



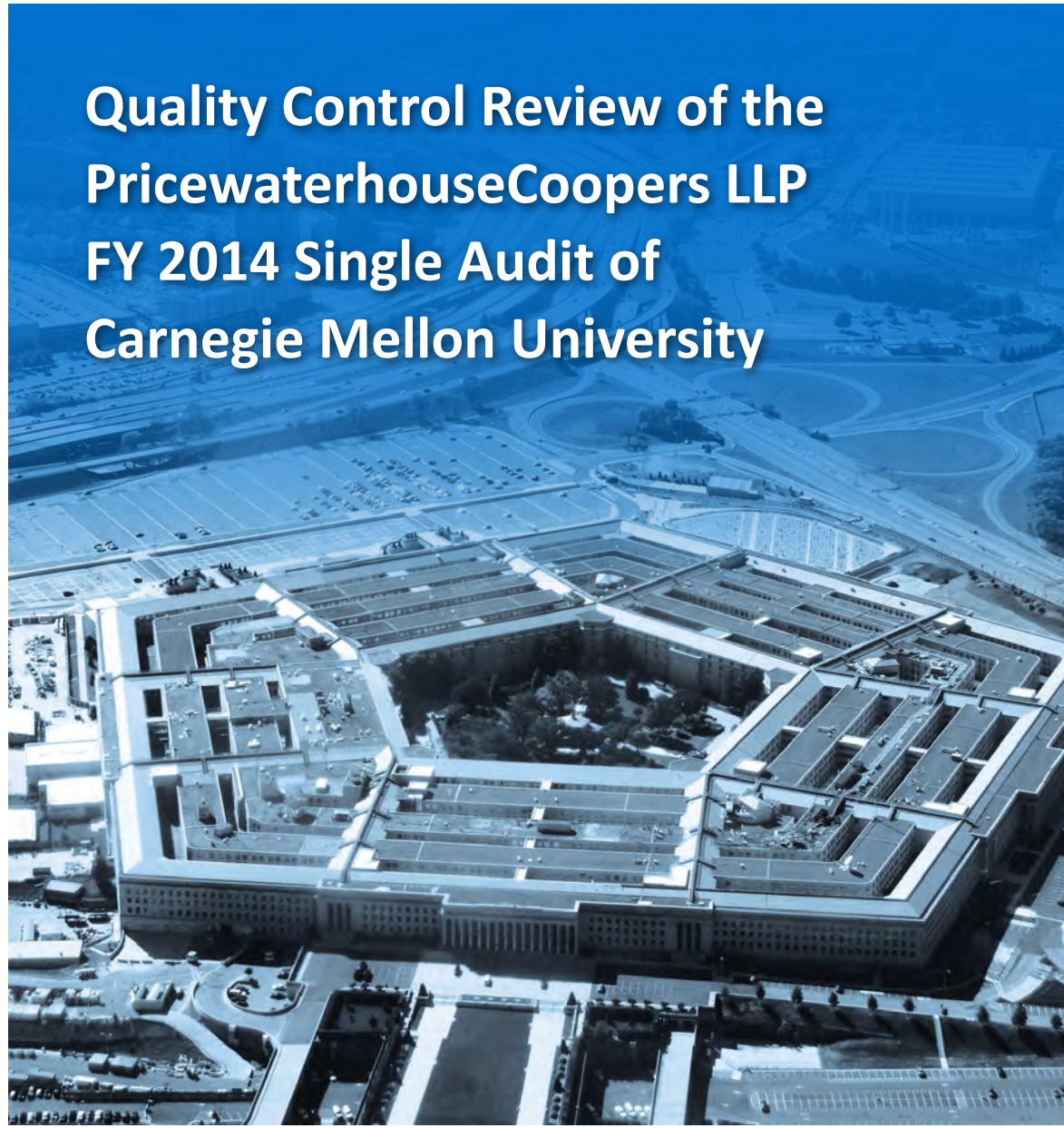
# INSPECTOR GENERAL

*U.S. Department of Defense*

DECEMBER 17, 2015



## Quality Control Review of the PricewaterhouseCoopers LLP FY 2014 Single Audit of Carnegie Mellon University



INTEGRITY ★ EFFICIENCY ★ ACCOUNTABILITY ★ EXCELLENCE

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

December 17, 2015

Audit Partner  
PricewaterhouseCoopers LLP

Board of Trustees  
Carnegie Mellon University

Director, Sponsored Projects Accounting  
Carnegie Mellon University

SUBJECT: Quality Control Review of the PricewaterhouseCoopers LLP FY 2014 Single Audit  
of Carnegie Mellon University (Report No. DODIG-2016-034)

We are providing this report for your information and use. We considered management comments on a draft of this report when preparing the final report. Comments from PricewaterhouseCoopers LLP were responsive to our recommendations; therefore, we do not require additional comments.

As the cognizant Federal agency for Carnegie Mellon University, we performed a review of the PricewaterhouseCoopers LLP single audit report and supporting audit documentation for the year ended June 30, 2014. The purpose of our review was to determine whether the single audit was conducted in accordance with auditing standards and the requirements of Office of Management and Budget (OMB) Circular A-133, "Audits of States, Local Governments, and Non-Profit Organizations." We conducted this quality control review in accordance with the "Quality Standards for Inspection and Evaluation" published by the Council of the Inspectors General on Integrity and Efficiency (CIGIE) in January 2012.

Carnegie Mellon University complied with OMB Circular A-133 reporting requirements for the FY 2014 single audit. However, PricewaterhouseCoopers LLP did not fully comply with auditing standards and OMB Circular A-133 requirements for the Carnegie Mellon University FY 2014 single audit. Specifically, the auditors did not adequately perform and document audit procedures for the review of the cash management requirement. PricewaterhouseCoopers LLP needs to perform additional audit work for this direct and material requirement. PricewaterhouseCoopers LLP agreed to take corrective action in response to our recommendations.

We appreciate the courtesies extended to our staff. For additional information on this report, please contact Ms. Carolyn R. Hantz at (703) 604-8877 (DSN 664-8877).

A handwritten signature in black ink, appearing to read "Randolph R. Stone".

Randolph R. Stone  
Deputy Inspector General  
Policy and Oversight

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## Acronyms and Abbreviations

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# Introduction

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## Objective

As the cognizant Federal agency<sup>1</sup> for the Carnegie Mellon University (Carnegie Mellon), we performed a quality control review of the PricewaterhouseCoopers LLP (PwC) single audit report and supporting audit documentation for the audit period of July 1, 2013, through June 30, 2014. Our objective was to determine whether the single audit was conducted in accordance with generally accepted government auditing standards, generally accepted auditing standards, and the requirements of Office of Management and Budget (OMB) Circular A-133, “Audits of States, Local Governments, and Non-Profit Organizations.” Appendix A contains additional details on our scope and methodology and identifies prior quality control reviews. Appendix B lists the compliance requirements that PwC determined to be applicable to the FY 2014 audit.

## Background

### ***Carnegie Mellon University***

Carnegie Mellon is a private, not-for-profit educational and research institution. Carnegie Mellon enrolls about 13,000 students and grants approximately 4,100 bachelor’s degrees, master’s degrees and doctoral degrees each year. A substantial portion of Carnegie Mellon’s revenues are from sponsored research and other projects under Federal, state, industrial, and other contracts. During FY 2014, Carnegie Mellon expended \$379.9 million in Federal funds. Of the \$379.9 million, Carnegie Mellon expended \$322.9 million on one major program, the research and development cluster; including \$187.2 million expended on Department of Defense awards. Carnegie Mellon engaged PwC to perform the FY 2014 single audit.

### ***PricewaterhouseCoopers LLP***

PwC, a member firm of PricewaterhouseCoopers International Limited, provides a wide array of business services, including audit and assurance, business and Government consulting, and tax preparation and planning. PwC maintains its own system of internal quality control over its accounting and auditing practices as required by the American Institute of Certified Public Accountants. PwC’s office in McLean, Virginia, performed Carnegie Mellon’s FY 2014 single audit.

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<sup>1</sup> Office of Management and Budget Circular A-133 states that the cognizant agency is the Federal agency that provides the predominant amount of direct funding to a non-Federal entity and is the Federal agency designated to perform quality control reviews.

## **Single Audit**

Public Law 98-502, “The Single Audit Act of 1984,” (the Act) as amended, was enacted to promote sound financial management of Federal awards administered by non-Federal entities and to establish a uniform set of auditing and reporting requirements for all Federal award recipients that are required to obtain a single audit. OMB Circular A-133 establishes policies that guide the implementation of the Act and provides an administrative foundation for uniform audit requirements of non-Federal entities administering Federal awards. Entities that expend Federal funds of \$500,000 or more in a year are subject to the Act and OMB Circular A-133 requirements. Therefore, they must have an annual single or program-specific audit performed in accordance with generally accepted government auditing standards and submit a complete reporting package to the Federal Audit Clearinghouse. The single audit includes an audit of the non-Federal entity’s financial statements and Federal awards as described in OMB Circular A-133.

## **Review Results**

Carnegie Mellon complied with OMB Circular A-133 reporting requirements. However, PwC did not fully comply with auditing standards and OMB Circular A-133 requirements for the Carnegie Mellon FY 2014 single audit. Specifically, the auditors did not adequately perform and document audit procedures for their review of the cash management requirement. As a result, PwC needs to complete additional audit work to support its audit conclusions and the overall opinion on compliance with requirements for the research and development cluster.

## **Management Comments and DoDIG Response**

PricewaterhouseCoopers LLP agreed to take corrective action in response to our recommendations. Management comments were responsive and no additional comments are needed. PwC agreed to perform additional testing and provided additional information to support the conclusions on the cash management requirement. We will review all information provided and additional testing performed during our follow-up procedures to ensure actions fully address deficiencies cited in this report. Management comments are included in their entirety at the end of this report. Appendix C includes a summary of management’s comments on our finding along with our response.

## Finding

### Audit Procedures and Documentation of the Cash Management Compliance Requirement

PwC did not adequately perform and document audit procedures to support conclusions on Carnegie Mellon's internal control over and compliance with cash management requirements. PwC identified the cash management compliance requirement as direct and material to the research and development cluster. However, the audit procedures documented did not achieve the audit objective on the cash management compliance requirement for the research and development cluster. In addition, the audit documentation contained errors and inaccuracies. As a result of these deficiencies, the audit documentation did not provide sufficient appropriate evidence to support audit conclusions on cash management. PwC must document and perform additional audit procedures before Federal agencies can rely on the overall opinion on Carnegie Mellon's compliance with requirements for the research and development cluster.

### Audit Procedures

PwC's documented audit procedures for testing the cash management compliance requirement do not adequately address the audit objective identified in the 2014 OMB Circular A-133 Compliance Supplement. PwC documented that Carnegie Mellon receives funds on a reimbursement basis. The OMB Circular A-133 Compliance Supplement states that when funds are received on a reimbursement basis, the audit objective is to ensure program costs are paid with entity funds before requesting reimbursement from the Federal Government. PwC's documented audit procedures indicated that PwC verified that the reimbursement request did not exceed cumulative expenses and that payments received were equal to the amount requested. PwC also performed procedures to verify Carnegie Mellon's approval of the reimbursement request. The audit procedures, as documented, do not provide sufficient evidence to conclude on Carnegie Mellon's compliance with the objective of the cash management requirement.

### Compliance Testing

PwC selected a sample of reimbursement requests and performed two audit procedures to test Carnegie Mellon's compliance with the cash management requirement. PwC verified that the amount requested for reimbursement did not exceed total expenditures incurred for the award. The audit documentation was not clear on whether the auditor used cumulative incurred expenses at year end

or expenses incurred at the time of the reimbursement request. In either case, this audit procedure did not provide evidence that met the audit objective for the requirement because PwC is relying on the expense accounts<sup>2</sup> without documenting evidence of Carnegie Mellon's payment of the expenses. PwC also verified that the amount received matched the amount requested; however, this procedure also did not achieve the audit objective for the requirement.

We asked PwC to explain why the documentation did not include evidence of the date Carnegie Mellon paid expenses. PwC informed us that its reliance on expense accounts is based on the understanding that Carnegie Mellon issues monthly reimbursement requests for the previous month's expenses and an analysis of the annual accounts payable turnover ratio. The turnover ratio used is a broad assessment of the annualized average time it takes Carnegie Mellon to pay the expenses, but does not provide proper evidence of actual payment before the request for reimbursement. Additionally, PwC did not document audit procedures to validate its understanding of Carnegie Mellon's processes. As a result, the audit documentation did not include sufficient evidence that the auditors met the audit objective to conclude on compliance with the cash management requirement.

### ***Testing of Internal Controls over Compliance***

PwC performed two audit procedures for testing internal controls. PwC reviewed Carnegie Mellon's approval of the reimbursement request and Carnegie Mellon's letter of credit quarterly reconciliations. The audit documentation did not provide clear evidence of how the individual approving the reimbursement ensured compliance with the cash management requirement. The test of quarterly reconciliations provides limited coverage for the overall cash management requirement because the letter of credit is applicable to only 5.7 percent of FY 2014 Federal expenditures. As a result, we determined that the audit documentation did not provide sufficient evidence to support the audit conclusions on internal control and to plan the compliance testing for the cash management requirement.

### **Audit Documentation**

The audit documentation of internal control and compliance testing for the cash management requirement contained numerous errors and inaccuracies. Auditing standards require that audit documentation be in sufficient detail to enable an experienced auditor with no previous connection to the audit to understand the work performed, the evidence obtained, and the conclusions reached to meet the audit objectives.

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<sup>2</sup> Under the accrual basis of accounting, Carnegie Mellon's expenses were accounted for when incurred, regardless of whether they have been paid or will be paid.



We noted that the auditor's spreadsheet documenting the internal control and compliance testing identified reimbursement request dates that were for a prior fiscal year and payment received dates that were before the reimbursement request date. Due to the discrepancies identified, we decided to perform retesting and selected 6 of the 25 sample items for review. We were able to determine that the dates on the spreadsheet were entered incorrectly for five of the six sample items. However, Carnegie Mellon informed us that the sixth item was for a fixed-price award, which would not be subject to OMB Circular A-133 audit requirements. When asked, PwC explained that the sample item described on the spreadsheet was not the reimbursement request actually tested. However, in its response to a draft of this report, PwC agreed that the sample item tested was the fixed-price award. During our retesting, we noted errors in the audit documentation including the identification of a different approver for the reimbursement request than the one identified on the testing spreadsheet and errors in dates. Due to these inaccuracies, we are unable to rely on the audit documentation for the cash management requirement.

## **PricewaterhouseCoopers LLP Comments on the Finding and Our Response**

A summary of PwC's comments on the finding and our response is in Appendix C. See the Management Comments section for the full text.

## **Recommendations, Management Comments, and Our Response**

### ***Recommendations***

**We recommend that the Audit Partner, PricewaterhouseCoopers LLP:**

- 1. Document and perform, as necessary, sufficient audit procedures for the FY 2014 single audit, at no additional cost to the Government, to support conclusions on Carnegie Mellon University's internal control over and compliance with cash management requirements.**
- 2. Provide the Department of Defense Office of Inspector General with the audit documentation on the FY 2014 audit that demonstrates corrective actions taken to address the reported deficiencies for the cash management requirement.**

*PricewaterhouseCoopers LLP Comments*

PricewaterhouseCoopers LLP agreed to take corrective action and stated that PricewaterhouseCoopers LLP will perform additional cash management tests and correct the errors found in the testing spreadsheet. PricewaterhouseCoopers LLP also provided additional information on the audit documentation to support the testing on the cash management requirement.

*Our Response*

PricewaterhouseCoopers LLP comments are responsive to our recommendations. No additional comments are required. We will verify all information provided and actions taken during our follow-up procedures to ensure actions are sufficient to address deficiencies identified. Management comments are included in their entirety at the end of this report.

## Appendix A

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### Scope and Methodology

We reviewed the PwC FY 2014 single audit of Carnegie Mellon submitted to the Federal Audit Clearinghouse on January 16, 2015, using the 2015 edition of the Council of the Inspectors General on Integrity and Efficiency (CIGIE) “Guide for Quality Control Reviews of OMB Circular A-133 Audits.” CIGIE approved this guide for performing quality control reviews of single audits. We conducted our review from April 2015 through September 2015 in accordance with the CIGIE “Quality Standards for Inspection and Evaluation.” We did not review the audit procedures performed related to the student financial assistance cluster.<sup>3</sup> Our review focused on the following qualitative aspects of the single audit:

- qualification of auditors,
- independence,
- due professional care,
- planning and supervision,
- audit follow-up,
- internal control and compliance testing for the research and development cluster,
- schedule of expenditures of federal awards, and
- data collection form.

### Use of Computer-Processed Data

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

### Prior Coverage

Since October 1, 2010, we have performed five quality control reviews related to PwC’s OMB Circular A-133 audits. Unrestricted DoD IG reports can be accessed at <http://www.dodig.mil/pubs/index.cfm>.

- DoD IG Report No. DODIG-2015-112, “Quality Control Review of the PricewaterhouseCoopers LLP and the Defense Contract Audit Agency FY 2013 Single Audit of the MITRE Corporation,” April 30, 2015

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<sup>3</sup> The Department of Defense did not provide any funds in the student financial assistance cluster. The Department of Education was the only Federal agency to provide funds to this cluster and has the expertise on the requirements for this major program. The Department of Education did not elect to participate in this quality control review.

- DoD IG Report No. DODIG-2014-078, “Quality Control Review of the PricewaterhouseCoopers, LLP FY 2012 Single Audit of Massachusetts Institute of Technology,” June 5, 2014
- DoD IG Report No. DODIG-2013-125, “Quality Control Review of the PricewaterhouseCoopers, LLP FY 2011 Single Audit of SRI International,” August 29, 2013
- DoD IG Report No. DODIG-2013-048, “Quality Control Review of the PricewaterhouseCoopers, LLP and the Defense Contract Audit Agency FY 2010 Single Audit of the Institute for Defense Analyses,” February 20, 2013
- DoD IG Report No. D-2011-6-004, “Report on Quality Control Review of the PricewaterhouseCoopers, LLP and the Defense Contract Audit Agency FY 2008 Single Audit of the Charles Stark Draper Laboratory, Incorporated,” February 28, 2011

## Appendix B

### Compliance Requirements

*Table. PwC's Determination of the Applicability of Compliance Requirements for the Research and Development Cluster*

OMB Circular A-133 Compliance Requirements	Applicable	Not Applicable/ Not Material
Activities Allowed/Unallowed	X	
Allowable Cost/Cost Principles	X	
Cash Management	X	
Davis-Bacon Act		X
Eligibility		X
Equipment and Real Property Management	X	
Matching, Level of Effort, Earmarking	X	
Period of Availability of Federal Funds	X	
Procurement, Suspension, and Debarment	X	
Program Income		X
Real Property Acquisition and Relocation Assistance		X
Reporting	X	
Subrecipient Monitoring	X	
Special Tests and Provisions	X	

## Appendix C

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### PricewaterhouseCoopers LLP Comments on the Finding and Our Response

#### *PwC Comments on Compliance Testing (first paragraph)*

PwC stated that its objective was clearly designed to determine whether the invoice amount agrees with or is less than the total expenditures “at period-end.” PwC also stated that PwC auditors did not use the “Total Expenditures” column included in the spreadsheet for their testing and that the expenditures at period-end represented the billing period and not the total expenditures for the year. Finally, PwC explained that this was further validated by testing Carnegie Mellon’s approval of the invoices.

#### *Our Response*

We agree that the phrase “at period-end” was used throughout the documentation. However, it was unclear as to whether this meant at the end of the billing period or the end of the fiscal year because the testing spreadsheet identified only the invoice amount, the total expenditure amount at the end of the fiscal year, and a “Yes” response to an audit step stating, “[i]nvoice agrees to or is less than total expenditures at period-end.” Regardless, the information provided did not change our conclusions because, as stated in our finding, the testing as documented did not meet the audit objective for testing the cash management requirement.

#### *PwC Comments on Compliance Testing (second paragraph)*

PwC described the method used to document and validate its understanding of the business processes and internal controls over cash management. PwC’s walkthrough procedures included selecting a Federal expenditure transaction and tracking it from initiation through invoice payment. PwC corroborated its understanding of Carnegie Mellon’s processes through the accounts payable turnover calculation and the frequency of check issuance. PwC stated that tracking the expenses to purchase orders in the system and verifying that the expenses were charged to a specific award would suffice for testing purposes.

#### *Our Response*

We appreciate PwC’s effort to clarify its reasoning for considering that audit documentation taken as a whole was sufficient to support conclusions. PwC has also agreed to perform the additional testing to verify that expenditures were paid before requesting reimbursement. During our follow-up procedures on the

corrective actions taken, we will verify the information provided in PwC's response and the additional testing performed to determine whether there is sufficient overall evidence to support its conclusions on the cash management requirement.

#### *PwC Comments on Testing of Internal Controls over Compliance*

PwC stated that it documented the understanding of Carnegie Mellon's internal control using the Committee of Sponsoring Organization framework. PwC indicated that it performed two control tests, the quarterly letter of credit reconciliations and the review of invoices. The reviewer of the invoices would check whether the total on the invoice exceed expenses at the time of invoicing.

#### *Our Response*

We agree that PwC documented the controls using the Committee of Sponsoring Organization framework and performed two control tests. However, as stated in our finding, it was not clear in the audit documentation that testing whether the invoice exceeded expenses was sufficient to meet the audit objectives of the cash management requirement. During our follow-up procedures, we will verify the information PwC provided in its response to determine whether the internal control identified can be relied on to meet the objectives of the requirement.

#### *PwC Comments on Audit Documentation*

PwC stated that due to an intense manual process, the audit documentation included typographical errors. However, PwC believes the use of the word "numerous" overstates the magnitude of the errors. PwC also clarified that the 25th sample item reviewed was on a fixed-price award and should not have been chosen. However, PwC does not believe it adversely impacted the conclusions because Carnegie Mellon's internal control and compliance processes are the same across all types of awards.

#### *Our Response*

We understand human error and the audit risk associated with the manual entries in the audit documentation. We do not consider these to be small errors because, as documented, the auditors appeared to select some transactions from a prior audit period and failed to identify exceptions in the testing performed. Because we had to perform retesting to verify the facts for the transactions being tested and almost all retested sample items contained errors, we do not consider the magnitude of the issue to be overstated.

We appreciate the clarification that the 25th sample item was on a fixed-price award. PwC had previously informed us that this sample item had been erroneously documented and that a different item had been reviewed. We agree with PwC that this item should not have been chosen because the auditors were providing an opinion on compliance with Federal program requirements and fixed-price awards are not part of major Federal programs for the OMB Circular A-133 audit. Further, PwC planned testing for a sample of 25 items, allowing for zero exceptions, to support conclusions. Because 1 sample item was outside the scope of the OMB Circular A-133 audit, PwC tested only 24 items. As a result, PwC did not perform the testing as planned to support its conclusions on compliance with the cash management requirement. However, PwC has agreed to perform additional cash management testing, which should resolve this issue.



# Management Comments

## PricewaterhouseCoopers LLP



November 13, 2015

Randolph R. Stone  
Deputy Inspector General  
Policy and Oversight

Inspector General  
Department of Defense  
4800 Mark Center Drive  
Alexandria, Virginia 22350

Subject: Quality Control Review of the PricewaterhouseCoopers LLP FY 2014 Single Audit of Carnegie Mellon University (Project No. D2015-DAPOSA-0171.000)

Dear Mr. Stone:

Thank you for providing a draft of the proposed report "Quality control Review of the PricewaterhouseCoopers LLP ("PwC") FY 2014 single Audit of Carnegie Mellon University" (the "Draft Report"). We have reviewed the Draft Report and we appreciate the opportunity to provide additional information and clarification on the potential findings noted therein.

The Department of Defense Office of Inspector General ("OIG") indicated that Carnegie Mellon University ("CMU") complied with OMB Circular A-133 reporting requirements. However, the OIG also indicated that the PwC did not fully comply with auditing standards and OMB Circular A-133 requirements for the CMU FY 2014 single audit. Specifically the OIG indicates that PwC did not adequately perform and document audit procedures for our review of the cash management requirements. Therefore the OIG has concluded we need to complete additional work to support our audit conclusions and overall opinion on compliance with the cash management requirement procedures for the research and development ('R&D') cluster.

The OIG recommends that PwC document and perform, as necessary, sufficient audit procedures to support conclusions on CMU's internal control over compliance with cash management requirements. In addition it is recommended that PwC provide to the OIG documentation to support that PwC has taken corrective action to address the deficiencies reported in the Draft Report.

The Draft Report describes what the OIG considers to be two deficiencies. First that the procedures PwC did perform did not go far enough to adequately demonstrate that CMU pays R&D program costs with CMU funds before requesting reimbursement from the Federal Government. Second, one of the PwC testing spreadsheets contained typographical errors.

PwC will perform the additional cash management test requested for fiscal year 2014. We will select an appropriate sample of invoices and compare the date that the invoice was actually paid to the date CMU requested reimbursement for the invoices chosen. In addition we will correct the information errors OIG found on one of our test spreadsheets.

## PricewaterhouseCoopers LLP (cont'd)



While we believe that taken as a whole, our documented procedures over compliance and internal control over compliance did adequately support our opinion over compliance for the R&D cluster, we respect the OIG point of view and accordingly are taking the requested corrective action. In addition while we agree that one of our spreadsheets contained some inaccurate pieces of information, we do not believe that those errors negatively impacted the audit conclusions we reached.

We have included in Appendix A a more detailed response to the specific facts and circumstances noted in the Draft Report. If after reading our response, you would like to see any of the procedures we refer to, such as our internal control documentation, we would be able to send to copies of the procedures we performed and the related results of our testing.

PwC welcomes the opportunity to discuss with the OIG in the future the level of audit testing required by the existing and applicable guidance to allow an auditor to conclude on the objective of ensuring that recipients of Federal awards are paying invoices with recipient funds before requesting a drawdown of Federal Funds for reimbursement of those recipient funds.

Thank you for your consideration of our response to the Draft Report. We would be pleased to discuss this with you at your convenience. Please call Riva Mirvis at 703-918-3886 to arrange a mutually convenient time.

Sincerely,

A handwritten signature in black ink, appearing to read "Riva Mirvis", written in a cursive style.

Riva Mirvis  
Engagement Partner  
PricewaterhouseCoopers

## PricewaterhouseCoopers LLP (cont'd)



### Appendix A

#### Compliance Testing Section

##### [OIG comments]

*PwC selected a sample of reimbursement requests and performed two audit procedures to test Carnegie Mellon's compliance with the cash management requirement. PwC verified that the amount requested for reimbursement did not exceed total expenditures incurred for the award. The audit documentation was not clear on whether the auditor used cumulative incurred expenses at year end or expenses incurred at the time of the reimbursement request. In either case, this audit procedure did not provide evidence that met the audit objective for the requirement because PwC is relying on the expense accounts<sup>2</sup> without documenting evidence of Carnegie Mellon's payment of the expenses. PwC also verified that the amount received matched the amount requested; however, this procedure also did not achieve the audit objective for the requirement.*

##### [PwC's response]

In our dual purpose control/compliance testing, we clearly defined our testing objectives to ensure that the invoice amount agrees to or is less than the total expenditures at period-end. This is documented in 3 places: "Test of Compliance template" step 3, Procedures tab item 2-3) in our Test of Compliance workpaper and Column H in our Test of Compliance workpaper. In our Test of Compliance workpaper - Column H is labelled as 'Invoice agrees to or is less than total expenditures at period-end'. We ensured and documented for each sample that the invoiced amount did not exceed the total expenditures at period-end. We did not use Column G as Column G is labelled as Total Expenditures while Column H is expenditures at period end. This is further validated when we performed control testing for key control 2 – review of invoices. These workpapers were provided while OIG was on site, however, in case you would like to see these workpapers, we will send a copy to you under a separate cover.

In summary, for dual purpose control and compliance testing, we selected 25 samples and performed the following procedures.

- a. For each draw down or invoice, we ensured that it was reviewed and that total draw or amount invoiced did not exceed expenses at the time of invoicing. Column H of the testing template states "Invoice agrees to or is less than total expenditures at period-end" and this test was for the billing period and not corresponding to Column G of total expenditures for the year.
- b. Key control 2 – review of invoices – were tested for selected samples. We ensured that invoices were properly approved by responsible management. The review of invoices is subjected to extensive procedures by CMU. We tested that reviewers ensured that the drawdowns or invoiced amounts did not exceed expenditures at the time as documented in Column P.

##### [OIG comments]

*We asked PwC to explain why the documentation did not include evidence of the date Carnegie Mellon paid expenses. PwC informed us that their reliance on expense accounts is based on the understanding that Carnegie Mellon issues monthly reimbursement requests for the previous month's expenses and an analysis of the annual accounts payable turnover ratio. The turnover ratio used is a broad assessment of the annualized average time it takes Carnegie Mellon to pay the expenses, but does not provide proper*

## PricewaterhouseCoopers LLP (cont'd)



*evidence of actual payment before the request for reimbursement. Additionally, PwC did not document audit procedures to validate their understanding of Carnegie Mellon's processes. As a result, the audit documentation did not include sufficient evidence that the auditors met the audit objective to conclude on compliance with the cash management requirement.*

**[PwC's response]**

We documented and validated our understanding of internal control over various business processes including the payables and expense cycles, the payroll cycle, sponsored receivables cycle, sponsored revenue cycle and the treasury cycle from start to finish through walkthrough procedures. In addition we obtained an understanding of internal controls surrounding cash management and documented our understanding. Our walkthrough procedures included selecting a federal expenditure transaction and we followed it through from initiation of transaction until the invoice was paid. During the walkthrough, we obtained system screenshots, a proof of approvals, assignment to a particular award, 3-way match with PO, invoice and a receipt, and payment processing. We corroborated our understanding of CMU's process through the accounts payable turnover calculation and frequency of check issuance. As validated through the walk through, expenses are billed in the month following the date of the expenditure, not prior. Invoices to the Federal Government or sponsor include various information such as period covered, invoice date, net cumulative invoiced amount, current amount billed and management certification. Additionally, a significant portion of direct costs (approximately 76%) are compensation for personnel services, stipend and allowances. Through our direct cost testing for compensation, we traced 46 samples to cash payments to ensure they were paid timely and noted no exceptions. Through other direct costs testing (equipment, consultant, travel, and other expenses), we traced 11 samples to POs or invoices in the accounts payable systems and it validates that they were processed through normal accounts payable system. This testing combined with ensuring CMU has an appropriate process to this end and analytical documentation, we believe our cash management work adequately meets this audit objective.

In addition, through our understanding of the internal control environment, we have learned the following:

- a. The majority of CMU's awards are reimbursement basis and they have one LOC with NIH. Other federal awards are directly billed (invoiced) for reimbursement to sponsoring federal government agencies or the prime award recipients.
- b. Our walkthrough confirmed that all procurements from vendors require purchase orders. Purchase orders go through approval workflows within the University and when purchase orders are approved, such POs are linked to particular awards.
- c. Once vendor invoices are received and matched with POs and the receipt of goods/services, transactions are sent to batch processing for payments daily and checks/wire payments are issued almost daily. At June 30, 2014 and 2013, outstanding checks, including federal and non-federal expenditures were approximately \$6.4 million for both 2014 and 2013 year-ends and not material to R&D and for schedule of expenditures for federal awards ('SEFA').
- d. LOCs, AR and cash on hand are reconciled quarterly basis and reviewed by appropriate management (cash management key control 1). LOC drawdown is prepared monthly to capture previous month's expenses. During preparation and review of LOC, cumulative expenses, cumulative drawdowns and current period's expenses are downloaded from Oracle and reviewers ensure next drawdowns do not exceed cumulative expenses at the time.
- e. Invoices to request reimbursements are prepared monthly in the following month (e.g. July expenses is billed in August.) All invoices to sponsoring government agencies and prime

## PricewaterhouseCoopers LLP (cont'd)



recipients are reviewed by appropriate management (cash management key control 2). Invoices include key information such as expense period, invoice date, award information, cumulative cost, current amount requested for reimbursement and certification of the management. During the invoice review, reviewer ensure mathematical accuracy of invoices, costs requested for reimbursements are for prior period and not estimated amount, all payments requested are for appropriate purpose and in accordance with the agreement set forth in the application and award document. We believe that this control is a key for cash management to ensure reimbursement requests were prepared properly.

Based on our understanding, we assessed overall risk related to cash management to be low and planned the testing of internal control. Two key controls were identified as noted above.

In addition, to test compliance requirements for cash management, we have calculated accounts payable turn over to be 21 days and considering there wasn't material long outstanding checks, we determined that 'paid' for cash management compliance purpose means expenses are processed in normal course of business. By tracing expenses to POs in AP system to ensure they were directly charged to specific award will suffice for the purpose of the testing.

### Testing of Internal Controls over Compliance

#### [OIG comments]

*PwC performed two audit procedures for testing internal controls. PwC reviewed Carnegie Mellon's approval of the reimbursement request and Carnegie Mellon's letter of credit quarterly reconciliations. The audit documentation did not provide clear evidence of how the individual approving the reimbursement ensured compliance with the cash management requirement. The test of quarterly reconciliations provides limited coverage for the overall cash management requirement because the letter of credit is applicable to only 5.7 percent of FY 2014 Federal expenditures. As a result, we determined that the audit documentation did not provide sufficient evidence to support the audit conclusions on internal control and to plan the compliance testing for the cash management requirement.*

#### [PwC response]

We have documented our understanding of CMU's internal control environment surrounding the cash management requirements included in the OMB Compliance supplement using a COSO format template. Risk assessment for cash management was performed as part of our engagement planning and gaining an understanding of internal control procedures. Risk related to internal control over cash management compliance was determined and documented to be low. We have identified 2 key controls over the cash management compliance requirements. As OIG described in the Draft Report, the first key control (CM1) was the test of quarterly LOC reconciliations. The second key control (CM2) was review of invoices.

For Key Control 2 (CM2), we have performed the following procedures for 25 samples. (7 drawdowns and 18 invoices). This was a dual purpose test.

- a. For each draw down or invoice, ensure that it was reviewed that total draw or amount invoiced did not exceed expenses at the time of invoicing. Column H of the testing worksheet states "Invoice agrees to or is less than total expenditures at period-end" is for the monthly billing period and not corresponding to Column G of total expenditures for the year.
- b. To ensure invoices were properly approved by responsible management.

## PricewaterhouseCoopers LLP (cont'd)

Final Report  
Reference



### Audit Documentation

#### [OIG comments]

*We noted that the auditor's spreadsheet documenting the internal control and compliance testing identified reimbursement request dates that were for a prior fiscal year and payment received dates that were before the reimbursement request date. Due to the discrepancies identified, we decided to perform retesting and selected 6 of the 25 sample items for review. We were able to determine that the dates on the spreadsheet were entered incorrectly for five of the six sample items. However, Carnegie Mellon informed us that the sixth item was for a fixed-price award, which would not be subject to OMB Circular A-133 audit requirements. When asked, PwC explained that the sample item described on the spreadsheet was not the reimbursement request actually tested. During our retesting, we noted errors in the audit documentation including the identification of a different approver for the reimbursement request than the one identified on the testing spreadsheet and errors in dates. Due to these inaccuracies, we are unable to rely on the audit documentation for the cash management requirement.*

Revised

#### [PwC's response]

During the exit conference held on September 3, 2015, we were told that the documentation of our cash management testing was not fully accurate and that there were some wrong dates, wrong amounts, and a wrong approver. In addition, one sample was entirely the wrong sample tested.

We agree that they included typographical errors due to the intense manual process. Oracle invoicing may not always generate invoices in accordance with costs incurred due to CMU's task funding set up in Oracle. Actual costs incurred were used to determine invoice amounts that were submitted to the sponsor, which agree to Oracle generated accounting reports. During our audit process, we were provided with the list of Oracle invoices, and then match actual invoices that were sent to the sponsoring agencies, and identify expenditures associated with the actual invoice. All data were pulled from the hard copy information provided by CMU and manually typed in our workpaper. We also note that the OIG was able to re-perform at CMU our cash management testing and reach the same conclusion for CMU's cash management compliance requirements as we did, even though our documentation did include a small number of errors. We believe that the use of the word 'numerous' to describe what was found overstates the magnitude of the errors.

Regarding our 25th sample transaction chosen, we agree it was for a fixed-price award, although this award is not subject to inclusion in the CMU SEFA and therefore should not have been chosen, we do note that, the internal control and compliance processes CMU has in place are the same across all types of awards. Therefore we do not believe that use of the fixed price transaction in any way adversely impacts the conclusions we drew from our sample

## Acronyms and Abbreviations

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**CIGIE** Council of Inspectors General on Integrity and Efficiency

**OMB** Office of Management and Budget

**PwC** PricewaterhouseCoopers LLP





# **Whistleblower Protection**

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