous monitoring (NIST SP 800-53: CA-7).

Yes

1.1.2 Documented strategy and plans for continuous monitoring (NIST SP 800-37 Rev 1, Appendix G).

Yes

1.1.3 Ongoing assessments of security controls (system-specific, hybrid, and common) that have been performed based on the approved continuous monitoring plans (NIST SP 800-53, NIST 800-53A).

Yes

1.1.4 Provides authorizing officials and other key system officials with security status reports covering updates to security plans and security assessment reports, as well as a common and consistent POA&M program that is updated with the frequency defined in the strategy and/or plans (NIST SP 800-53, 800-53A).

Yes

1.2 Please provide any additional information on the effectiveness of the organization's Continuous Monitoring Management Program that was not noted in the questions above.

N/A

Section 2: Configuration Management

2.1 Has the organization established a security configuration management program that is consistent with FISMA requirements, OMB policy, and applicable NIST guidelines? Besides the improvement opportunities that may have been identified by the OIG, does the program include the following attributes?

No

Comments:

The OIG issued "Briefing Report: Improvements Needed in EPA's Information Security Program," Report No.13-P-0257, dated May 13, 2013, which documented that EPA did not have a process for timely remediation of configuration compliance scans; fully implement Federal Desktop Core Configurations/U.S. Government Configuration Baseline (FDCC/USGCB) secure configuration settings; and have a specified, documented timeline to correct deviations from baseline configurations.

Section 2: Configuration Management

2.1.1 Documented policies and procedures for configuration management.

Yes

2.1.2 Defined standard baseline configurations.

Yes

2.1.3 Assessments of compliance with baseline configurations.

No

2.1.4 Process for timely, as specified in organization policy or standards, remediation of scan result deviations.

No

2.1.5 For Windows-based components, USGCB secure configuration settings are fully implemented, and any deviations from USGCB baseline settings are fully documented.

No

2.1.6 Documented proposed or actual changes to hardware and software configurations.

Yes

2.1.7 Process for timely and secure installation of software patches.

No

2.1.8 Software assessing (scanning) capabilities are fully implemented (NIST SP 800-53: RA-5, SI-2).

Yes

2.1.9 Configuration-related vulnerabilities, including scan findings, have been remediated in a timely manner, as specified in organization policy or standards. (NIST SP 800-53: CM-4, CM-6, RA-5, SI-2)

No

2.1.10 Patch management process is fully developed, as specified in organization policy or standards. (NIST SP 800-53: CM-3, SI-2).

No

2.2 Please provide any additional information on the effectiveness of the organization's Configuration Management Program that was not noted in the questions above.

N/A

Section 3: Identity and Access Management

Section 3: Identity and Access Management

3.1 Has the organization established an identity and access management program that is consistent with FISMA requirements, OMB policy, and applicable NIST guidelines and which identifies users and network devices? Besides the improvement opportunities that have been identified by the OIG, does the program include the following attributes?

Yes

3.1.1 Documented policies and procedures for account and identity management (NIST SP 800-53: AC-1).

Yes

3.1.2 Identifies all users, including Federal employees, contractors, and others who access organization systems (NIST SP 800-53, AC-2).

No

3.1.3 Identifies when special access requirements (e.g., multi-factor authentication) are necessary.

Yes

3.1.4 If multi-factor authentication is in use, it is linked to the organization's PIV program where appropriate (NIST SP 800-53, IA-2).

Yes

3.1.5 Organization has planned for implementation of PIV for logical access in accordance with government policies (HSPD 12, FIPS 201, OMB M-05-24, OMB M-07-06, OMB M-08-01, OMB M-11-11).

Yes

3.1.6 Organization has adequately planned for implementation of PIV for physical access in accordance with government policies (HSPD 12, FIPS 201, OMB M-05-24, OMB M-07-06, OMB M-08-01, OMB M-11-11).

Yes

3.1.7 Ensures that the users are granted access based on needs and separation-of-duties principles.

Yes

3.1.8 Identifies devices with IP addresses that are attached to the network and distinguishes these devices from users (For example: IP phones, faxes, printers are examples of devices attached to the network that are distinguishable from desktops, laptops or servers that have user accounts).

Yes

Section 3: Identity and Access Management

3.1.9 Identifies all user and non-user accounts. (Refers to user accounts that are on a system. Data user accounts are created to pull generic information from a database or a guest/anonymous account for generic login purposes. They are not associated with a single user or a specific group of users.)

Yes

3.1.10 Ensures that accounts are terminated or deactivated once access is no longer required.

No

3.1.11 Identifies and controls use of shared accounts.

Yes

3.2 Please provide any additional information on the effectiveness of the organization's Identity and Access Management Program that was not noted in the questions above.

N/A

Section 4: Incident Response and Reporting

4.1 Has the organization established an incident response and reporting program that is consistent with FISMA requirements, OMB policy, and applicable NIST guidelines? Besides the improvement opportunities that may have been identified by the OIG, does the program include the following attributes?

Yes

4.1.1 Documented policies and procedures for detecting, responding to, and reporting incidents (NIST SP 800-53: IR-1).

Yes

4.1.2 Comprehensive analysis, validation and documentation of incidents.

Yes

4.1.3 When applicable, reports to US-CERT within established timeframes (NIST SP 800-53, 800-61, and OMB M-07-16, M-06-19).

Yes

4.1.4 When applicable, reports to law enforcement within established timeframes (NIST SP 800-61).

No

Section 4: Incident Response and Reporting

4.1.5 Responds to and resolves incidents in a timely manner, as specified in organization policy or standards, to minimize further damage (NIST SP 800-53, 800-61, and OMB M-07-16, M-06-19).

Yes

4.1.6 Is capable of tracking and managing risks in a virtual/cloud environment, if applicable.

Yes

4.1.7 Is capable of correlating incidents.

Yes

4.1.8 Has sufficient incident monitoring and detection coverage in accordance with government policies (NIST SP 800-53, 800-61; OMB M-07-16, M-06-19).

Yes

4.2 Please provide any additional information on the effectiveness of the organization's Incident Management Program that was not noted in the questions above.

N/A

Section 5: Risk Management

5.1 Has the organization established a risk management program that is consistent with FISMA requirements, OMB policy, and applicable NIST guidelines? Besides the improvement opportunities that may have been identified by the OIG, does the program include the following attributes?

No

Comments:

The OIG issued "Briefing Report: Improvements Needed in EPA's Information Security Program," Report No.13-P-0257, dated May 13, 2013, which documented that EPA's risk management program's Risk Executive Group needs to define the core mission and business processes for the organization (including any derivative or related mission and business processes carried out by subordinate organizations).

5.1.1 Documented policies and procedures for risk management, including descriptions of the roles and responsibilities of participants in this process.

Yes

Section 5: Risk Management

- 5.1.2 Addresses risk from an organization perspective with the development of a comprehensive governance structure and organization-wide risk management strategy as described in NIST SP 800-37, Rev.1.
No
- 5.1.3 Addresses risk from a mission and business process perspective and is guided by the risk decisions from an organizational perspective, as described in NIST SP 800-37, Rev. 1.
No
- 5.1.4 Addresses risk from an information system perspective and is guided by the risk decisions from an organizational perspective and the mission and business perspective, as described in NIST SP 800-37, Rev. 1.
No
- 5.1.5 Has an up-to-date system inventory.
No
- 5.1.6 Categorizes information systems in accordance with government policies.
Yes
- 5.1.7 Selects an appropriately tailored set of baseline security controls.
Yes
- 5.1.8 Implements the tailored set of baseline security controls and describes how the controls are employed within the information system and its environment of operation.
Yes
- 5.1.9 Assesses the security controls using appropriate assessment procedures to determine the extent to which the controls are implemented correctly, operating as intended, and producing the desired outcome with respect to meeting the security requirements for the system.
Yes
- 5.1.10 Authorizes information system operation based on a determination of the risk to organizational operations and assets, individuals, other organizations, and the Nation resulting from the operation of the information system and the decision that this risk is acceptable.
Yes

Section 5: Risk Management

5.1.11 Ensures information security controls are monitored on an ongoing basis including assessing control effectiveness, documenting changes to the system or its environment of operation, conducting security impact analyses of the associated changes, and reporting the security state of the system to designated organizational officials.

Yes

5.1.12 Information-system-specific risks (tactical), mission/business-specific risks, and organizational-level (strategic) risks are communicated to appropriate levels of the organization.

Yes

5.1.13 Senior officials are briefed on threat activity on a regular basis by appropriate personnel (e.g., CISO).

Yes

5.1.14 Prescribes the active involvement of information system owners and common control providers, chief information officers, senior information security officers, authorizing officials, and other roles as applicable in the ongoing management of information system-related security risks.

Yes

5.1.15 Security authorization package contains system security plan, security assessment report, and POA&M in accordance with government policies. (NIST SP 800-18, 800-37).

Yes

5.1.16 Security authorization package contains accreditation boundaries, defined in accordance with government policies, for organization information systems.

Yes

5.2 Please provide any additional information on the effectiveness of the organization's Risk Management Program that was not noted in the questions above.

N/A

Section 6: Security Training

6.1 Has the organization established a security training program that is consistent with FISMA requirements, OMB policy, and applicable NIST guidelines? Besides the improvement opportunities that may have been identified by the OIG, does the program include the following attributes?

Yes

Section 6: Security Training

6.1.1 Documented policies and procedures for security awareness training (NIST SP 800-53: AT-1).

Yes

6.1.2 Documented policies and procedures for specialized training for users with significant information security responsibilities.

Yes

6.1.3 Security training content based on the organization and roles, as specified in organization policy or standards.

Yes

6.1.4 Identification and tracking of the status of security awareness training for all personnel (including employees, contractors, and other organization users) with access privileges that require security awareness training.

Yes

6.1.5 Identification and tracking of the status of specialized training for all personnel (including employees, contractors, and other organization users) with significant information security responsibilities that require specialized training.

Yes

6.1.6 Training material for security awareness training contains appropriate content for the organization (NIST SP 800-50, 800-53).

Yes

6.2 Please provide any additional information on the effectiveness of the organization's Security Training Program that was not noted in the questions above.

N/A

Section 7: Plan Of Action & Milestones (POA&M)

7.1 Has the organization established a POA&M program that is consistent with FISMA requirements, OMB policy, and applicable NIST guidelines and tracks and monitors known information security weaknesses? Besides the improvement opportunities that may have been identified by the OIG, does the program include the following attributes?

Yes

7.1.1 Documented policies and procedures for managing IT security weaknesses discovered during security control assessments and that require remediation.

Yes

Section 7: Plan Of Action & Milestones (POA&M)

7.1.2 Tracks, prioritizes and remediates weaknesses.

Yes

7.1.3 Ensures remediation plans are effective for correcting weaknesses.

No

7.1.4 Establishes and adheres to milestone remediation dates.

Yes

7.1.5 Ensures resources and ownership are provided for correcting weaknesses.

Yes

7.1.6 POA&Ms include security weaknesses discovered during assessments of security controls and that require remediation (do not need to include security weakness due to a risk-based decision to not implement a security control) (OMB M-04-25).

No

7.1.7 Costs associated with remediating weaknesses are identified (NIST SP 800-53, Rev. 3, Control PM-3 and OMB M-04-25).

Yes

7.1.8 Program officials report progress on remediation to CIO on a regular basis, at least quarterly, and the CIO centrally tracks, maintains, and independently reviews/validates the POA&M activities at least quarterly (NIST SP 800-53, Rev. 3, Control CA-5; OMB M-04-25).

Yes

7.2 Please provide any additional information on the effectiveness of the organization's POA&M Program that was not noted in the questions above.

The OIG issued "Briefing Report: Improvements Needed in EPA's Information Security Program," Report No. 13-P-0257, dated May 13, 2013, which documented the EPA does not have POA&M processes that provide assurance that identified weaknesses have been corrected.

Section 8: Remote Access Management

8.1 Has the organization established a remote access program that is consistent with FISMA requirements, OMB policy, and applicable NIST guidelines? Besides the improvement opportunities that may have been identified by the OIG, does the program include the following attributes?

Yes

Section 8: Remote Access Management

- 8.1.1 Documented policies and procedures for authorizing, monitoring, and controlling all methods of remote access (NIST SP 800-53: AC-1, AC-17).
Yes
- 8.1.2 Protects against unauthorized connections or subversion of authorized connections.
Yes
- 8.1.3 Users are uniquely identified and authenticated for all access (NIST SP 800-46, Section 4.2, Section 5.1).
Yes
- 8.1.4 Telecommuting policy is fully developed (NIST SP 800-46, Section 5.1).
Yes
- 8.1.5 If applicable, multi-factor authentication is required for remote access (NIST SP 800-46, Section 2.2, Section 3.3).
Yes
- 8.1.6 Authentication mechanisms meet NIST Special Publication 800-63 guidance on remote electronic authentication, including strength mechanisms.
Yes
- 8.1.7 Defines and implements encryption requirements for information transmitted across public networks.
Yes
- 8.1.8 Remote access sessions, in accordance with OMB M-07-16, are timed-out after 30 minutes of inactivity, after which re-authentication is required.
Yes
- 8.1.9 Lost or stolen devices are disabled and appropriately reported (NIST SP 800-46, Section 4.3, US-CERT Incident Reporting Guidelines).
Yes
- 8.1.10 Remote access rules of behavior are adequate in accordance with government policies (NIST SP 800-53, PL-4).
Yes
- 8.1.11 Remote access user agreements are adequate in accordance with government policies (NIST SP 800-46, Section 5.1, NIST SP 800-53, PS-6).
Yes

Section 8: Remote Access Management

8.2 Please provide any additional information on the effectiveness of the organization's Remote Access Management that was not noted in the questions above.

N/A

8.3 Does the organization have a policy to detect and remove unauthorized (rogue) connections?

Yes

Section 9: Contingency Planning

9.1 Has the organization established an enterprise-wide business continuity/disaster recovery program that is consistent with FISMA requirements, OMB policy, and applicable NIST guidelines? Besides the improvement opportunities that may have been identified by the OIG, does the program include the following attributes?

Yes

9.1.1 Documented business continuity and disaster recovery policy providing the authority and guidance necessary to reduce the impact of a disruptive event or disaster (NIST SP 800-53: CP-1).

Yes

9.1.2 The organization has incorporated the results of its system's Business Impact Analysis (BIA) into the analysis and strategy development efforts for the organization's Continuity of Operations Plan (COOP), Business Continuity Plan (BCP), and Disaster Recovery Plan (DRP) (NIST SP 800-34).

No

9.1.3 Development and documentation of division, component, and IT infrastructure recovery strategies, plans and procedures (NIST SP 800-34).

Yes

9.1.4 Testing of system specific contingency plans.

Yes

9.1.5 The documented BCP and DRP are in place and can be implemented when necessary (FCD1, NIST SP 800-34).

Yes

9.1.6 Development of test, training, and exercise (TT&E) programs (FCD1, NIST SP 800-34, NIST SP 800-53).

Yes

Section 9: Contingency Planning

9.1.7 Testing or exercising of BCP and DRP to determine effectiveness and to maintain current plans.

Yes

9.1.8 After-action report that addresses issues identified during contingency/disaster recovery exercises (FCD1, NIST SP 800-34).

Yes

9.1.9 Systems that have alternate processing sites (FCD1, NIST SP 800-34, NIST SP 800-53).

Yes

9.1.10 Alternate processing sites are not subject to the same risks as primary sites (FCD1, NIST SP 800-34, NIST SP 800-53).

Yes

9.1.11 Backups of information that are performed in a timely manner (FCD1, NIST SP 800-34, NIST SP 800-53).

Yes

9.1.12 Contingency planning that considers supply chain threats.

No

9.2 Please provide any additional information on the effectiveness of the organization's Contingency Planning Program that was not noted in the questions above.

N/A

Section 10: Contractor Systems

10.1 Has the organization established a program to oversee systems operated on its behalf by contractors or other entities, including organization systems and services residing in the cloud external to the organization? Besides the improvement opportunities that may have been identified by the OIG, does the program includes the following attributes?

No

Comments:

EPA did not complete an assessment of the security controls for three of the five systems we reviewed.

10.1.1 Documented policies and procedures for information security oversight of systems operated on the organization's behalf by contractors or other entities, including organization systems and services residing in a public cloud.

Yes

Section 10: Contractor Systems

10.1.2 The organization obtains sufficient assurance that security controls of such systems and services are effectively implemented and comply with Federal and organization guidelines (NIST SP 800-53: CA-2).

No

10.1.3 A complete inventory of systems operated on the organization's behalf by contractors or other entities, including organization systems and services residing in a public cloud.

No

10.1.4 The inventory identifies interfaces between these systems and organization-operated systems (NIST SP 800-53: PM-5).

No

10.1.5 The organization requires appropriate agreements (e.g., MOUs, Interconnection Security Agreements, contracts, etc.) for interfaces between these systems and those that it owns and operates.

No

10.1.6 The inventory of contractor systems is updated at least annually.

No

10.1.7 Systems that are owned or operated by contractors or entities, including organization systems and services residing in a public cloud, are compliant with FISMA requirements, OMB policy, and applicable NIST guidelines.

No

10.2 Please provide any additional information on the effectiveness of the organization's Contractor Systems Program that was not noted in the questions above.

N/A

Section 11: Security Capital Planning

11.1 Has the organization established a security capital planning and investment program for information security? Besides the improvement opportunities that may have been identified by the OIG, does the program include the following attributes?

Yes

11.1.1 Documented policies and procedures to address information security in the capital planning and investment control (CPIC) process.

Yes

Section 11: Security Capital Planning

11.1.2 Includes information security requirements as part of the capital planning and investment process.

Yes

11.1.3 Establishes a discrete line item for information security in organizational programming and documentation (NIST SP 800-53: SA-2).

Yes

11.1.4 Employs a business case/Exhibit 300/Exhibit 53 to record the information security resources required (NIST SP 800-53: PM-3).

Yes

11.1.5 Ensures that information security resources are available for expenditure as planned.

Yes

11.2 Please provide any additional information on the effectiveness of the organization's Security Capital Planning Program that was not noted in the questions above.

N/A

Distribution

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