National Science Foundation • Office of Inspector General
4201 Wilson Boulevard, Suite I-1135, Arlington, Virginia 22230

MEMORANDUM

DATE: January 31, 2018

TO: Dr. France Córdova, Director

Ms. Teresa Grancorvitz, Chief Financial Officer

FROM: Mark Bell, Assistant Inspector General, Office of Audits [redacted]

SUBJECT: National Science Foundation FY 2017 Management Letter

Attached is the National Science Foundation Fiscal Year 2017 Management Letter prepared by Kearney and Company. The letter includes observations and suggestions identified during the FY 2017 audit of NSF's financial statements (seven new observations and six repeat/revised observations, one of which relates to the prior year significant deficiency) that were not considered to be significant deficiencies in FY 2017. A draft of this report was previously submitted to your staff for comment and their comments were considered in preparing this final report.

We will not be tracking the corrective actions to this report separately, so we are not requesting a corrective action plan. However, Kearney will be following-up on these issues during the FY 2018 financial statement audit process.

We appreciate the cooperation that was extended to Kearney and us during this audit. If you have any questions, please call me at 703-292-2985 or Catherine Walters at 703-292-5018.

Attachment

cc: John Anderson
John Veysey
Ann Bushmiller
Fae Korsmo
Joan Ferrini-Mundy
Christina Sarris
Mike Wetklow
John Lynskey
Mary Louise Tillotson
Dan Hofherr
Rafael Cotto
Allison Lerner
Marie Maguire
Louise Nelson
Catherine Walters

KEARNEY&
COMPANY

1701 Duke Street, Suite 500, Alexandria, VA 22314
PH: 703.931.5600, FX: 703.931.3655, www.kearneyco.com

MANAGEMENT LETTER

To the Director and the Inspector General of the National Science Foundation:

In planning and performing our audit of the National Science Foundation (NSF)'s financial statements as of and for the year ending September 30, 2017, in accordance with auditing standards generally accepted in the United States of America; standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States; and Office of Management and Budget (OMB) Bulletin 17-03, *Audit Requirements for Federal Financial Statements*, Kearney & Company, P.C. (defined as "Kearney," "we," and "our" in this letter) considered NSF's internal control over financial reporting and compliance with provisions of applicable laws, regulations, contracts, and grant agreements in order to determine our auditing procedures for the purpose of expressing an opinion on the financial statements, and not to provide assurance on internal control over financial reporting or on compliance. Accordingly, we do not express an opinion of the effectiveness of NSF's internal control over financial reporting or on its compliance.

Our *Independent Auditor's Report on Internal Control Over Financial Reporting,* dated November 14, 2017, noted no material weaknesses or significant deficiencies. The prior-year significant deficiency related to Information Technology was resolved and cleared during the current-year audit.

Although not considered to be material weaknesses or significant deficiencies, we noted certain matters involving internal control that are presented in this letter for NSF's consideration. These observations and suggestions are intended to assist in improving NSF's internal control or result in other operating efficiencies. We have not considered NSF's internal control since November 14, 2017.

Exhibit I of this letter provides NSF management's response to the observations and suggestions detailed in this letter.

We appreciate the courteous and professional assistance that NSF's personnel extended to us during our audit. We would be pleased to discuss our observations and suggestions with NSF at any time.

The purpose of this letter is solely to communicate other deficiencies in internal control or any non-compliance noted during the audit to management and those charged with governance, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. Accordingly, this communication is not suitable for any other purpose.

Kearney & Company

Alexandria, Virginia

January 29, 2018

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MANAGEMENT LETTER COMMENTS

STATUS OF PRIOR YEAR MANAGEMENT LETTER FINDINGS

During the audit of the NSF's fiscal year (FY) 2016 financial statements, Kearney identified matters that were reported in an internal control report and a management letter. During the audit of the FY 2016 financial statements, Kearney assessed the status of the prior-year deficiencies. As described in the table below, five of the items reported in the FY 2016 Financial Management Letter were closed. Four control deficiencies reported in FY 2016 remained open and two new deficiencies were identified; its FY 2017 status is provided below.

PY No.	Financial - FY 2016 Management Letter Findings	Status
2016-FR-01	Payroll Personnel Actions	Open
2016-FR-02	Related Parties Disclosure	Open
2016-FR-03	Monitoring and Oversight over Undelivered Orders	Open
2016-FR-04	Grant Accrual	Closed
2016-FR-05	Personal Property Additions and Deletions	Open
2016-FR-06	Insufficient Monitoring of Contingency Funds	Closed
2016-FR-07	Intragovernmental Transactions Differences	Closed
2016-FR-08	Improper Payment Due to Duplicate Obligation	Closed
2016-FR-09	Monitoring of Cost Reimbursement Contracts and Awards	Closed
N/A	Insufficient Monitoring over Travel Authorizations	New
N/A	Insufficient Monitoring over Grants Post-Award Procedures	New

As part of the FY 2017 financial statement audit, Kearney also assessed the status of information technology deficiencies reported. As described in the table below, six of the items reported in the FY 2016 Information Technology Management Letter were closed. Three control deficiencies reported in FY 2016 remained open; their FY 2017 status is provided below.

PY No.	IT - FY 2016 Management Letter Findings	Status
2016-IT-01	iTRAK Separation of Duties Review of Access	Closed
2016-IT-02	WebTA Account Management	Open
2016-IT-03	Incomplete Review of Service Organization Controls (SOC) Report from Interior Business Center	Closed
2016-IT-04	Monitoring of iTRAK Configuration Controls	Closed
2016-IT-05	Monitoring and Reviewing of iTRAK Operating System and Database Audit Logging	Closed
2016-IT-07	Awards Application New User Provisioning for those with Obligating Authority	Open
2016-IT-08	Monitoring of Awards Operating System and Database Audit Logs	Open
2016-IT-09	Awards Application Review of Access	Closed
2016-IT-10	iTRAK System Security Plan (SSP)	Closed
N/A	Active Directory User Account Terminations	New

PY No.	IT - FY 2016 Management Letter Findings	Status
N/A	iTRAK Security Configurations and Monitoring of Audit Logs	New

MODIFIED REPEAT MANAGEMENT LETTER COMMENTS

1. Payroll

NFR 2017-FR-01: Payroll Personnel Actions
(Note: This NFR is derived from the 'Payroll Personnel Actions' management letter comment noted on the table above)

Background:

During the new hire process at the National Science Foundation (NSF), employees are required to submit several documents to Human Resources Management (HRM), including Form I-9, *Employee Eligibility Verification* and OF-306, *Declaration for Federal Employment*. Form I-9 is required to document verification of the identity and employment authorization of individuals hired for employment in the United States. Form OF-306 is required to determine individuals' acceptability for Federal and Federal contract employment.

Following the hiring process, all employees are provided with Standard Form (SF)-50, *Notification of Personnel Action Form*, a new version of which is generated whenever there is a change in the employee's personnel file. This form is also used when an employee separates from the agency.

NSF's *Onboarding and Separations Guide* mandates the actions required when an employee separates from NSF. The employee's Administrative Manager initiates the separation process with a clearance e-mail that includes the employee's name and effective date of separation. The separating employee is then required to complete NSF Form 362, *Employee Separation Clearance*. This form is used to notify appropriate directorates and offices of the employee's pending separation so that they can take steps to collect property, terminate accounts, and collect badges. Once HRM processes this action in Federal Personnel/Payroll System (FPPS), a new SF-50 is generated to document the separation.

Observations:

During the FY 2016 audit, we noted that NSF personnel actions for Senior Executive Service (SES) awards were initiated and approved by the same HRM staff, which resulted in a segregation of duties issue. We recommended that NSF develop and implement policies and procedures that mitigate the risks of a lack of separation of duties for processing and approving SES awards. Also in FY 2016, we noted that NSF processed personnel actions in which the required documentation/forms were incomplete, missing, or untimely submitted.

NSF has taken steps in FY 2017 to resolve the prior-year issue by separating the responsibilities for processing and approving SES awards. However, NSF has not resolved its payroll personnel process deficiencies related to new hires and separations.

During testing over payroll personnel actions, we identified the following discrepancies:

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- **New Hires**
  - Form I-9 *Employee Eligibility Verification* was missing for 3 of the 38 employees tested and one form was not properly completed/approved (i.e., lack of employer or Authorized Representative signature).
  - Form OF-306 *Declaration for Federal Employment* was not properly approved (i.e., lack of Appointing Officer signature) for three of the 38 employees tested, and three of the forms were missing.

- **Separations**
  - NSF Form 362 *Employee Separation Clearance* had exceptions for 9 of the 34 employees tested. Three forms were missing, five forms were untimely, and one form was not properly completed (i.e., no employee signature)
  - Form SF-50 *Notification of Personnel Action Form* was not processed/approved timely (approval occurred a full pay period after their separation) for 2 of 34 employees tested.

<u>Suggestions</u>:

We suggest that NSF establish standardized processes to ensure the validity and accuracy of payroll actions. Specifically, NSF should:

1. Based on recently updated policies and procedures (i.e., Employee Onboarding & Separation Guide, released in June 2017) we recommend NSF take appropriate actions to ensure staff (e.g. employees, supervisors, and Administrative Managers) are aware of their responsibilities during the new hiring and separation process. Further, we recommend NSF ensure that all necessary documentation is retained properly for documentation and audit trail purposes.
2. Conduct appropriate training, on a periodic basis, to applicable NSF personnel (e.g., Supervisors, Administrative Managers, etc.) to ensure proper execution over the complete and timely submission of the required forms/documentation regarding personnel actions (i.e., new hires, separations).
3. Implement a workflow to properly track and ensure completion of the required forms/documentation regarding personnel actions (i.e., new hires, separations).

2. Undelivered Orders

NFR 2017-FR-02: Monitoring and Oversight over Undelivered Orders
(<u>Note:</u> This NFR is derived from the 'Monitoring and Oversight over Undelivered Orders' management letter comment noted on the table above)

Background:

Obligations are definite commitments that will result in outlays, immediately or in the future. NSF records obligations in its financial management system when it enters into an agreement, such as a contract or purchase order, to purchase goods and services. Once recorded, obligations remain open until they are fully reduced by a disbursement, are de-obligated, or until the appropriation funding the obligations is cancelled. NSF reduces the obligated balance when payments are made. The undelivered orders (UDO) balance represents the cumulative amount of orders, contracts, and other binding agreements for which payment has not yet been made.

Agencies should maintain policies, procedures, and information systems to ensure that UDOs continue to represent required future Federal outlays. NSF has developed and implemented policies and procedures for the contract closeout process that include the de-obligation of excess funds. During the closeout process, NSF uses a Contractor Performance Evaluation (CPE) form to document the end of a contract or interagency agreement, in order to determine whether the outstanding funds are ready for de-obligation and ultimately closeout. Therefore, although a similar process for monitoring and closing UDOs was implemented, areas of improvement were identified to properly execute UDO monitoring and achieve timely closeouts.

NSF reported more than $404.5 million in non-grant related UDOs, as of June 30, 2017, that covered a broad range of budgetary authority, including annual, multi-year, and no-year appropriations.

Observations:

During FY 2016, we identified various invalid open obligations due to lack of proper monitoring and oversight over various types of outstanding obligations such as contracts, travel, relocation, and interagency agreements. We recommended that NSF implement formal policies and procedures that enabled communication across NSF offices to properly assess the validity and accuracy of outstanding obligations balances. NSF has taken the appropriate corrective actions in FY 2017 to resolve travel-related and relocation-related UDO issues. However, invalid outstanding UDO balances remain for contract and interagency agreement obligations.

We tested the validity of a sample of 34 UDOs, totaling $11.49 million, out of a population of 2,984 UDOs, totaling $27.55 million as of June 30, 2017. We focused our testing on those UDOs that had no activity during FY 2017, because we considered them to have a higher risk for invalidity.

During our testing, we identified 12 invalid open obligations, totaling $2.52 million. The invalid obligations consisted of 10 non-Federal (four contract-related totaling $2.26 million) and two Federal (interagency agreements totaling 262 thousand) transactions. We determined that these UDOs were invalid based on inactivity, lack of supporting documentation, or inability to support bona fide need to keep the outstanding obligation open.

Non-Federal (Contract related) UDOs: The Division of Acquisition and Cooperative Support (DACS) uses the FAR guidance (i.e., closeout time standards) as part of its contract closeout process, which includes the determination of whether excess funds should be de-obligated. For contract related UDO transactions, DACS noted that the related contractual instruments fall under the 20-month time requirement for closeout. Although the 20-month period had not expired, the UDO transactions had no disbursement or expenditure activity for over a year. DACS informed us that no additional expenditures were expected, thus confirming that the funds were ready for de-obligation.

Federal (Interagency Agreement) UDOs: BFA (i.e., DACS, Division of Grants and Agreements [DGA], etc.) oversees interagency agreements entered into by NSF and other Federal agencies. Although a shared responsibility exists in the oversight of interagency agreements, BFA heavily relies on the receiving agencies to determine UDO validity and whether the agreements are ready for closeout. BFA informed us that no additional expenditures were expected, thus confirming that the tested UDO balances were ready for de-obligation.

<u>Suggestions</u>:

We suggest that NSF:

1. Implement a complete UDO certification process (which includes NSF's revised closeout process) that identifies and assesses UDO balances that have a higher risk of invalidity, and provide documentation of the review of the status of the UDO balances that lack of expenditure activity for a prolonged period.
2. Conduct appropriate training and perform formal communication (e.g., correspondence, minutes, etc.), on a periodic basis, to applicable NSF personnel (i.e., Contract Officers, Contracting Officer Representative, Program Offices) to ensure proper execution over the monitoring of UDO balances, and timely de-obligations of invalid UDO balances.

3. Property

NFR 2017-FR-03: Property Additions and Deletions

(<u>Note:</u> This NFR is derived from the 'Personal Property Additions and Deletions' management letter comment noted on the table above)

<u>Background</u>:

NSF records asset additions through purchase, gain-by-inventory (i.e., lost/found), transfer from another entity, or construction. NSF capitalizes general Property, Plant, and Equipment (PP&E) with an acquisition cost of $25,000 or greater and a useful life of two or more years. Depreciation of property is calculated based on the straight-line method using a half-year convention. NSF does not have a property sub-ledger system in its financial reporting system, iTRAK; rather, asset activity (e.g., additions, deletions, transfers, depreciation, etc.) is recorded via journal vouchers (JV) as part of the quarterly property reporting process.

NSF records asset acquisitions at the original cost of the asset. Assets transferred to NSF from other entities are reported at net book value (NBV) or the value assigned by the donating agency. The acquisition cost of the asset includes all costs associated with placing the asset into service (e.g., purchase cost, shipping/freight, installation costs, etc.). Based on the type of property acquired, a useful life is assigned to each asset to calculate and record depreciation.

NSF disposes of assets when they are lost, damaged, or no longer useful to operations or mission objectives. Assets externally held are reviewed by a NSF Property Analyst before disposal. When disposal or destruction of an asset occurs, the change in status must be documented via a Property Adjustment Documentation (PAD) form authorized by the Property Analyst.

Observations:

During the FY 2016 audit we found that NSF recorded capital equipment additions both untimely and inaccurately (i.e., prior-year acquisitions). We also noted assets were removed from NSF's records while the assets remained in use.

NSF has taken steps in FY 2017 to resolve the prior-year issues noted through the implementation of a new Asset Management System (AMS) in December 2016. Additionally, to improve oversight and communication between DAS, OPP, and contractors, NSF implemented procedures to streamline the process for approving external Property, Plant, and Equipment actions. Although NSF has taken action to improve its processes, we noted several issues associated with both internally and externally held capital equipment and real property during FY 2017. Therefore, improvements in the internal control procedures over the acquisition and removal of property assets are still needed.

During testing over external and internal property, we identified the following discrepancies:

- **Capital Equipment Additions (Internal)**
  - For two of the seven capital equipment additions tested, NSF incorrectly recorded asset acquisition costs. As a result, one asset's acquisition cost was overstated by $4,114.38, while the other was understated by $4,187.38.
  - For one of the seven capital equipment additions tested, NSF did not provide sufficient supporting documentation (e.g., purchase order, invoice, receiving documentation) to corroborate the asset acquisition cost.

- **Capital Equipment Additions (External)**
  - For one of the 14 capital equipment additions tested, we noted that the asset was acquired during FY 2016 through a transfer transaction between NSF and Fort Belvoir Army Base. Although the asset was transferred in FY 2016, it was not recorded until FY 2017 resulting in an acquisition from the prior year being recorded in the current year.
  - For one of the 14 capital equipment additions tested, NSF did not provide sufficient supporting documentation (e.g., invoice) to corroborate the asset acquisition cost.

- For one of the 14 capital equipment additions tested, NSF incorrectly recorded the asset acquisition cost. As a result, NSF overstated the acquisition cost of the asset by $3,315. Further, we noted that that this asset was associated with the purchase of two other identical additional assets at the same incorrect asset acquisition cost. Thus, the three identical assets resulted in an overstatement of $9,945.

- **Real Property Additions**
  - For one of the three real property additions tested, the asset was acquired during FY 2016, but not recorded until FY 2017. On the June 30, 2017 Real Property Schedule, NSF recorded the asset acquisition cost and a prior-year depreciation adjustment for $211,152.06 and $4,223.04, respectively. Although adjusting entries were made to correct the asset account and related accumulated depreciation in the current year, the asset addition was not reported in the correct period.

- **Capital Equipment Deletions (External)**
  - For two of the 18 capital equipment deletions tested, NSF was unable to provide supporting documentation (i.e., Disposal/Destruction form) to corroborate the date of asset disposal.

Suggestions:

We suggest that NSF:

1. Update and implement policies and procedures to require and enforce the review and retention of proper supporting documentation (i.e., invoices, receiving reports, disposal forms) to corroborate capital equipment transactions including both acquisition and disposal.
2. Update and implement policies and procedures to thoroughly describe the asset transfer process, including the review of such actions, to ensure proper accounting for asset transfers between NSF and other federal entities including document retention and review requirements. Additionally, policies and procedures should define the appropriate roles and responsibilities for both NSF and Antarctic Support Contract (ASC) personnel.

4. Related Parties

NFR 2017-FR-06: Related Parties Disclosure
(Note: This NFR is derived from the 'Related Parties Disclosure' management letter comment noted on the table above)

Background:

NSF provides the opportunity for scientists, engineers, and educators to join NSF as temporary program directors and advisors. These "rotators" provide input during the merit review process of proposals; provide insight for new directions in the fields of science, engineering, and education; and support cutting-edge interdisciplinary research. Rotators can come to NSF under multiple mechanisms. The largest number of rotators come on Intergovernmental Personnel Act (IPA) assignments, in which they are assigned for up to four years while remaining employees of their home institutions. Rotators serve in various positions throughout NSF, and as of September 2017, IPAs led five of NSF's seven science directorates[1].

All rotators are subject to conflict of interest statutes, as well as the Government-wide Standards of Ethical Conduct of Employees of the Executive Branch, which prohibit them from participating in NSF proposals and awards affecting themselves and their home institutions. Although rotators are subject to policies that are designed to prevent the occurrence of any conflicts of interest, some rotators do participate in the policy decisions of the agency. NSF facilitates IPA assignments through grants to the IPA's home institution as whole or partial reimbursements for the institution's salary and benefits payments to its employee. In some instances, NSF may also make other unrelated awards to rotators' home institutions through its normal course of business.

The Federal Accounting Standards Advisory Board (FASAB) issued Statement of Federal Financial Accounting Standards (SFFAS) No. 47, *Reporting Entity*, to address related parties in the Federal Government. Specifically, SFFAS No. 47 states that participation in the policy decisions of an agency leads to the creation of a related party, and does not include any language that restricts or prohibits agencies from reporting related parties. In addition, SFFAS No. 47 states that "judgment will also be required to identify relationships that warrant disclosure." However, SFFAS No. 47 becomes effective for periods beginning after September 30, 2017, and does not permit earlier implementation. Therefore, until fiscal year (FY) 2018, Government entities follow the Financial Accounting Standards Board (FASB) Financial Accounting Standard (FAS) No. 57, *Related Party Disclosures*, which provides examples of related party transactions and requires the disclosure of material related party transactions. Although FASAB states[2] that "the related party guidance was not readily adaptable to the federal government," it does not preclude an agency from using FAS No. 57 as guidance on reporting.

Observations:

During FY 2016, Kearney identified insufficient disclosures regarding awards to affiliated parties. Specifically, we noted awards to affiliated parties (e.g., NSB members) were only reported for the current year and not prior year even though the financial statements include both the current and prior years (lack of comparative purpose review). Further, we noted NSF included disclosures over IPAs (rotators) to provide insights into the rotator program including who rotators are and what they do at NSF. However, we noted insufficient disclosures about IPAs who hold senior management or executive-level positions. NSF has taken steps in FY 2017 to resolve the prior-year issue over reporting affiliated party awards by including additional language explaining that comparative schedules may be misleading due to NSF turnover (i.e., length of NSB members' term). However, NSF has not fully disclosed information about IPAs who hold senior management level positions.

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[1] As noted in the OIG's Memorandum "Management Challenges for NSF in FY 2017."

[2] SFFAS 39, *Subsequent Events: Codification of Accounting and Financial Reporting Standards Contained in the AICPA Statements on Auditing Standards*

During FY 2017, we noted that NSF included additional language in Note 1 of its Agency Financial Report (AFR), which provides a link that discloses NSF's funding to all institutions that receive NSF awards. However, we noted that it did not disclose information about rotators who hold senior management positions at NSF. IPAs lead five of NSF's seven directorates as Assistant Directors and are responsible for providing leadership and direction to accomplish the agency's mission, hence, these individuals have the ability to participate in policy decisions at the agency. Although an IPA's relationship to NSF differs from an NSB member's relationship to NSF, lack of disclosures over these executive-level IPAs reduces transparency.

Suggestions:

We suggest that NSF update the footnotes (Note 13 in FY 2017) to include disclosures about executive-level rotators in the Awards to Affiliated Institutions, specifically:

1. The disclosure should make a distinction between the relationship of a NSB member to NSF and that of an executive-level IPA to NSF, and specifically disclose that these executive-level rotators have the ability to participate in policy decision at the agency (hence are affiliated parties).
2. The disclosure should include, at a minimum, the overall dollar amount awarded to the executive-level rotators' home institutions in the current FY and a description of the relationship.

5. Information Technology

NFR 2017-IT-02: Awards Application New User Provisioning
(Note: This NFR is derived from the 'Awards Application New User Provisioning for those with Obligating Authority" management letter comment noted on the table above)

Observations:

During the FY 2016 audit, we found that NSF had not documented the process for providing access to the Awards application for those employees who are Grants and Contracting Officers with authority to obligate funds. In addition, we found that NSF had not established a standard form to formally approve obligating access within Awards. We recommended that NSF update its procedures for defining which roles in the Awards application required formal approval, and that NSF establish a standard approval form for provisioning new users for the Awards application.

NSF has taken steps during FY 2017 to address the issues related to new user provisioning for Awards. Specifically, we found that NSF has documented the Grants and Contracting Officer roles, which have the authority to obligate funds, in the Awards Setup Guide. However, NSF did not follow the process to authorize Awards application users before access is granted per the Awards Setup Guide.

Suggestions:

We suggest that NSF follow the standard approval process documented in the Awards Setup Guide to authorize Awards application users.

6. Information Technology

NFR 2017-IT-03: Monitoring of Awards Operating System and Database Logs
(Note: This NFR is derived from the "Monitoring of Awards Operating System and Database Audit Logs" management letter comment noted on the table above)

Observations:

During the FY 2016 audit, we found that NSF did not monitor the financially-relevant activities of Operating System (OS) administrators or Database Administrators (DBA) within the Awards application. In addition, we found that while NSF had a program for logging and monitoring some activities of Awards OS administrators and DBAs, it did not effectively define the critical OS or DBA events to be logged, aggregated, reviewed, and followed-up upon. Finally, NSF did not ensure that individual Awards OS administrators and DBA were prevented from reviewing the logs of their own activities. We recommended that NSF perform and document a risk-based assessment of critical actions that should be logged, aggregated, reviewed, and followed-up upon for OS administrators and DBAs, and also that NSF implement a logging and monitoring process based on the completed risk assessment.

NSF has taken steps in FY 2017 to resolve the prior-year issue by performing a risk-based assessment over the critical actions that should be logged. However, the assessment was not documented, and NSF has not yet defined specific events to log and review for Awards database and operating system, therefore NSF is currently logging all events. In addition, the process for monitoring OS administrator and DBA activities has not been fully implemented.

Suggestion:

We continue to suggest that NSF fully implement an active logging and monitoring process based on the completed risk assessment.

7. Information Technology

NFR 2017-IT-04: webTA Account Management (Note: This NFR is derived from the 'webTA Account Management" management letter comment noted on the table above)

Observations:

NSF did not formally approve new user and recertification requests for elevated access to the webTA application in a timely manner to comply with the Standard Operating Procedures (SOP) for WebTA Administration. NSF Payroll supervisors are required to request and approve webTA elevated user access and perform recertification reviews of webTA elevated[3] users. We noted that one (1) out of eight (8) new user request forms was signed after the user gained elevated access to the application. In addition, we found that eighteen (18) out of forty-five (45) recertification forms for users with elevated access were signed after the period designated for reviewing existing user accounts. NSF stated that the forms should have been submitted as new access requests rather than recertification forms.

Suggestion:

We suggest that NSF comply with its process for authorizing user access to webTA per the SOP for webTA and retain all user access forms.

[3] Elevated functions within webTA allow access beyond the routine time and entry functions which are allocated to every webTA user. Elevated functions include certifying timesheets, approving leave and premium pay requests, and assigning organizational roles for webTA.

NEW MANAGEMENT LETTER COMMENTS

8. Travel

NFR 2017-FR-04: Insufficient Monitoring over Travel Authorization and Vouchers

Background:

The National Science Foundation (NSF) uses ConcurGov (Government Edition) as its E-government travel system. ConcurGov is a commercial off-the-shelf cloud-based travel system used by NSF employees to book travel, create and submit travel authorizations and vouchers, attach receipts to validate costs incurred during travel performed, and perform travel approvals (i.e., authorization and vouchers). According to NSF's Travel Policy and Federal Travel Regulations (FTR), travel authorizations require approval prior to travel occurring and travel vouchers must be submitted within five working days upon the completion of travel.

In addition to ConcurGov, NSF also uses the GUEST system for travel expense reimbursement for participants in meetings (e.g., panel, advisory committee, site visits, etc.) that fall under the Federal Advisory Committee Act (FACA). This type of meeting is created in MyNSF and GUEST creates an estimated obligation for these meetings. The appropriate authorizing official (i.e., Division Director or Assistant Director) is required to approve the obligation associated with the meeting created at least four business days prior to the start of the meeting. If the program office fails to approve the obligation by the deadline, GUEST automatically approves the meeting, which authorizes the obligation, to ensure that regulations for funding of Federally-sponsored activities are met (i.e., to prevent Anti-Deficiency Act violations). GUEST is a travel system owned and administered by NSF.

Observations:

We statistically sampled 71 non-grant expense transactions and 39 non-grant new obligation transactions that occurred during the period October 1, 2016 through June 30, 2017. Further, we obtained and reviewed the Division of Administrative Services (DAS) Travel Voucher Aging Report to review the current status of outstanding travel vouchers and identify untimely travel voucher submissions. During testing, we identified the following discrepancies:

- **Accounts Payable / Expense Testing**
  - For one of the 71 expense transactions tested, the travel voucher was not submitted by the traveler within the required five working days after the final day of travel. The trip was completed on August 21, 2016, but the travel voucher was submitted April 3, 2017, over 200 days late.
  - For one of the 71 expense transactions tested, the GUEST system performed an auto-obligation of funds for a panel meeting that had not been appropriately approved by an authorizing official (i.e., Division Director or Assistant Director) before the deadline of four business days prior to the start of the meeting. The auto-obligation

process lacks the physical approval by an authorizing official to certify that the panel/meeting was valid and reasonable.

- **New Obligations Testing**
  - For one of the 39 new obligations tested, the GUEST system performed an auto-obligation of funds for a panel meeting that had not been appropriately approved by an authorizing official (i.e., Division Director or Assistant Director) within four business days prior to the start of the meeting. The auto-obligation process lacks the physical approval by an authorizing official to certify that the panel/meeting was valid and reasonable.

- **Travel Voucher Aging Report**
  - The Travel Voucher Aging Report displays all outstanding vouchers as of the date the report is run. Kearney obtained the Travel Voucher Aging Report as of September 30, 2017, and noted various instances in which travel vouchers were either not submitted or exceeded the five working days submission requirement. Further, we noted significant delays that resulted in instances in which either the travel voucher was currently in process but not yet submitted in ConcurGov or the travel voucher has not yet been created. These instances indicate travel vouchers were not timely submitted in accordance with FTR guidelines (i.e., travel voucher must be submitted five working days upon the completion of travel). The table below lists the nature, extent, and timing of the submission delay and the current status of the travel voucher:

Days Since Last Day of Trip	No Travel Voucher Created		Travel Voucher Created, not Submitted	
	Count	Dollar Amount	Count	Dollar Amount
Over 30 days	19	$39,678.34	6	$8,209.50
Over 90 days	2	$1,481.00	2	$2,654.81
Over 180 days	1	$891.25	2	$1,168.25
Over 1 year	23	$30,594.10	9	$14,684.64
TOTAL	**45**	**$72,644.69**	**19**	**$26,716.75**

Based on the table above, we noted a total of 64 instances where travel vouchers were not submitted within five working days upon the employee's completion of travel, half of which were outstanding over a year.

Suggestions:

We suggest that NSF:

1. Strengthen internal controls within the programs to ensure NSF employees generate and submit travel vouchers in a timely manner in accordance with FTR guidelines.

2. Implement policies and procedures that require GUEST system travel/meetings to be properly approved by an Authorizing Official prior to the meeting start date, thus preventing the use and reliance on auto-obligations by the GUEST system.
3. Train the Directorate/Division staff to run the ConcurGov Outstanding Voucher Report to assist them in properly monitoring and tracking the status of their staff's outstanding travel vouchers, and to prevent significant delays in the travel voucher submittal process.

9. Grants

NFR 2017-FR-05: Insufficient Monitoring over Grants Post-Award Procedures

Background:

NSF's post-award monitoring activities are intended to ensure that awardee institutions possess adequate policies, processes, and systems for managing awards in accordance with Federal regulations. NSF has developed policies and procedures to perform post-award monitoring through site visits (an advanced monitoring process) and post-award adjustment reviews (PAAR).

The advanced monitoring site visit process conducted by the Division of Institution and Award Support's (DIAS) Resolution and Advanced Monitoring (RAM) Branch, is designed to foster communication between awardees and NSF and to ensure that NSF's awardees are effective in achieving their individual missions through the use of sound business and administrative practices. After a visit, the Site Visit Team has 90 days to prepare a site visit report for internal distribution and a site visit letter with recommendations for the awardee.

In addition to site visits, DIAS' RAM performs reviews of post-award adjustments of $25,000 or greater applied to awards that have been financially closed. In accordance with NSF policies and procedures, an awardee may request post-financial closeout adjustments if they need to draw funds for allowable expenses that have not been previously submitted to NSF using the Award Cash Management System (ACM$) or if they need to remit funds previously drawn down due to a reduction in expenditures. The purpose of a PAAR is "to determine whether to allow or disallow the costs associated with post award adjustments, in accordance with the applicable cost principles and award terms and conditions." According to RAM guidance, PAARs are "typically completed within 120 days" from the date the Division of Financial Management (DFM) provides a listing to RAM for review. Subsequently, awardees are given 30 days to provide supporting documentation and the RAM Cost Analyst or contractor completes the review within 90 days.

Observations:

We performed testing over advanced monitoring site visits completed during the period of October 1, 2016 through June 30, 2017. The site visit sample consisted of 8 randomly selected awardees from a total of 18 completed site visits. Additionally, we performed testing over 22

PAARs, out of a total of 41 PAARs that were completed/reviewed by NSF between October 1, 2016 and June 30, 2017. During our testing, we identified the following discrepancies:

- **Advanced Monitoring – Site Visits**
  - One of eight samples tested did not include a Program Office Consultation Form, which should be completed prior to the site visit. The purpose of this form is to conduct a preliminary assessment (prior to the site visit) over the Awardee's overall performance from a programmatic perspective and determine if there are programmatic concerns that warrant further review before or during the site visit. This form contributes to planning of areas to be assessed and site visit team familiarity with technical goals of the award to be reviewed.

- **Post Award Adjustment Review**
  - Seventeen of 22 samples tested had exceptions as listed below (Note: In some instances, multiple exceptions were noted within a sample transaction):
    - Awardee information was received late (i.e., received more than 30 days after the RAM Lead Analyst requested supporting documentation such as invoices, receipts, or timesheets). (5 samples affected)
    - PAAR Letters were completed late (i.e., completed more than 90 days after NSF received the awardee information) (15 samples affected)
    - Disallowed costs of $1,400.92 noted within the Awardee's Decision Letter were not recorded in NSF's PAARs Listing (Note: Although the Disallowed Cost letter was sent to the grantee, we noted the discrepancy between the PAAR Listing and supporting documentation indicates a lack of completeness in NSF's records.) (1 sample affected).

Suggestions:

We suggest that NSF:

1. Clarify and communicate to staff the importance of conducting consultations with and obtaining input from Program Officers prior to performing advanced monitoring site visits; and document those instances when a meeting is not possible prior to conducting a site visit.
2. Conduct and formally document communication (e.g., status meetings – bi-weekly, monthly, etc.) to follow-up with appropriate personnel to ensure proper execution of the complete and timely submission of the required forms/documentation (e.g., PAAR Letters).
3. Develop and implement a PAAR action plan/timeline to ensure all PAARs are reviewed and completed within a timely manner by DIAS RAM.
4. Develop a communication strategy (e.g., monthly emails, informative pamphlets, etc.) to convey to awardees the importance of providing documentation promptly so that NSF can complete and review PAARs timely.

10. Information Technology

NFR 2017-IT-01: Active Directory User Account Termination

Observations:

NSF did not disable the Active Directory (AD) account for a terminated user in a timely manner. The AD provides authentication and authorization mechanisms to NSF's General Support System (GSS) applications, including Awards. NSF policy requires that AD accounts be disabled within two business days of employee termination, and NSF uses a ticketing process to identify and manage account disabling. During our review of active Awards user accounts, we found that one (1) of the 87 unique active Awards accounts was also listed on the Human Resources (HR) "Fed Separation" listing. The specific user was separated from NSF on April 28, 2017, and the email to request disabling of the user's AD account was submitted on April 29, 2017. However, the email was not acted upon to create the ticket until May 12, 2017, thus allowing the user access to NSF's GSS applications, including Awards, for 10 business days after termination.

Suggestion:

We suggest that NSF implement a process to monitor and close out any assigned tickets related to AD accounts in accordance with the NSF policy.

11. Information Technology

NFR 2017-IT-05: Security Configurations and Monitoring of Audit Logs for the iTRAK Operating System (OS)
(Note: This observation is related to a finding noted on the FY 2017 FISMA Performance Audit Report [dated November 30, 2017], FISMA 2017-02: NSF Security Configurations and Baseline Requirements)

Observations:

The National Science Foundation (NSF) has not implemented effective audit logging for the Windows Operating System (OS) supporting iTRAK.

National Institute of Standards and Technology (NIST) Special Publication (SP) 800-70, *National Checklist Program for IT Products: Guidelines for Checklist Users and Developers,* Revision (Rev.) 3, Section 2.1, provides the following definition of security configuration checklists:

> *A security configuration checklist (also referred to as a lockdown guide, hardening guide, security guide, security technical implementation guide [STIG], or benchmark) is essentially a document that contains instructions or procedures for configuring an IT product to an operational environment, for verifying that the product has been configured properly, and/or for identifying unauthorized configuration changes to the product. The IT product may be commercial open source, government-off-the-shelf (GOTS), etc.*

Although operating systems come with default settings for security configurations, it is incumbent on user organizations to determine which settings should be updated to reflect organizational policy and address threats and vulnerabilities specific to the organization's environment.

During most of FY 2017, NSF relied on the audit logs created under the default security configuration settings for the Windows OS supporting iTRAK. The default settings did not adequately define which critical events, such as privileged use, should be logged. On September 12, 2017, NSF took action to update the OS configuration settings and provided evidence of the STIG Group Policy Object[4] (GPO). However, NSF has not had sufficient time to fully implement its monitoring and reviewing activities based on the updated configuration.

Suggestion:

We suggest that NSF continues to monitor and review the audit logs generated by the updated STIG GPO settings for the Windows OS, which were set in place by NSF on September 12, 2017. (Note: For further detail on suggestions over this observations, see the FISMA Performance Audit Report [dated November 30, 2017], FISMA 2017-02: NSF Security Configurations and Baseline Requirements)

[4] A collection of settings that define what a system will look like and how it will behave for a defined group of users.

Exhibit I – NSF Management's Response to Management Letter

OFFICE OF BUDGET, FINANCE & AWARD MANAGEMENT

MEMORANDUM

JAN 2 3 2018

To: Mark Bell, Assistant Inspector General for Audit

[redacted]

From: Teresa A. Grancorvitz, Acting Chief Financial Officer and Head/BFA

Subject: Management Response to Fiscal Year 2017 Management Letter

This memorandum responds to the transmittal of Kearney and Company's Fiscal Year 2017 Management Letter received on January 12, 2018. We appreciate the opportunity to respond to the letter.

As previously stated during the Notice of Findings and Recommendations process, we generally agree with most of the recommendations to improve the National Science Foundation's operations. In some instances, we are further assessing the root causes underlying the findings so that we'll be better able to resolve them.

We will continue to work with the Office of Inspector General to manage internal control issues and mitigate their impact, where appropriate. In the meantime, if you have any questions or require additional information, please contact Mike Wetklow, Deputy Chief Financial Officer at (703) 292-8280.

cc: Catherine Walters, OIG
Mike Wetklow, DFM
John Lynskey, DFM
Christina Sarris, OD
Larry Rudolph, OGC
Sandy Scholar, OGC
Theresa Grancorvitz, BFA
Michael Sieverts, BD
Anthony M. DiGiovanni, BD
Dale Bell, DIAS
Alex Wynnyk, DIAS
Jean Vanski, DIAS
Karen Tiplady, DGA
Jamie French, DGA
Theresa Garnes, DACS
Jeff Lupis, DACS
Matt Hawkins, LFO