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United States Government Accountability Office  
Washington, DC 20548

March 31, 2011

Stephen R. Malphrus  
Staff Director for Management  
Board of Governors of the Federal  
Reserve System

Subject: *Federal Reserve Banks: Areas for Improvement in Information Systems Controls*

Dear Mr. Malphrus:

In connection with fulfilling our requirement to audit the financial statements of the U.S. government,<sup>1</sup> we audited and reported on the Schedules of Federal Debt Managed by the Bureau of the Public Debt (BPD) for the fiscal years ended September 30, 2010 and 2009.<sup>2</sup> As part of these audits, we performed a review of information systems controls over key financial systems maintained and operated by the Federal Reserve Banks (FRB) on behalf of the Department of the Treasury's (Treasury) BPD relevant to the Schedule of Federal Debt.

As we reported in connection with our audit of the Schedules of Federal Debt for the fiscal years ended September 30, 2010 and 2009, we concluded that BPD maintained, in all material respects, effective internal control over financial reporting relevant to the Schedule of Federal Debt as of September 30, 2010, that provided reasonable assurance that misstatements, losses, or noncompliance material in relation to the Schedule of Federal Debt would be prevented, or detected and corrected on a timely basis. However, we identified information systems deficiencies affecting internal control over financial reporting, which, while we do not consider them to be

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<sup>1</sup>31 U.S.C. § 331(e)(2). As a bureau within the Department of the Treasury, federal debt and related activity and balances are also significant to the consolidated financial statements of the Department of the Treasury (see 31 U.S.C. § 3515(b)).

<sup>2</sup>GAO, *Financial Audit: Bureau of the Public Debt's Fiscal Years 2010 and 2009 Schedules of Federal Debt*, GAO-11-52 (Washington, D.C.: Nov. 8, 2010).

collectively either a material weakness or significant deficiency, nevertheless warrant FRB management's attention and action.<sup>3</sup>

This report presents a control deficiency we identified during our fiscal year 2010 testing of information systems controls over key financial systems maintained and operated by the FRBs relevant to BPD's Schedule of Federal Debt. This report also includes the results of our follow-up on the status of FRB's corrective actions to address information systems control-related recommendations contained in our prior years' reports and open as of September 30, 2009. In a separately issued Limited Official Use Only report, we communicated detailed information regarding our findings to FRB management.

## **Results in Brief**

Our fiscal year 2010 audit procedures identified one new general information systems control deficiency related to access controls. We made one recommendation to address this control deficiency.

The new information systems control deficiency we identified did not represent a significant risk to the key financial systems maintained and operated by the FRBs on behalf of BPD. The potential effect of such a control deficiency on financial reporting relevant to the Schedule of Federal Debt was mitigated by FRB's physical security measures and a program of monitoring user and system activity, and BPD's compensating management and reconciliation controls designed to detect potential misstatements in the Schedule of Federal Debt.

In addition, during our fiscal year 2010 follow-up on the status of FRB's corrective actions to address eight open recommendations related to general information systems control deficiencies identified in our prior years' audits, we determined that as of September 30, 2010, corrective action on six of the eight recommendations was completed, while corrective action was in progress on the two remaining open recommendations related to security management and access controls.

The Director of Reserve Bank Operations and Payments Systems on behalf of the Board of Governors of the Federal Reserve System provided comments on the detailed findings and recommendations in the separately issued Limited Official Use Only report. In those comments, the Director of Reserve Bank Operations and Payment Systems stated that the agency takes control deficiencies, and actions to address them, seriously. The Director further commented that the new deficiency has already been addressed, and that the remainder have corrective actions planned or in progress.

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<sup>3</sup>A material weakness is a deficiency, or a combination of deficiencies, in internal control such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. A significant deficiency is a deficiency, or combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance. A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis.

## Background

Many of the FRBs provide fiscal agent services on behalf of BPD. Such services primarily consist of issuing, servicing, and redeeming Treasury securities held by the public and handling the related transfers of funds. In fiscal year 2010, the FRBs issued about \$8.4 trillion in federal debt securities to the public, redeemed about \$6.9 trillion of debt held by the public, and processed about \$183 billion in interest payments on debt held by the public. FRBs use a number of key financial systems to process debt-related transactions. The Federal Reserve Information Technology Computing Centers maintain and operate key financial systems to process and reconcile funds disbursed and collected on behalf of BPD. Detailed data initially processed at the FRBs are summarized and then forwarded electronically to BPD's data center for matching, verification, and posting to the general ledger.

Section 3544(a)(1)(A) of Title 44, United States Code, delineates federal agency responsibilities for (1) information collected or maintained by or on behalf of an agency and (2) information systems used or operated by an agency or by a contractor of an agency or other organization on behalf of an agency. Further, section 3544(b) provides that each agency shall develop, document, and implement an agencywide information security program to provide information security for the information and information systems that support the operations and assets of the agency, including those provided or managed by another agency, contractor, or other source. Office of Management and Budget Memorandum M-10-15, *FY 2010 Reporting Instructions for the Federal Information Security Management Act and Agency Privacy Management*, clarified that agency information security programs apply to all organizations that possess or use federal information—or that operate, use, or have access to federal information systems—on behalf of a federal agency. In addition, section 3544(a)(1)(B) of Title 44, United States Code, requires federal agencies to comply with information security standards developed by the National Institute of Standards and Technology.

## Objectives, Scope, and Methodology

Our objectives were to evaluate information systems controls over key financial management systems maintained and operated by the FRBs on behalf of BPD that are relevant to the Schedule of Federal Debt, and to determine the status of FRB's corrective actions to address information systems control-related recommendations contained in our prior years' reports for which actions were not complete as of September 30, 2009. Our evaluation of information systems controls was conducted using the *Federal Information System Controls Audit Manual* (FISCAM).<sup>4</sup>

To evaluate information systems controls, we identified and reviewed FRB's information systems control policies and procedures, observed controls in operation, conducted tests of controls, and held discussions with officials at selected FRB data centers to determine whether controls were adequately designed, implemented, and operating effectively.

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<sup>4</sup>GAO, *Federal Information System Controls Audit Manual*, GAO-09-232G (Washington, D.C.: February 2009).

The scope of our general information systems controls work for fiscal year 2010 included (1) following up on open recommendations from our prior years' reports and (2) using a risk-based approach to testing the five FISCAM general control areas related to the systems in which the applications operate and other critical control points in the systems or networks that could impact the effectiveness of the information systems controls at the relevant FRB in the current year. In addition, we performed security configuration reviews of key Federal Reserve technical infrastructure components supporting the key FRB systems. We also reviewed results of security testing performed by FRB Richmond General Audit relevant to our fiscal year 2010 audit.

We determined whether relevant application controls were appropriately designed and implemented, and then performed tests to determine whether the application controls were operating effectively. We reviewed four key FRB applications to determine whether the application controls were designed and operating effectively to provide reasonable assurance that

- all transactions that occurred were input into the system, accepted for processing, processed once and only once by the system, and properly included in output;
- transactions were properly recorded in the proper period, key data elements input for transactions were accurate, data elements were processed accurately by applications that produce reliable results, and output was accurate;
- all recorded transactions actually occurred, related to the organization, and were properly approved in accordance with management's authorization, and output contained only valid data;
- application data and reports and other output were protected against unauthorized access; and
- application data and reports and other relevant business information were readily available to users when needed.

The independent public accounting (IPA) firm of Cotton and Company LLP evaluated and tested certain FRB information systems controls, including the follow-up on the status of FRB's corrective actions during fiscal year 2010 to address open recommendations from our prior years' reports. We agreed on the scope of the audit work, monitored the IPA firm's progress, and reviewed the related audit documentation to determine that the firm's findings were adequately supported.

During the course of our work, we communicated our findings to the Board of Governors of the Federal Reserve System. We plan to follow up to determine the status of corrective actions taken for matters open as of September 30, 2010, during our audit of the fiscal year 2011 Schedule of Federal Debt.

We performed our work at the FRB locations where the operations of the systems we reviewed are supported. Our work was performed from February 2010 through October 2010 in accordance with U.S. generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained

provided a reasonable basis for our findings and conclusions based on our audit objectives.

As noted above, we obtained agency comments on the detailed findings and recommendations in a draft of the separately issued Limited Official Use Only report. The Board of Governors of the Federal Reserve System's comments are summarized in the Agency Comments and Our Evaluation section of this report.

### **Assessment of FRB's Information Systems Controls**

General information systems controls are the structure, policies, and procedures that apply to an entity's overall computer operations. General information systems controls establish the environment in which application systems and controls operate. They include security management, access controls, configuration management, segregation of duties, and contingency planning. An effective general information systems control environment (1) provides a framework and continuing cycle of activity for managing risk, developing security policies, assigning responsibilities, and monitoring the adequacy of the entity's computer-related controls to ensure that an adequate security management program is in place; (2) limits or detects access to computer resources (data, programs, equipment, and facilities), thereby protecting them against unauthorized modification, loss, and disclosure; (3) prevents unauthorized changes to information system resources (for example, software programs and hardware configurations) and provides reasonable assurance that systems are configured and operating securely and as intended; (4) includes policies, procedures, and an organizational structure to manage who can control key aspects of computer-related operations; and (5) protects critical and sensitive data, and provides for critical operations to continue without disruption or be promptly resumed when unexpected events occur.

During our fiscal year 2010 testing, we identified an opportunity to strengthen certain information systems controls that support key financial systems maintained and operated by the FRBs relevant to BPD's Schedule of Federal Debt. Specifically, we identified one new general information systems control deficiency related to access controls.

Access controls are important because they limit access or detect inappropriate access to computer resources (data, equipment, and facilities), thereby protecting them from unauthorized modification, loss, and disclosure. Such controls include logical access controls and physical access controls. The new access control deficiency we identified during fiscal year 2010 related to logical access controls. Logical access controls require users to authenticate themselves through the use of passwords or other identifiers, and limit the files and other resources that authenticated users can access and the actions that they can execute based on a valid need that is determined by assigned official duties.

In a separately issued Limited Official Use Only report, we communicated detailed information regarding our one new finding to FRB management and made one detailed recommendation.

In addition, our fiscal year 2010 follow-up on the status of actions taken to address unresolved general information systems control deficiencies we identified in our prior years' audits for which actions were not complete as of September 30, 2009, found that FRB completed corrective actions on six of the eight open recommendations, while corrective action was in progress on the two remaining open recommendations related to security management and access controls. Although FRB management has made progress in addressing the remaining two general information systems control deficiencies, additional actions are needed.

None of the control deficiencies we identified represented significant risks to the financial systems maintained and operated by the FRBs on behalf of BPD. The potential effect of such control deficiencies on financial reporting relevant to the Schedule of Federal Debt was mitigated by FRB's physical security measures and a program of monitoring user and system activity, and BPD's compensating management and reconciliation controls designed to detect potential misstatements in the Schedule of Federal Debt. Nevertheless, these deficiencies warrant management's attention and action to limit the risk of unauthorized access, loss, or disclosure; modification of sensitive data and programs; and disruption of critical operations.

## **Conclusion**

FRB has made significant progress in addressing the open information systems control recommendations from our prior years' audits, and while actions are still needed in two control areas, it has corrective actions under way or planned. Our fiscal year 2010 audit also identified one new general information systems control deficiency related to access controls.

## **Recommendation for Executive Action**

We recommend that the Director of Reserve Bank Operations and Payment Systems direct the appropriate FRB officials to implement the new detailed recommendation presented in the separately issued Limited Official Use Only report.

## **Agency Comments and Our Evaluation**

The Director of Reserve Bank Operations and Payments Systems on behalf of the Board of Governors of the Federal Reserve System provided comments on the detailed findings and recommendations in the separately issued Limited Official Use Only report. In those comments, the Director of Reserve Bank Operations and Payment Systems stated that the agency takes control deficiencies, and actions to address them, seriously. Specifically, the Director commented that the new deficiency has already been addressed, and that corrective actions for the two remaining open recommendations from our prior years' reports are planned or in progress. The Director also stated that the FRBs intend to implement corrective actions for one of the two remaining findings by June 2011, and actions to address the other finding by September 2012 as part of a transition to a new information security program. We plan to follow up to determine the status of corrective actions taken for these matters during our audit of the fiscal year 2011 Schedule of Federal Debt.

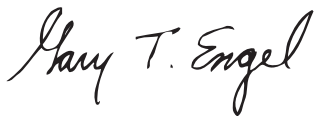
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In the separately issued Limited Official Use Only report, we requested a written statement on actions taken to address our recommendations not later than 60 days after the date of that report.

We are sending copies of this report to interested congressional committees, the Chairman of the Board of Governors of the Federal Reserve System, the Fiscal Assistant Secretary of the Treasury, and the Director of the Office of Management and Budget. This report also is available at no charge on GAO's Web site at <http://www.gao.gov>.

If you have any questions regarding this report, please contact me at (202) 512-3406 or [engelg@gao.gov](mailto:engelg@gao.gov). Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made major contributions to this report include Jeffrey L. Knott and Dawn B. Simpson, Assistant Directors; Edmund F. Fernandez; and George C. Kovachick.

Sincerely yours,



Gary T. Engel  
Director  
Financial Management and Assurance

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