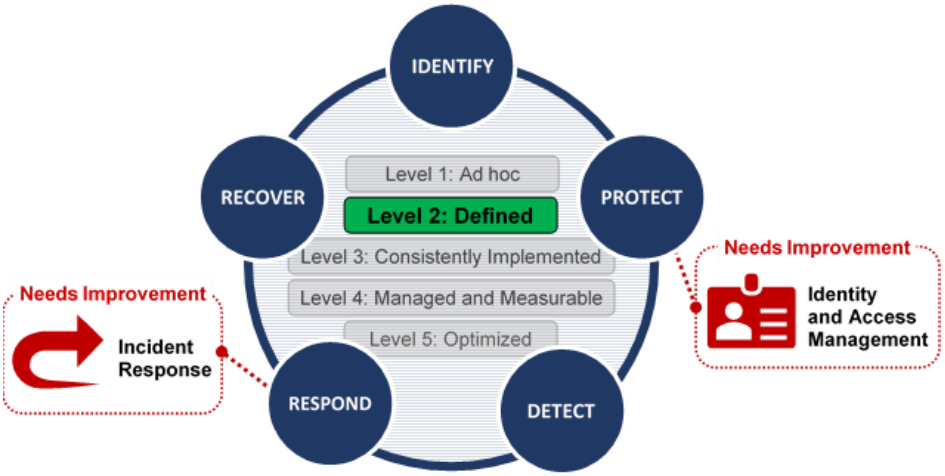
U.S. ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF INSPECTOR GENERAL

U.S. Chemical Safety Board

CSB Still Needs to Improve Its "Incident Response" and "Identity and Access Management" Information Security Functions

Report No. 19-P-0147 **May 9, 2019**



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Abbreviations

CSB	U.S. Chemical Safety and Hazard Investigation Board
EPA	U.S. Environmental Protection Agency
FISMA	Federal Information Security Modernization Act of 2014
FY	Fiscal Year
IG	Inspector General
OIG	Office of Inspector General
OMB	Office of Management and Budget
U.S.C.	United States Code

Cover Image: OIG assessment of the CSB's FISMA function areas and domains. (EPA OIG graphic)

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U.S. Environmental Protection Agency
Office of Inspector General

19-P-0147
May 9, 2019

At a Glance

CSB Still Needs to Improve Its "Incident Response" and "Identity and Access Management" Information Security Functions

Why We Did This Project

We performed this audit to assess the U.S. Chemical Safety and Hazard Investigation Board's (CSB's) security practices related to the performance measures outlined in the fiscal year (FY) 2018 Inspector General (IG) reporting metrics document for the Federal Information Security Modernization Act of 2014 (FISMA).

The *FY 2018 IG FISMA Reporting Metrics* outlines five security function areas and eight corresponding domains to help federal agencies manage cybersecurity risks. The document also outlines five maturity levels by which IGs should rate agency information security programs:

- Level 1—Ad Hoc.
- Level 2—Defined.
- Level 3—Consistently Implemented.
- Level 4—Managed and Measurable.
- Level 5—Optimized.

This report addresses the following CSB goal:

- *Preserve the public trust by maintaining and improving organizational excellence.*

Address inquiries to our public affairs office at (202) 566-2391 or OIG_WEBCOMMENTS@epa.gov.

List of OIG reports.

What We Found

We assessed the maturity of the CSB's information security program and determined it met the second of five levels: *Defined.* This means that policies, procedures and strategies are formalized and documented but not consistently implemented. While the CSB has policies, procedures and strategies for many of these function areas and domains, the agency still needs to improve the following issues that we previously identified in our FYs 2016 and 2017 FISMA audits:

The CSB lacks established procedures for automated processes and authentication technologies, which could permit unauthorized access to agency systems.

- **Incident Response**—The CSB neither identified nor defined its incident response processes for incident handling, including the containment, eradication and recovery from incidents. The CSB did not document or formalize its rationale for not having an automated system to detect potential incidents. Additionally, the agency did not document established procedures to generate alerts based on log data analysis or record pertinent data of suspicious activity.

- **Identity and Access Management**—The CSB did not fully define or implement processes for the use of Personal Identity Verification cards for physical and logical access.

We also found that the CSB needs to make improvements to its "Data Protection and Privacy" domain, which was added to the *FY 2018 IG FISMA Reporting Metrics.* Appendix B contains the results of our FISMA assessments.

Recommendations and Planned CSB Corrective Actions

We recommend that the CSB improve its "Identity and Access Management," "Incident Response," and "Data Protection and Privacy" capabilities, including by implementing Personal Identity Verification card technology to strengthen access to its computers and network, and documenting its practices for data exfiltration and incident response. The CSB agreed with the five recommendations in this report and provided sufficient corrective actions and milestone dates for all of them. We consider the recommendations resolved with corrective actions pending.

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

OFFICE OF
INSPECTOR GENERAL

May 9, 2019

Kristen M. Kulinowski, Ph.D.
Interim Executive Authority and Member
U.S. Chemical Safety and Hazard Investigation Board
1750 Pennsylvania Avenue NW, Suite 910
Washington, D.C. 20006

Dear Dr. Kulinowski:

This is the U.S. Environmental Protection Agency's Office of Inspector General (OIG) report on the audit of the U.S. Chemical Safety and Hazard Investigation Board's (CSB's) compliance with the Federal Information Security Modernization Act of 2014. This report contains findings that describe the problems the OIG has identified and corrective actions the OIG recommends. This report represents the opinion of the OIG and does not necessarily represent the final CSB position. Final determinations on matters in this report will be made by CSB managers in accordance with established audit resolution procedures.

Your office provided acceptable corrective actions and milestone dates in response to OIG recommendations. All recommendations are resolved and no final response to this report is required. However, if you submit a response, it will be posted on the OIG's website, along with our memorandum commenting on your response. Your response should be provided as an Adobe PDF file that complies with the accessibility requirements of Section 508 of the Rehabilitation Act of 1973, as amended. The final response should not contain data that you do not want to be released to the public; if your response contains such data, you should identify the data for redaction or removal along with corresponding justification.

We will post this report to our website at www.epa.gov/oig.

Sincerely,

Charles J. Sheehan

Charles J. Sheehan
Acting Inspector General

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Purpose

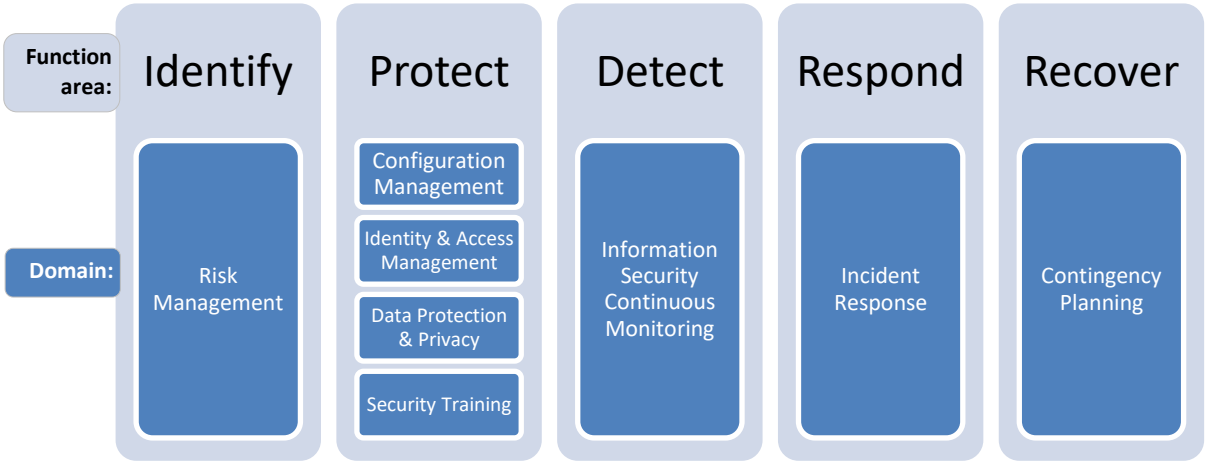
The Office of Inspector General (OIG) performed this audit to assess the U.S. Chemical Safety and Hazard Investigation Board's (CSB's) security practices related to the performance measures outlined in the fiscal year (FY) 2018 Inspector General (IG) reporting metrics document for the Federal Information Security Modernization Act of 2014 (FISMA).

Background

Under FISMA (44 U.S.C. § 3554(a)(1)(A)(i) and (ii)), agency heads are responsible for providing information security protections commensurate with the risk and magnitude of harm resulting from the unauthorized access, use, disclosure, disruption, modification or destruction of information and information systems.

The *FY 2018 IG FISMA Reporting Metrics* identifies eight domains within the five security functions defined in the National Institute of Standards and Technology Framework for Improving Critical Infrastructure Cybersecurity (Figure 1). This cybersecurity framework provides agencies with a common structure for identifying and managing cybersecurity risks across the enterprise.

Figure 1: FY 2018 cybersecurity framework security functions and domains



Source: *FY 2018 IG FISMA Reporting Metrics.*

The effectiveness of an agency's information security program is based on a five-tiered maturity model spectrum (Table 1). The agency's IG is responsible for annually assessing the agency's rating along this spectrum by determining whether it possesses the required policies, procedures and strategies for each domain. The IG makes this determination by answering a series of questions about domain-specific criteria that are presented in the *FY 2018 IG FISMA Reporting Metrics* template developed for each fiscal year. An agency must fully satisfy each maturity level before it can be evaluated at the next maturity level. This approach forces the agencies to develop the necessary policies, procedures

and strategies during the foundational levels (1 and 2). The advanced levels (3, 4 and 5) describe the extent to which the agencies have institutionalized those policies and procedures.

Table 1: Maturity model spectrum

Maturity level		Description
1	Ad Hoc	Policies, procedures and strategy are not formalized; activities are performed in an ad hoc, reactive manner.
2	Defined	Policies, procedures and strategy are formalized and documented but not consistently implemented.
3	Consistently Implemented	Policies, procedures and strategy are consistently implemented, but quantitative and qualitative effectiveness measures are lacking.
4	Managed and Measurable	Quantitative and qualitative measures are collected across the organization to assess the effectiveness of policies, procedures and strategy and make necessary changes.
5	Optimized	Policies, procedures and strategy are fully institutionalized, repeatable, self-generating, consistently implemented and regularly updated based on a changing threat and technology landscape and business/mission needs.

Source: *FY 2018 IG FISMA Reporting Metrics.*

The *FY 2018 FISMA Reporting Metrics* includes an increased focus on the "Protect" function area. Specifically, the Office of Management and Budget (OMB) introduced the "Data Protection and Privacy" domain within the "Protect" function area to evaluate personally identifiable information collected within agency systems.

Responsible Offices

The CSB is an independent federal agency that is responsible for investigating industrial chemical accidents at fixed industrial facilities to determine the conditions and circumstances so that similar events might be prevented. As the agency head, the CSB's Chief Executive Officer is responsible for agency administration. The CSB's Office of Administration is responsible for the information technology security program. The Chief Information Officer is responsible for making risk management decisions regarding deficiencies; their potential impact on controls; and the confidentiality, integrity and availability of systems. The Chief Information Officer also reports to the agency head regarding the progress of remedial actions on the agency's information security program.

The CSB investigates oil refinery explosions. (CSB photo)

Scope and Methodology

We conducted this audit from July 2018 to March 2019 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. We believe that the evidence obtained provides a reasonable basis for our conclusions based on our audit objective.

During our audit, we assessed whether the CSB exceeded Maturity Level 1, *Ad Hoc*, for each of the 67 questions for the eight domains in the *FY 2018 IG FISMA Reporting Metrics*. Because the CSB stated that there have been no updates to its information technology documentation or policies since our FY 2017 FISMA audit, we conducted a risk assessment of the FY 2018 FISMA metrics criteria to determine whether OMB made any changes to the FISMA metric questions or underlying criteria since the last audit.

We also evaluated all new FY 2018 criteria to assess whether they materially changed the CSB's responses to the overall metric questions since the FY 2017 audit. We assessed each new criterion as follows:

- High Risk—Material changes since the FY 2017 audit.
- Low Risk—No material changes since the FY 2017 audit.

We relied on our responses to the FY 2017 CSB FISMA metric questions to answer the FY 2018 metric questions rated as *low risk*, and we conducted additional audit work to answer the questions rated as *high risk.*

We limited our assessment to determine whether the agency possessed the noted policies, procedures and strategies required for each metric under the function area. If the policies, procedures and strategies were formalized and documented, we rated the agency at Level 2, *Defined*. If not, we rated the agency at Level 1, *Ad Hoc*.

We conducted an assessment of the newly added "Data Protection and Privacy" domain under the "Protect" function area. Additionally, we tested six domain questions in the "Protect" and "Respond" security function areas for which the CSB was rated at Level 1, *Ad Hoc*, in FY 2017. However, we did not conduct testing to determine whether the agency implemented the noted policies, procedures and strategies, and we did not test to determine what additional steps the agency needs to complete to achieve a higher maturity level.

We collected management's feedback on the analysis through a telephone interview and emails. We worked closely with the CSB and briefed the agency on the audit results for each function area of the *FY 2018 IG FISMA Reporting Metrics*.

Appendix A provides the OIG-completed Department of Homeland Security CyberScope template responses for each FISMA metric as submitted to OMB on October 30, 2018.

Prior Audits

During our testing of the CSB's FY 2018 FISMA compliance, we followed up on deficiencies identified in the FY 2017 FISMA audit, as documented in Report No. 18-P-0030, *Improvements Needed in CSB's Identity and Access Management and Incident Response Security Functions*, dated October 30, 2017. We reported that the CSB lacked guidance and needed improvement in two domains: (1) Identity and Access Management and (2) Incident Response. Specifically, we found that the CSB did not have fully defined processes for Personal Identity Verification card technology for physical and logical access, nor did the agency have technologies to respond to cybersecurity events.

We also found that the CSB did not fully implement the use of Personal Identity Verification cards during our testing of the CSB's FY 2016 FISMA compliance. This finding was reported in Report No. 17-P-0045, *CSB Has Effective "Identify" and "Recover" Information Security Functions, but Attention Is Needed in Other Information Security Function Areas*, dated November 14, 2016.

Results

For all eight domains assessed in our audit, we categorized the maturity level as Level 2, *Defined* (Table 2), and that Level 2 *Defined* maturity level is the overall level at which we ranked the CSB's information security program.

Table 2: Maturity level of CSB's information security function areas

Function area	Domain	OIG-assessed maturity level
Identify	Risk Management	Level 2: Defined
Protect	Configuration Management	Level 2: Defined
Protect	Identity and Access Management	Level 2: Defined
Protect	Data Protection and Privacy	Level 2: Defined
Protect	Security Training	Level 2: Defined
Detect	Information Security Continuous Monitoring	Level 2: Defined
Respond	Incident Response	Level 2: Defined
Recover	Contingency Planning	Level 2: Defined

Source: *FY 2018 IG FISMA Reporting Metrics*.

However, the CSB continued to need improvements in the "Identity and Access Management"; "Data Protection and Privacy"; and "Incident Response" domains in FY 2018 as shown in Table 3.

Table 3: CSB domains that require further improvement

Function area	Domain	Explanation of criteria rated as Level 1
Protect	Identity and Access Management	The CSB did not fully define or implement processes for the use of Homeland Security Presidential Directive-12, regarding Personal Identity Verification cards for physical and logical access.[a] We previously identified this issue in our FYs 2016 and 2017 FISMA audits. However, the CSB did not take steps to fix the issue or obtain a waiver from the Office of Management and Budget exempting it from this requirement.
Protect	Data Protection and Privacy	The CSB did not fully define policies and procedures for data exfiltration and enhanced network defenses as required by the National Institute of Standards and Technology Special Publication 800-53 (specifically, the "System and Information Integrity" control).[b]
Respond	Incident Response	The CSB neither identified nor defined its incident response processes for incident handling—including the containment, eradication and recovery of systems—as required by the National Institute of Standards and Technology Special Publication 800-53 (specifically, the "Incident Response" control).[c] The CSB has not documented or formalized its rationale for not having an automated system for the detection of potential incidents. Additionally, the CSB has not documented established procedures to generate alerts based on log data analysis and record pertinent data of suspicious activity to respond to cybersecurity events.

Source: OIG analysis.

[a] U.S. Department of Homeland Security, *Policies for a Common Identification Standard for Federal Employees and Contractors*, Presidential Directive-12, August 27, 2004.

[b] U.S. Department of Commerce, National Institute of Standards and Technology, *Security and Privacy Controls for Federal Information Systems and Organizations*, Special Publication 800-53, Revision 4, April 2013.

[c] *Ibid.*

Conclusion

The CSB would greatly improve and strengthen its cybersecurity program by fully defining the policies, procedures and strategies outlined in Table 3. Failure to define and implement processes to address cybersecurity controls leaves the CSB susceptible to loss of data, security breaches and excessive incident handling time frames in the event of a security incident.

Recommendations

We recommend that the Chairperson, U.S. Chemical Safety and Hazard Investigation Board:

1. Implement use of Homeland Security Presidential Directive-12, regarding Personal Identity Verification card technology for physical and logical access, as required. If unable to implement this card technology, obtain a waiver from the Office of Management and Budget not to operate as required by the National Institute of Standards and Technology.

2. Document policies and procedures for data exfiltration and enhanced network defenses, as required by National Institute of Standards and Technology Special Publication 800-53 (specifically, the "System and Information Integrity" control).

3. Define and document incident handling policies and procedures that address containment, eradication and recovery, as required by National Institute of Standards and Technology Special Publication 800-53 (specifically, the "Incident Response" control).

4. Document and formalize within the CSB policies and procedures the agency's rationale for not having an automated system for the detection of potential incidents.

5. Document established procedures to generate alerts based on log data analysis and to record pertinent data for suspicious activity.

CSB Response and OIG Evaluation

The CSB agreed with five of the six draft report recommendations and provided milestone dates for when it would complete corrective actions. The CSB indicated that it implemented antispam software and third-party monitoring technologies to respond to cybersecurity events and agreed to thoroughly document where and how these logging capabilities, alerts, and records are generated and kept in the System Security Plan.

The CSB did not agree with Recommendation 6 in the draft report to document an analysis for not purchasing antispam software or third-party monitoring services. The CSB provided clarification regarding the antispam software implemented at the agency. However, the CSB has not documented this information in its incident response procedures. We agree that by documenting established procedures to generate alerts based on log data analysis and record pertinent data for suspicious activities, as stated in Recommendation 5, the issues regarding Recommendation 6 would be addressed. As such, we modified the report and removed Recommendation 6.

We met with the CSB management to discuss its response and modified the final report as needed. We consider the five remaining recommendations resolved with corrective actions pending. The CSB's complete response is in Appendix B.

Status of Recommendations and Potential Monetary Benefits

RECOMMENDATIONS

Rec. No.	Page No.	Subject	Status[1]	Action Official	Planned Completion Date	Potential Monetary Benefits (in $000s)
1	6	Implement use of Homeland Security Presidential Directive-12, regarding Personal Identity Verification card technology for physical and logical access, as required. If unable to implement this card technology, obtain a waiver from the Office of Management and Budget not to operate as required by the National Institute of Standards and Technology.	R	Chairperson, U.S. Chemical Safety and Hazard Investigation Board	10/28/19	
2	6	Document policies and procedures for data exfiltration and enhanced network defenses, as required by National Institute of Standards and Technology Special Publication 800-53 (specifically, the "System and Information Integrity" control).	R	Chairperson, U.S. Chemical Safety and Hazard Investigation Board	5/31/19	
3	6	Define and document incident handling policies and procedures that address containment, eradication and recovery, as required by National Institute of Standards and Technology Special Publication 800-53 (specifically, the "Incident Response" control).	R	Chairperson, U.S. Chemical Safety and Hazard Investigation Board	5/17/19	
4	6	Document and formalize within the CSB policies and procedures the agency's rationale for not having an automated system for the detection of potential incidents.	R	Chairperson, U.S. Chemical Safety and Hazard Investigation Board	5/31/19	
5	6	Document established procedures to generate alerts based on log data analysis and to record pertinent data for suspicious activity.	R	Chairperson, U.S. Chemical Safety and Hazard Investigation Board	5/31/19	

[1] C = Corrective action completed.
R = Recommendation resolved with corrective action pending.
U = Recommendation unresolved with resolution efforts in progress.

Appendix A

OIG-Completed Department of Homeland Security CyberScope Template

Inspector General

Section Report

2018

Annual FISMA Report

Chemical Safety Board

Function 1: Identify - Risk Management

1 To what extent does the organization maintain a comprehensive and accurate inventory of its information systems (including cloud systems, public facing websites, and third party systems), and system interconnections (NIST SP 800-53: CA-3, PM-5, and CM-8; OMB M-04-25; NIST 800-161; NIST Cybersecurity Framework (CSF): ID.AM-1 – 4; FY 2018 CIO FISMA Metrics: 1.1, 1.4, and 1.5)?

Defined (Level 2)

Comments: See remarks in question 13.2.

2 To what extent does the organization use standard data elements/taxonomy to develop and maintain an up-to-date inventory of hardware assets connected to the organization's network with the detailed information necessary for tracking and reporting (NIST SP 800-53: CA-7 and CM-8; NIST SP 800-137; Federal Enterprise Architecture (FEA) Framework, v2; FY 2018 CIO FISMA Metrics: 1.2)?

Defined (Level 2)

Comments: See remarks in question 13.2.

3 To what extent does the organization use standard data elements/taxonomy to develop and maintain an up-to-date inventory of the software and associated licenses used within the organization with the detailed information necessary for tracking and reporting (NIST SP 800-53: CA-7, CM-8, and CM-10; NIST SP 800-137; FEA Framework, v2)?

Defined (Level 2)

Comments: See remarks in question 13.2.

4 To what extent has the organization categorized and communicated the importance/priority of information systems in enabling its missions and business functions (NIST SP 800-53: RA-2, PM-7, and PM-11; NIST SP 800-60; CSF: ID.BE-3; FIPS 199; FY 2018 CIO FISMA Metrics: 1.1)?

Defined (Level 2)

Comments: See remarks in question 13.2.

5 To what extent has the organization established, communicated, and implemented its risk management policies, procedures, and strategy that includes the organization's processes and methodologies for categorizing risk, developing a risk profile, assessing risk, risk appetite/tolerance levels, responding to risk, and monitoring risk (NIST SP 800-39; NIST SP 800-53: PM-8, PM-9; CSF: ID RM-1 – ID.RM-3; OMB A-123; OMB M-16-17; Green Book (Principle #6); CFO Council ERM Playbook; OMB M-17-25; FY 2018 CIO FISMA Metrics: 1.6)?

Defined (Level 2)

Comments: See remarks in question 13.2.

Function 1: Identify - Risk Management

6 To what extent does the organization utilize an information security architecture to provide a disciplined and structured methodology for managing risk, including risk from the organization's supply chain (NIST SP 800-39; FEA Framework; NIST SP 800-53: PL-8, SA-3, SA-8, SA-9, SA-12, and PM-9; NIST SP 800-161; DHS Binding Operational Directive 17-01)?

Defined (Level 2)

Comments: See remarks in question 13.2.

7 To what degree have roles and responsibilities of stakeholders involved in risk management, including the risk executive function/Chief Risk Officer/Senior Accountable Official for Risk Management, Chief Information Officer, Chief Information Security Officer, and other internal and external stakeholders and mission specific resources been defined and communicated across the organization (NIST SP 800-39: Section 2.3.1 and 2.3.2; NIST SP 800-53: RA-1; CSF: ID.RM-1 – ID.GV-2; OMB A-123; CFO Council ERM Playbook)?

Defined (Level 2)

Comments: See remarks in question 13.2.

8 To what extent has the organization ensured that plans of action and milestones (POA&Ms) are utilized for effectively mitigating security weaknesses (NIST SP 800-53: CA-5; OMB M-04-25)?

Defined (Level 2)

Comments: See remarks in question 13.2.

9 To what extent has the organization defined, communicated, and implemented its policies and procedures for conducting system level risk assessments, including for identifying and prioritizing
(i) internal and external threats, including through use of the common vulnerability scoring system, or other equivalent framework
(ii) internal and external asset vulnerabilities, including through vulnerability scanning,
(iii) the potential likelihoods and business impacts/consequences of threats exploiting vulnerabilities, and
(iv) security controls to mitigate system-level risks (NIST SP 800-37; NIST SP 800-39; NIST SP 800-53: PL-2 and RA-1; NIST SP 800-30; CSF:ID.RA-1 – 6)?

Defined (Level 2)

Comments: See remarks in question 13.2.

10 To what extent does the organization ensure that information about risks are communicated in a timely manner to all necessary internal and external stakeholders (CFO Council ERM Playbook; OMB A-123; OMB Circular A-11; Green Book (Principles #9, #14 and #15))?

Defined (Level 2)

Comments: See remarks in question 13.2.

Function 1: Identify - Risk Management

11 To what extent does the organization ensure that specific contracting language (such as appropriate information security and privacy requirements and material disclosures, FAR clauses, and clauses on protection, detection, and reporting of information) and SLAs are included in appropriate contracts to mitigate and monitor the risks related to contractor systems and services (FAR Case 2007-004; Common Security Configurations; FAR Sections: 24.104, 39.101, 39.105, 39.106, and 52.239-1; President's Management Council; NIST SP 800-53: SA-4; FedRAMP standard contract clauses; Cloud Computing Contract Best Practices; FY 2018 CIO FISMA Metrics: 1.5; Presidential Executive Order on Strengthening the Cybersecurity of Federal Networks and Critical Infrastructure)?

Defined (Level 2)

Comments: See remarks in question 13.2.

12 To what extent does the organization utilize technology (such as a governance, risk management, and compliance tool) to provide a centralized, enterprise wide (portfolio) view of risks across the organization, including risk control and remediation activities, dependencies, risk scores/levels, and management dashboards (NIST SP 800-39; OMB A-123; CFO Council ERM Playbook)?

Defined (Level 2)

Comments: See remarks in question 13.2.

13.1 Please provide the assessed maturity level for the agency's Identify - Risk Management function.

Defined (Level 2)

Comments: See remarks in question 13.2.

13.2 Provide any additional information on the effectiveness (positive or negative) of the organization's risk management program that was not noted in the questions above. Taking into consideration the overall maturity level generated from the questions above and based on all testing performed, is the risk management program effective?

We limited our testing to determining whether the agency possessed the noted policies, procedures and strategies required for each metric under the function area. If the policies, procedures and strategies were formalized and documented we rated the agency at level 2 (Defined). However, we did not conduct additional testing to determine whether the agency implemented the noted policies, procedures and strategies and we did not test to determine what additional steps the agency needs to complete to achieve a higher maturity level.

Calculated Maturity Level - Defined (Level 2)

Function 2A: Protect - Configuration Management

Function 2A: Protect - Configuration Management

14 To what degree have the roles and responsibilities of configuration management stakeholders been defined, communicated across the agency, and appropriately resourced (NIST SP 800-53: CM-1; NIST SP 800-128: Section 2.4)?

Defined (Level 2)

Comments: See remarks in question 22.

15 To what extent does the organization utilize an enterprise wide configuration management plan that includes, at a minimum, the following components: roles and responsibilities, including establishment of a Change Control Board (CCB) or related body; configuration management processes, including processes for: identifying and managing configuration items during the appropriate phase within an organization's SDLC; configuration monitoring; and applying configuration management requirements to contractor operated systems (NIST SP 800-128: Section 2.3.2; NIST SP 800-53: CM-9)?

Defined (Level 2)

Comments: See remarks in question 22.

16 To what degree have information system configuration management policies and procedures been defined and implemented across the organization? (Note: the maturity level should take into consideration the maturity of questions 17, 18, 19, and 21) (NIST SP 800-53: CM-1; NIST SP 800-128: 2.2.1)?

Defined (Level 2)

Comments: See remarks in question 22.

17 To what extent does the organization utilize baseline configurations for its information systems and maintain inventories of related components at a level of granularity necessary for tracking and reporting (NIST SP 800-53: CM-2 and CM-8; FY 2018 CIO FISMA Metrics: 1.1 and 2.2; CSF: ID.DE.CM-7)?

Defined (Level 2)

Comments: See remarks in question 22.

18 To what extent does the organization utilize configuration settings/common secure configurations for its information systems? (NIST SP 800-53: CM-6, CM-7, and SI-2; FY 2018 CIO FISMA Metrics: 1.1 and 2.2; SANS/CIS Top 20 Security Controls 3.7)?

Defined (Level 2)

Comments: See remarks in question 22.

19 To what extent does the organization utilize flaw remediation processes, including patch management, to manage software vulnerabilities (NIST SP 800-53: CM-3 and SI-2; NIST SP 800-40, Rev. 3; OMB M-16-04; SANS/CIS Top 20, Control 4.5; FY 2018 CIO FISMA Metrics: 2.13; and DHS Binding Operational Directive 15-01)?

Defined (Level 2)

Comments: See remarks in question 22.

Function 2A: Protect - Configuration Management

20 To what extent has the organization adopted the Trusted Internet Connection (TIC) program to assist in protecting its network (OMB M-08-05)?

Defined (Level 2)

Comments: See remarks in question 22.

21 To what extent has the organization defined and implemented configuration change control activities including: determination of the types of changes that are configuration controlled; review and approval/disapproval of proposed changes with explicit consideration of security impacts and security classification of the system; documentation of configuration change decisions; implementation of approved configuration changes; retaining records of implemented changes; auditing and review of configuration changes; and coordination and oversight of changes by the CCB, as appropriate (NIST SP 800-53: CM-2 and CM-3)?

Defined (Level 2)

Comments: See remarks in question 22.

22 Provide any additional information on the effectiveness (positive or negative) of the organization's configuration management program that was not noted in the questions above. Taking into consideration the maturity level generated from the questions above and based on all testing performed, is the configuration management program effective?

We limited our testing to determining whether the agency possessed the noted policies, procedures and strategies required for each metric under the function area. If the policies, procedures and strategies were formalized and documented we rated the agency at level 2 (Defined). However, we did not conduct additional testing to determine whether the agency implemented the noted policies, procedures and strategies and we did not test to determine what additional steps the agency needs to complete to achieve a higher maturity level.

Calculated Maturity Level - Defined (Level 2)

Function 2B: Protect - Identity and Access Management

23 To what degree have the roles and responsibilities of identity, credential, and access management (ICAM) stakeholders been defined, communicated across the agency, and appropriately resourced (NIST SP 800-53: AC-1, IA-1, and PS-1; Federal Identity, Credential, and Access Management Roadmap and Implementation Guidance (FICAM))?

Defined (Level 2)

Comments: See remarks in question 32.

24 To what degree does the organization utilize an ICAM strategy to guide its ICAM processes and activities (FICAM)?

Ad Hoc (Level 1)

Comments: See remarks in question 32.

Function 2B: Protect - Identity and Access Management

25 To what degree have ICAM policies and procedures been defined and implemented? (Note: the maturity level should take into consideration the maturity of questions 26 through 31) (NIST SP 800-53: AC-1 and IA-1; Cybersecurity Strategy and Implementation Plan (CSIP); SANS/CIS Top 20: 14.1; FY 2018 CIO FISMA Metrics: 2.3).

Defined (Level 2)

Comments: See remarks in question 32.

26 To what extent has the organization developed and implemented processes for assigning personnel risk designations and performing appropriate screening prior to granting access to its systems (NIST SP 800-53: PS-2 and PS-3; National Insider Threat Policy; FY 2018 CIO FISMA Metrics: 2.16)?

Defined (Level 2)

Comments: See remarks in question 32.

27 To what extent does the organization ensure that access agreements, including nondisclosure agreements, acceptable use agreements, and rules of behavior, as appropriate, for individuals (both privileged and non-privileged users) that access its systems are completed and maintained (NIST SP 800-53: AC-8, PL-4, and PS-6)?

Defined (Level 2)

Comments: See remarks in question 32.

28 To what extent has the organization implemented strong authentication mechanisms (two-factor PIV credential or other NIST 800-63 r3 Identity Assurance Level (IAL)3/ Authenticator Assurance Level (AAL) 3/ Federated Assurance Level (FAL) 3 credential) for non-privileged users to access the organization's facilities, networks, and systems, including for remote access (CSIP; HSPD-12; NIST SP 800-53: AC-17; NIST SP 800-128; FIPS 201-2; NIST SP 800-63; FY 2018 CIO FISMA Metrics: 2.4; and Cybersecurity Sprint)?

Ad Hoc (Level 1)

Comments: See remarks in question 32.

29 To what extent has the organization implemented strong authentication mechanisms (two-factor PIV credential or other NIST 800-63 r3 IAL 3/ AAL 3/ FAL 3 credential) for privileged users to access the organization's facilities, networks, and systems, including for remote access (CSIP; HSPD-12; NIST SP 800-53: AC-17; NIST SP 800-128; FIPS 201-2; NIST SP 800-63; FY 2018 CIO FISMA Metrics: 2.5; and Cybersecurity Sprint)?

Ad Hoc (Level 1)

Comments: See remarks in question 32.

Function 2B: Protect - Identity and Access Management

30 To what extent does the organization ensure that privileged accounts are provisioned, managed, and reviewed in accordance with the principles of least privilege and separation of duties? Specifically, this includes processes for periodic review and adjustment of privileged user accounts and permissions, inventorying and validating the scope and number of privileged accounts, and ensuring that privileged user account activities are logged and periodically reviewed (FY 2018 CIO FISMA Metrics: 2.4 and 2.5; NIST SP 800-53: AC-1, AC-2 (2), and AC-17; CSIP)?

Defined (Level 2)

Comments: See remarks in question 32.

31 To what extent does the organization ensure that appropriate configuration/connection requirements are maintained for remote access connections? This includes the use of appropriate cryptographic modules, system time-outs, and the monitoring and control of remote access sessions (NIST SP 800-53: AC-17 and SI-4; and FY 2018 CIO FISMA Metrics: 2.10)?

Defined (Level 2)

Comments: See remarks in question 32.

32 Provide any additional information on the effectiveness (positive or negative) of the organization's identity and access management program that was not noted in the questions above. Taking into consideration the maturity level generated from the questions above and based on all testing performed, is the identity and access management program effective?

We limited our testing to determining whether the agency possessed the noted policies, procedures and strategies required for each metric under the function area. If the policies, procedures and strategies were formalized and documented we rated the agency at level 2 (Defined). However, we did not conduct additional testing to determine whether the agency implemented the noted policies, procedures and strategies and we did not test to determine what additional steps the agency needs to complete to achieve a higher maturity level.

Calculated Maturity Level - Defined (Level 2)

Function 2C: Protect - Data Protection and Privacy

33 To what extent has the organization developed a privacy program for the protection of personally identifiable information (PII) that is collected, used, maintained, shared, and disposed of by information systems (NIST SP 800-122; OMB M-18-02; OMB A-130, Appendix I; NIST SP 800-53: AR-4 and Appendix J)?

Defined (Level 2)

Comments: See remarks in question 38.

Function 2C: Protect - Data Protection and Privacy

34 To what extent has the organization implemented the following security controls to protect its PII and other agency sensitive data, as appropriate, throughout the data lifecycle? (NIST SP 800-53; Appendix J, SC-8, SC-28, MP-3, and MP-6; FY 2018 CIO FISMA Metrics: 2.9 and 2.10)?
Encryption of data at rest
Encryption of data in transit
Limitation of transfer to removable media
Sanitization of digital media prior to disposal or reuse

Defined (Level 2)

Comments: See remarks in question 38.

35 To what extent has the organization implemented security controls to prevent data exfiltration and enhance network defenses? (NIST SP 800-53: SI-3, SI-7(8), SI-4(4) and (18), SC-7(10), and SC-18; FY 2018 CIO FISMA Metrics: 3.8 – 3.12)?

Defined (Level 2)

Comments: See remarks in question 38.

36 To what extent has the organization developed and implemented a Data Breach Response Plan, as appropriate, to respond to privacy events? (NIST SP 800-122; NIST SP 800-53: Appendix J, SE-2; FY 2018 SAOP FISMA metrics; OMB M-17-12; and OMB M-17-25)?

Defined (Level 2)

Comments: See remarks in question 38.

37 To what degree does the organization ensure that privacy awareness training is provided to all individuals, including role-based privacy training (NIST SP 800-53: AR-5)? (Note: Privacy awareness training topics should include, as appropriate: responsibilities under the Privacy Act of 1974 and E-Government Act of 2002, consequences for failing to carry out responsibilities, identifying privacy risks, mitigating privacy risks, and reporting privacy incidents, data collections and use requirements)?

Defined (Level 2)

Comments: See remarks in question 38.

Function 2C: Protect - Data Protection and Privacy

38 Provide any additional information on the effectiveness (positive or negative) of the organization's data protection and privacy program that was not noted in the questions above. Taking into consideration the maturity level generated from the questions above and based on all testing performed, is the data protection and privacy program effective?

We limited our testing to determining whether the agency possessed the noted policies, procedures and strategies required for each metric under the function area. If the policies, procedures and strategies were formalized and documented we rated the agency at level 2 (Defined). However, we did not conduct additional testing to determine whether the agency implemented the noted policies, procedures and strategies and we did not test to determine what additional steps the agency needs to complete to achieve a higher maturity level.

Calculated Maturity Level - Defined (Level 2)

Function 2D: Protect - Security Training

39 To what degree have the roles and responsibilities of security awareness and training program stakeholders been defined, communicated across the agency, and appropriately resourced? (Note: this includes the roles and responsibilities for the effective establishment and maintenance of an organization wide security awareness and training program as well as the awareness and training related roles and responsibilities of system users and those with significant security responsibilities (NIST SP 800-53: AT-1; and NIST SP 800-50).

Defined (Level 2)

Comments: See remarks in question 45.2.

40 To what extent does the organization utilize an assessment of the skills, knowledge, and abilities of its workforce to provide tailored awareness and specialized security training within the functional areas of: identify, protect, detect, respond, and recover (NIST SP 800-53: AT-2 and AT-3; NIST SP 800-50: Section 3.2; Federal Cybersecurity Workforce Assessment Act of 2015; National Cybersecurity Workforce Framework v1.0; NIST SP 800-181; and CIS/SANS Top 20: 17.1)?

Defined (Level 2)

Comments: See remarks in question 45.2.

41 To what extent does the organization utilize a security awareness and training strategy/plan that leverages its organizational skills assessment and is adapted to its culture? (Note: the strategy/plan should include the following components: the structure of the awareness and training program, priorities, funding, the goals of the program, target audiences, types of courses/material for each audience, use of technologies (such as email advisories, intranet updates/wiki pages/social media, web based training, phishing simulation tools), frequency of training, and deployment methods (NIST SP 800-53: AT-1; NIST SP 800-50: Section 3).

Defined (Level 2)

Comments: See remarks in question 45.2.

Function 2D: Protect - Security Training

42 To what degree have security awareness and specialized security training policies and procedures been defined and implemented? (Note: the maturity level should take into consideration the maturity of questions 43 and 44 below) (NIST SP 800-53: AT-1 through AT-4; and NIST SP 800-50).

Defined (Level 2)

Comments: See remarks in question 45.2.

43 To what degree does the organization ensure that security awareness training is provided to all system users and is tailored based on its organizational requirements, culture, and types of information systems? (Note: awareness training topics should include, as appropriate: consideration of organizational policies, roles and responsibilities, secure e-mail, browsing, and remote access practices, mobile device security, secure use of social media, phishing, malware, physical security, and security incident reporting (NIST SP 800-53: AT-2; FY 2018 CIO FISMA Metrics: 2.15; NIST SP 800-50: 6.2; SANS Top 20: 17.4).

Defined (Level 2)

Comments: See remarks in question 45.2.

44 To what degree does the organization ensure that specialized security training is provided to all individuals with significant security responsibilities (as defined in the organization's security policies and procedures) (NIST SP 800-53: AT-3 and AT-4; FY 2018 CIO FISMA Metrics: 2.15)?

Defined (Level 2)

Comments: See remarks in question 45.2.

45.1 Please provide the assessed maturity level for the agency's Protect Function.

Defined (Level 2)

Comments: See remarks in question 45.2.

45.2 Provide any additional information on the effectiveness (positive or negative) of the organization's security training program that was not noted in the questions above. Taking into consideration the maturity level generated from the questions above and based on all testing performed, is the security training program effective?

We limited our testing to determining whether the agency possessed the noted policies, procedures and strategies required for each metric under the function area. If the policies, procedures and strategies were formalized and documented we rated the agency at level 2 (Defined). However, we did not conduct additional testing to determine whether the agency implemented the noted policies, procedures and strategies and we did not test to determine what additional steps the agency needs to complete to achieve a higher maturity level.

Calculated Maturity Level - Defined (Level 2)

Function 3: Detect - ISCM

Function 3: Detect - ISCM

46 To what extent does the organization utilize an information security continuous monitoring (ISCM) strategy that addresses ISCM requirements and activities at each organizational tier and helps ensure an organization-wide approach to ISCM (NIST SP 800-137: Sections 3.1 and 3.6)?

Defined (Level 2)

Comments: See remarks in question 51.2.

47 To what extent does the organization utilize ISCM policies and procedures to facilitate organization-wide, standardized processes in support of the ISCM strategy? ISCM policies and procedures address, at a minimum, the following areas: ongoing assessments and monitoring of security controls; collection of security related information required for metrics, assessments, and reporting; analyzing ISCM data, reporting findings, and reviewing and updating the ISCM strategy (NIST SP 800-53: CA-7) (Note: The overall maturity level should take into consideration the maturity of question 49)?

Defined (Level 2)

Comments: See remarks in question 51.2.

48 To what extent have ISCM stakeholders and their roles, responsibilities, levels of authority, and dependencies been defined and communicated across the organization (NIST SP 800-53: CA-1; NIST SP 800-137; and FY 2018 CIO FISMA Metrics)?

Defined (Level 2)

Comments: See remarks in question 51.2.

49 How mature are the organization's processes for performing ongoing assessments, granting system authorizations, and monitoring security controls (NIST SP 800-137: Section 2.2; NIST SP 800-53: CA-2, CA-6, and CA-7; NIST Supplemental Guidance on Ongoing Authorization; OMB M-14-03)?

Defined (Level 2)

Comments: See remarks in question 51.2.

50 How mature is the organization's process for collecting and analyzing ISCM performance measures and reporting findings (NIST SP 800-137)?

Defined (Level 2)

Comments: See remarks in question 51.2.

51.1 Please provide the assessed maturity level for the agency's Detect - ISCM function.

Defined (Level 2)

Comments: See remarks in question 51.2.

Function 3: Detect - ISCM

51.2 Provide any additional information on the effectiveness (positive or negative) of the organization's ISCM program that was not noted in the questions above. Taking into consideration the maturity level generated from the questions above and based on all testing performed, is the ISCM program effective?

We limited our testing to determining whether the agency possessed the noted policies, procedures and strategies required for each metric under the function area. If the policies, procedures and strategies were formalized and documented we rated the agency at level 2 (Defined). However, we did not conduct additional testing to determine whether the agency implemented the noted policies, procedures and strategies and we did not test to determine what additional steps the agency needs to complete to achieve a higher maturity level.

Calculated Maturity Level - Defined (Level 2)

Function 4: Respond - Incident Response

52 To what extent has the organization defined and implemented its incident response policies, procedures, plans, and strategies, as appropriate, to respond to cybersecurity events (NIST SP 800-53: IR-1; NIST SP 800-61 Rev. 2; NIST SP 800-184; OMB M-17-25; OMB M-17-09; FY 2018 CIO FISMA Metrics: 4.1, 4.3, 4.6, and 5.3; Presidential Policy Direction (PPD) 41)? (Note: The overall maturity level should take into consideration the maturity of questions 53 - 58)?

Defined (Level 2)

Comments: See remarks in question 59.2.

53 To what extent have incident response team structures/models, stakeholders, and their roles, responsibilities, levels of authority, and dependencies been defined and communicated across the organization (NIST SP 800-53: IR-7; NIST SP 800-83; NIST SP 800-61 Rev. 2; OMB M-18-02; OMB M-16-04; FY 2018 CIO FISMA Metrics: Section 4; and US-CERT Federal Incident Notification Guidelines)?

Defined (Level 2)

Comments: See remarks in question 59.2.

54 How mature are the organization's processes for incident detection and analysis? (NIST 800-53: IR-4 and IR-6; NIST SP 800-61 Rev. 2; OMB M-18-02; and US-CERT Incident Response Guidelines)?

Defined (Level 2)

Comments: See remarks in question 59.2.

55 How mature are the organization's processes for incident handling (NIST 800-53: IR-4; NIST SP 800-61, Rev. 2)?

Ad Hoc (Level 1)

Comments: See remarks in question 59.2.

Function 4: Respond - Incident Response

56 To what extent does the organization ensure that incident response information is shared with individuals with significant security responsibilities and reported to external stakeholders in a timely manner (FISMA; OMB M-18-02; NIST SP 800-53: IR-6; US-CERT Incident Notification Guidelines; PPD-41; DHS Cyber Incident Reporting Unified Message)?

Defined (Level 2)

Comments: See remarks in question 59.2.

57 To what extent does the organization collaborate with stakeholders to ensure on-site, technical assistance/surge capabilities can be leveraged for quickly responding to incidents, including through contracts/agreements, as appropriate, for incident response support (FY 2018 CIO FISMA Metrics: 4.4; NIST SP 800-86; NIST SP 800-53: IR-4; OMB M-18-02; PPD-41).

Defined (Level 2)

Comments: See remarks in question 59.2.

58 To what degree does the organization utilize the following technology to support its incident response program?

Web application protections, such as web application firewalls

Event and incident management, such as intrusion detection and prevention tools, and incident tracking and reporting tools

Aggregation and analysis, such as security information and event management (SIEM) products

Malware detection, such as antivirus and antispam software technologies

Information management, such as data loss prevention

File integrity and endpoint and server security tools (NIST SP 800-137; NIST SP 800-61, Rev. 2; NIST SP 800-44)

Ad Hoc (Level 1)

Comments: See remarks in question 59.2.

59.1 Please provide the assessed maturity level for the agency's Respond - Incident Response function.

Defined (Level 2)

Comments: See remarks in question 59.2.

Function 4: Respond - Incident Response

59.2 Provide any additional information on the effectiveness (positive or negative) of the organization's incident response program that was not noted in the questions above. Taking into consideration the maturity level generated from the questions above and based on all testing performed, is the incident response program effective?

We limited our testing to determining whether the agency possessed the noted policies, procedures and strategies required for each metric under the function area. If the policies, procedures and strategies were formalized and documented we rated the agency at level 2 (Defined). However, we did not conduct additional testing to determine whether the agency implemented the noted policies, procedures and strategies and we did not test to determine what additional steps the agency needs to complete to achieve a higher maturity level.

Calculated Maturity Level - Defined (Level 2)

Function 5: Recover - Contingency Planning

60 To what extent have roles and responsibilities of stakeholders involved in information systems contingency planning been defined and communicated across the organization, including appropriate delegations of authority (NIST SP 800-53: CP-1 and CP-2; NIST SP 800-34; NIST SP 800-84; FCD-1: Annex B)?

Defined (Level 2)

Comments: See remarks in question 67.2.

61 To what extent has the organization defined and implemented its information system contingency planning program through policies, procedures, and strategies, as appropriate (Note: Assignment of an overall maturity level should take into consideration the maturity of questions 62-66) (NIST SP 800-34; NIST SP 800-161; FY 2018 CIO FISMA Metrics: 5.1, 5.2, and 5.5).

Defined (Level 2)

Comments: See remarks in question 67.2.

62 To what degree does the organization ensure that the results of business impact analyses are used to guide contingency planning efforts (NIST SP 800-53: CP-2; NIST SP 800-34, Rev. 1, 3.2; FIPS 199; FCD-1; OMB M-17-09; FY 2018 CIO FISMA Metrics: 5.6)?

Defined (Level 2)

Comments: See remarks in question 67.2.

63 To what extent does the organization ensure that information system contingency plans are developed, maintained, and integrated with other continuity plans (NIST SP 800-53: CP-2; NIST SP 800-34; FY 2018 CIO FISMA Metrics: 5.1, 5.2, and 5.5)?

Defined (Level 2)

Comments: See remarks in question 67.2.

Function 5: Recover - Contingency Planning

64 To what extent does the organization perform tests/exercises of its information system contingency planning processes (NIST SP 800-34; NIST SP 800-53: CP-3 and CP-4; FY 2018 CIO FISMA Metrics: 5.1, 5.2, and 5.5)?

Defined (Level 2)

Comments: See remarks in question 67.2.

65 To what extent does the organization perform information system backup and storage, including use of alternate storage and processing sites, as appropriate (NIST SP 800-53: CP-6, CP-7, CP-8, and CP-9; NIST SP 800-34: 3.4.1, 3.4.2, 3.4.3; FCD-1; NIST CSF: PR.IP-4; FY 2018 CIO FISMA Metrics: 5.4; and NARA guidance on information systems security records)?

Defined (Level 2)

Comments: See remarks in question 67.2.

66 To what level does the organization ensure that information on the planning and performance of recovery activities is communicated to internal stakeholders and executive management teams and used to make risk based decisions (CSF: RC.CO-3; NIST SP 800-53: CP-2 and IR-4)?

Defined (Level 2)

Comments: See remarks in question 67.2.

67.1 Please provide the assessed maturity level for the agency's Recover - Contingency Planning function.

Defined (Level 2)

Comments: See remarks in question 67.2.

67.2 Provide any additional information on the effectiveness (positive or negative) of the organization's contingency planning program that was not noted in the questions above. Taking into consideration the maturity level generated from the questions above and based on all testing performed, is the contingency program effective?

We limited our testing to determining whether the agency possessed the noted policies, procedures and strategies required for each metric under the function area. If the policies, procedures and strategies were formalized and documented we rated the agency at level 2 (Defined). However, we did not conduct additional testing to determine whether the agency implemented the noted policies, procedures and strategies and we did not test to determine what additional steps the agency needs to complete to achieve a higher maturity level.

Calculated Maturity Level - Defined (Level 2)

Function 0: Overall

Function 0: Overall

0.1 Please provide an overall IG self-assessment rating (Effective/Not Effective)

Effective

Comments: CSB has demonstrated it has defined policy, procedures and strategies for all five of the information security function areas. The Office of the Inspector General (OIG) assessed the five Cybersecurity Framework function areas in adherence to the FY 2018 Inspector General (IG) Federal Information Security Modernization Act (FISMA) reporting metrics. If the policies, procedures and strategies were formalized and documented the agency was rated at level 2 (Defined). If not, we rated the agency at level 1 (Ad Hoc). Several areas within the CSB's information security program were identified at Level 1 – Ad Hoc. Based on our analysis, improvements are needed in the following areas: • Identity and Access Management: CSB does not include fully defined processes for Personal Identity Verification card technology for physical and logical access. • Incident Response: CSB has not identified nor fully defined its incident response processes.

0.2 Please provide an overall assessment of the agency's information security program. The narrative should include a description of the assessment scope, a summary on why the information security program was deemed effective/ineffective and any recommendations on next steps. Please note that OMB will include this information in the publicly available Annual FISMA Report to Congress to provide additional context for the Inspector General's effectiveness rating of the agency's information security program. OMB may modify the response to conform with the grammatical and narrative structure of the Annual Report.

CSB has demonstrated it has defined policy, procedures and strategies for all five of the information security function areas. The Office of the Inspector General (OIG) assessed the five Cybersecurity Framework function areas in adherence to the FY 2018 Inspector General (IG) Federal Information Security Modernization Act (FISMA) reporting metrics. If the policies, procedures and strategies were formalized and documented the agency was rated at level 2 (Defined). If not, we rated the agency at level 1 (Ad Hoc). Several areas within the CSB's information security program were identified at Level 1 – Ad Hoc. Based on our analysis, improvements are needed in the following areas:

- **Identity and Access Management: CSB does not include fully defined processes for Personal Identity Verification card technology for physical and logical access.**
- **Incident Response: CSB has not identified nor fully defined its incident response processes.**

APPENDIX A: Maturity Model Scoring

Function 1: Identify - Risk Management

Function	Count
Ad-Hoc	0
Defined	12
Consistently Implemented	0
Managed and Measurable	0
Optimized	0
Function Rating: Defined (Level 2)Not Effective	0

Function 2A: Protect - Configuration Management

Function	Count
Ad-Hoc	0
Defined	8
Consistently Implemented	0
Managed and Measurable	0
Optimized	0
Function Rating: Defined (Level 2)Not Effective	0

Function 2B: Protect - Identity and Access Management

Function	Count
Ad-Hoc	3
Defined	6
Consistently Implemented	0
Managed and Measurable	0
Optimized	0
Function Rating: Defined (Level 2)Not Effective	0

Function 2C: Protect - Data Protection and Privacy

Function	Count
Ad-Hoc	0
Defined	5
Consistently Implemented	0
Managed and Measurable	0
Optimized	0
Function Rating: Defined (Level 2)Not Effective	0

Function 2D: Protect - Security Training

Function	Count
Ad-Hoc	0
Defined	6
Consistently Implemented	0
Managed and Measurable	0
Optimized	0
Function Rating: Defined (Level 2)Not Effective	0

Function 3: Detect - ISCM

Function	Count
Ad-Hoc	0
Defined	5
Consistently Implemented	0
Managed and Measurable	0
Optimized	0
Function Rating: Defined (Level 2)Not Effective	0

Function 4: Respond - Incident Response

Function	Count
Ad-Hoc	2
Defined	5
Consistently Implemented	0
Managed and Measurable	0
Optimized	0
Function Rating: Defined (Level 2)Not Effective	0

Function 5: Recover - Contingency Planning

Function	Count
Ad-Hoc	0
Defined	7
Consistently Implemented	0
Managed and Measurable	0
Optimized	0
Function Rating: Defined (Level 2)Not Effective	0

Maturity Levels by Function

Function	Calculated Maturity Level	Assessed Maturity Level	Explanation
Function 1: Identify - Risk Management	Defined (Level 2)	Defined (Level 2)	See remarks in question 13.2.
Function 2: Protect - Configuration Management / Identity & Access Management / Data Protection & Privacy / Security Training	Defined (Level 2)	Defined (Level 2)	See remarks in question 45.2.
Function 3: Detect - ISCM	Defined (Level 2)	Defined (Level 2)	See remarks in question 51.2.
Function 4: Respond - Incident Response	Defined (Level 2)	Defined (Level 2)	See remarks in question 59.2.
Function 5: Recover - Contingency Planning	Defined (Level 2)	Defined (Level 2)	See remarks in question 67.2.
Overall	Not Effective	Effective	

Appendix B

CSB Response to Draft Report

U.S. Chemical Safety and Hazard Investigation Board

1750 Pennsylvania Avenue NW, Suite 910 | Washington, DC 20006
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Honorable Kristen M. Kulinowski
Interim Executive Authority

Honorable Manny Ehrlich, Jr.
Board Member

Honorable Rick Engler
Board Member

April 5, 2019

Mr. Rudy M. Brevard
Director, Information Resources Management Directorate
Office of Inspector General
Office of Audit and Evaluation
U.S. Environmental Protection Agency
Washington, DC 20460

Dear Mr. Brevard:

Thank you for the opportunity to review the FY2018 Federal Information Security Modernization Act (FISMA) draft report.

The Chemical Safety Board (CSB) acknowledges the six recommendations identified in the FISMA report and offers the following comments and observations with respect to the recommendations identified:

Recommendation #1: Implement use of Homeland Security Presidential Directive12 Personal Identity Verification card technology for physical and logical access, as required. If unable to implement this card technology, obtain a waiver from the Office of Management and Budget not to operate as required by the National Institute of Standards and Technology.

The CSB has identified the necessary software and settings in its Active Directory and Group Policy configuration and will work towards enabling PIV login for those employees with domain administrative responsibilities.

Expected Completion Date: 10/28/2019

Recommendation #2: Document policies and procedures for data exfiltration and enhanced network defenses, as required by National Institute of Standards and Technology Special Publication 800-53 (specifically, the "System and Information Integrity" control).

The CSB will more thoroughly document its system integrity controls, specifically according to NIST Special Publication 800-53, SI-1 (System and Information Integrity Policy and Procedures), and SI-4 (Information System Monitoring, specifically SI-4(4) and SI-4(18)) in the Information System Security Plan.

Expected Completion Date: 5/31/2019

Recommendation #3: Define and document incident handling policies and procedures that address containment, eradication and recovery, as required by National Institute of Standards and Technology Special Publication 800-53 (specifically, the Incident Response" control).

The CSB will review and revise the Information System Contingency Plan (ISCP) of the General Support System, which addresses data security, integrity, backup, recovery, and reconstitution; and the Incident Response policy in Appendix F of Board Order 34, *Information Technology Security Program.*

Expected Completion Date: 5/17/2019

Recommendation #4: Document and formalize within CSB policies and procedures the rationale for not having an automated system for the detection of potential incidents.

The CSB is a micro agency with a limited number of systems. System logging can generate alerts from firewalls, antimalware and antispam software, and server event logs (see Recommendation 5 for more detail), but the agency does not maintain a centralized system for detecting incidents across all systems. The CSB will work to document more thoroughly in the Information System Security Plan where and how these logging capabilities, alerts, and records are generated and kept.

Expected Completion Date: 5/31/2019

Recommendation #5: Document established procedures to generate alerts based on log data analysis and to record pertinent data for suspicious activity.

The CSB's systems record events and activity through various system logging capabilities--antispam logging, malware defense logs, Windows event logs, Cisco ASA firewall logs, application event logs, and so on. Some of these generate alerts based on unusual activity. The CSB will work to document more thoroughly in the System Security Plan where and how these logging capabilities, alerts, and records are generated and kept.

Expected Completion Date: 5/31/2019

Recommendation #6: Document an analysis for not purchasing antispam software or third-party monitoring; update the System Security Plan and Authorization to Operate, including a description of any compensating controls in place; and obtain the Authorizing Official signature on the updated plan, thereby accepting the risk of not implementing antispam software or third-party monitoring.

The CSB does not agree with this recommendation. In a series of emails between CSB and your office, we disputed the language presented to us at the time:

Incident Response: CSB neither identified nor defined its incident response processes for incident handling to include containment, eradication and recovery of systems. The CSB did not document or formalize the rationale for not having an automated system to detect potential incidents. Additionally, the agency did not document established procedures to generate alerts based on log data analysis, record pertinent data of suspicious activity, or implement antispam software or third-party monitoring technologies to response to cybersecurity events.

Our Chief Information Officer responded that the "CSB has long since implemented antispam software and third-party monitoring technologies: A centrally managed server running Malwarebytes for antimalware; McAfee Security for Microsoft Exchange on our mail server; and a Barracuda email gateway appliance scanning for spam and malware and known malicious IP addresses on the outside of the mail system with regular updates from the Barracuda subscription.

The CSB and OIG agreed that the wording was confusing and wasn't intended to indicate that we did not have antispam software and third-party monitoring technologies. It was the CSB's understanding that that section would be revised to read:

Incident Response: CSB neither identified nor defined its incident response processes for incident handling to include containment, eradication and recovery of systems. CSB has not documented or formalized the rationale for not having an automated system for detection of potential incidents. Additionally, CSB has not documented established procedures to generate alerts based on log data analysis and record pertinent data of suspicious activity to respond to cybersecurity events.

The agreed upon language as stated above is not reflected in your draft. Therefore, we believe that this recommendation is inaccurate. There is no risk. McAfee Security for Microsoft Exchange, Malwarebytes management console, the Barracuda email gateway, and the Barracuda web filter appliances at headquarters and the Western Regional Office provide this capability.

We therefore request that this recommendation be modified or removed.

Thank you again for the opportunity to provide our comments to this report. If you have any questions regarding our responses, please contact our OIG Liaison, Ms. Anna Brown, at (202) 261-7639.

Sincerely,

Dr. Kristen M. Kulinowski
Interim Executive Authority