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Report on Internal Control

To the Administrator and the Acting Inspector General
of the National Aeronautics and Space Administration

We were engaged to audit the financial statements of the National Aeronautics and Space Administration (NASA or the Agency) as of and for the year ended September 30, 2009, and have issued our report thereon dated November 9, 2009. The report states that because of the matters discussed therein, the scope of our work was not sufficient to enable us to express, and we do not express, an opinion on the consolidated balance sheet as of September 30, 2009, and the related consolidated statements of net cost and changes in net position, and the combined statement of budgetary resources for the fiscal year then ended.

In planning and performing our audit, we considered NASA's internal control over financial reporting as a basis for designing our auditing procedures for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of NASA's internal control over financial reporting. Accordingly, we do not express an opinion on the effectiveness of NASA's internal control over financial reporting. We limited our internal control testing to those controls necessary to achieve the objectives described in the Office of Management and Budget (OMB) Bulletin No. 07-04, as amended. We did not test all internal controls relevant to operating objectives as broadly defined by the Federal Managers' Financial Integrity Act of 1982 (FMFIA), such as those controls relevant to ensuring efficient operations.

Our consideration of internal control over financial reporting was for the limited purpose described in the preceding paragraph and was not designed to identify all deficiencies in internal control that might be significant deficiencies or material weaknesses and, therefore, there can be no assurance that all deficiencies, significant deficiencies, or material weaknesses have been identified. However, as discussed below, we identified certain deficiencies in internal control that we consider to be material weaknesses and other deficiencies that we consider to be significant deficiencies.

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. 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. We consider the deficiencies related to Enhancements Needed for Controls over Legacy Property, Plant and Equipment (PP&E) and Materials Contracts, to be a material weakness.

A significant deficiency is a deficiency or a 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. We consider the deficiencies related to Processes in Estimating NASA's Environmental Liability Continue to Require Enhancements and Financial Management Systems Not in Substantial Compliance with FFMIA to be significant deficiencies.

Material Weakness

Enhancements Needed for Controls over Legacy PP&E and Materials Contracts, But SFFAS No. 35 Adoption May Aid In Resolving This Longstanding Issue (Modified Repeat Condition)

Prior-year audit reviews of legacy PP&E identified serious weaknesses in the design of internal controls over the completeness and accuracy of legacy assets which prevented material misstatements from being detected and corrected in a timely manner by NASA. Certain legacy issues noted in prior-year audit reports continue to challenge the Agency, particularly in relation to the International Space Station (ISS) and Space Shuttles. During FY 2009, NASA management undertook a systematic process to address the valuation and completeness issues related to the ISS and Space Shuttle assets in anticipation of an FY 2009 release of the Federal Accounting Standards Advisory Board (FASAB) Statement of Federal Financial Accounting Standards (SFFAS) No. 35, *Estimating the Historical Cost of G-PP&E*, which was ultimately released in FY 2010. This standard is expected to substantially improve NASA's ability to account for these assets in accordance with generally accepted accounting principles in FY 2010. Note that Space Shuttle assets will be fully depreciated in FY 2010 as they will have reached the end of their useful lives and this timing coincides with the Space Shuttle Transition program. Adoption of changes in the internal control process associated with new contracts also holds promise in resolving these issues over time.

During the past several years, NASA has continued to revise and correct its records for legacy assets to address these legacy issues. These legacy issues fundamentally flowed from the lack of a robust control structure whereby NASA did not determine at the point of budget formulation, obligation recognition, contract development, accounts payable recognition or disbursement the amounts of property it expects to buy, has contracted for or has purchased. For example:

- In FY 2007, NASA recorded a $12.7 billion adjustment to write off the net book value (NBV) of legacy assets (previously reported as "theme assets") which it believed were inappropriately capitalized since NASA's implementation of SFFAS No. 6, *Accounting for Property Plant and Equipment*, in FY 1998. NASA recorded this adjustment as a change in accounting principle based upon a technical release issued by the Accounting and Auditing Policy Committee of the FASAB. Prior to this cumulative effect adjustment, the NBV of NASA's PP&E was $33.3 billion as of September 30, 2006.

- In FY 2008, NASA recorded an adjustment of $2.9 billion to expense costs previously capitalized as launch costs during the year as these costs were associated with taking foreign-owned components, rather than government-owned components, to the ISS. Prior to this year-end adjustment, the NBV of NASA's PP&E would have been $24.5 billion as of September 30, 2008. The process to correct this item in FY 2008 was an indicator of the effectiveness of some of the financial management review processes which NASA had been developing, but also highlighted the need for the development of consistent controls regarding capitalization approaches, with appropriately vetted position papers and notification for pending areas of review to ensure that no significant year-end adjustments are needed. As noted below, launch cost calculations were revisited in FY 2009, and additional errors were noted.

- In FY 2009, NASA recorded a series of adjustments during the third and fourth quarters to correct for additional errors in the valuation of legacy assets related to the accounting for launch costs and integration and operational costs capitalized as part of the ISS. During NASA's analysis of the accounting for launch costs, management concluded that prior methodologies and amounts recorded were inaccurate since FY 1998, when the first component of the ISS was carried by the Space Shuttle. Management recorded a $5.2 billion adjustment to write off the NBV of previously capitalized launch costs. Management revised its methodology during FY 2009 and, based upon its new estimates, it recorded an adjustment of $84 million to capitalize the NBV of launch costs. In our initial reviews of management's revised methodology, developed in anticipation of the release of SFFAS No. 35, and estimation for capitalized launch costs, we noted that estimates were not fully supported by prior historical cost data, but management believes it has sufficient information to support reasonable estimates of such costs consistent with SFFAS No. 35 which will be effective in FY 2010.

  Ongoing efforts by NASA management to develop a robust and rigorous review process that both validates and challenges the adequacy of estimation techniques used and the sufficiency of documentation supporting those conclusions will serve NASA management well in preparing for the audit of these estimates. This type of ongoing control activity is crucial for the Agency as it implements and sustains any estimation modeling for valuing components of its PP&E. For the integration and operational costs, NASA noted that it had been capitalizing Integration and Operations (I&O) costs associated with the ISS after the ISS was placed into service on September 30, 2001. According to NASA's inquiries of an ISS specialist, these costs included ground and flight support, maintenance and repairs and NASA's current financial management team concluded these costs should have been expensed as operation costs and not capitalized. Management recorded a $1.4 billion adjustment to write off the NBV of previously capitalized I&O costs. Prior to these FY 2009 recorded adjustments, the NBV of NASA's PP&E would have been $18.1 billion as of September 30, 2009.

Progress has been made in revising NASA's policies and NASA has gained a deeper understanding of the components of its capitalized assets. The adoption of SFFAS No. 35, *Estimating the Historical Cost of G-PP&E*, in FY 2010 provides a unique opportunity for NASA to address the legacy valuation issues which have impaired its ability to prepare auditable financial statements. As noted above, issues regarding whether broad components of PP&E should be recorded have arisen and been addressed over the last several years, in each case calling into question the reliability of prior processes and reported amounts. In connection with critically assessing management's reported amounts for PP&E in FY 2010 and subsequent years, as valuation issues are addressed utilizing the ongoing flexibility in the new FASAB guidance, the need to ensure that property records are complete and property items can be associated with estimates of their original acquisition costs consistent with the guidance in SFFAS No. 35 will loom larger. Subjecting such processes to rigorous self-assessment under management's internal control review process under OMB Circular A-123, *Management's Responsibility for Internal Control*, Appendix A - *Internal Control over Financial Reporting*, and robust assessments of the legacy property records for completeness and accuracy, perhaps in conjunction with ongoing monitoring activities, will serve NASA well in ensuring that reported amounts are complete and reliable. NASA is currently participating in work groups intended to assist agencies in exploring supportable approaches to developing valuation estimates and supporting such amounts to the extent needed to withstand audit processes, with an initial particular focus on contractor-held property. These deliberations may impact NASA and third-party assessments of whether the initial processes developed by NASA in an effort to address anticipated changes in the FASAB literature conform to the financial management community's implementation guidelines for SFFAS No. 35. Going forward, internal controls, which have been revised to account for acquisitions of property under contracts with effective dates after October 1, 2007, hold promise in addressing new acquisitions; however, the effectiveness of such controls cannot currently be assessed pending issuance of new contracts that would be impacted by this policy.

Recommendation

We recommend that NASA:

1. Continue to actively improve implementation of SFFAS No. 35. Areas for particular focus include: (1) appropriate approaches in critically assessing prior recorded amounts for legacy assets when the initial documentation to support recorded amounts is not available, and the extent to which such initial recorded amounts, perhaps in conjunction with budgetary or other collaborative information, can be viewed as reasonable estimates; and (2) the extent to which the entity must associate ongoing outlays with individual items of PP&E versus recording amounts based on contractor-provided estimates in bulk, particularly for legacy contracts which do not contain current NASA requirements intending to aid in identifying when PP&E is being acquired, and NASA's responsibilities to verify reported amounts.

2. Develop an overarching key control activity that provides for a robust and rigorous review that both validates and challenges the adequacy of estimation techniques used and the sufficiency of documentation supporting those conclusions. This type of ongoing control activity is crucial for NASA as it implements and sustains any estimation modeling for valuing components of its PP&E. In addition, management should utilize existing monitoring activities and internal control assessments with a particular emphasis at the Center level in demonstrating that a comprehensive control process has been used to verify that detail property records are complete and reflect all PP&E, are reconciled to the recorded amounts in the general ledger, constitute NASA's best estimates consistent with SFFAS No. 35 of the historical costs of such items and that available information to aid in collaborating such amounts has been validated and appropriately considered.

Significant Deficiencies

Processes in Estimating NASA's Environmental Liability Continue to Require Enhancement (Modified Repeat Condition)

NASA's environmental liability is estimated at $922 million as of September 30, 2009, including the estimated environmental cleanup cost associated with PP&E. We noted that the NASA Office of the Chief Financial Officer (OCFO) and the Environmental Management Division (EMD) invested resources to resolve our prior-year finding related to the internal controls for the unfunded environmental liability (UEL) estimation process. NASA developed an estimate in September 2009 of the anticipated environmental cleanup costs associated with PP&E, implementing our prior recommendation to develop such estimate in accordance with SFFAS No. 6, *Accounting for Property, Plant, and Equipment.* The joint review process, a key control NASA implemented to enhance its estimation processes, began to mature in FY 2009 and added additional consistency to the UEL estimation process. While NASA continues to make year-to-year progress, we noted weaknesses in NASA's ability to generate an auditable estimate on a timely basis of its UEL environmental cleanup costs and its environmental liabilities associated with PP&E. Specifically:

- While the estimates for environmental costs associated with PP&E were not provided with sufficient time to support the audit process, NASA has acknowledged a need to develop training and controls supporting the development of the estimates, and noted that the estimates were initially developed under severe time constraints and resource limitations. To the extent further such resources and adequate time are devoted to this process, changes in the estimates may emerge. This includes but is not limited to the reclassification of SFFAS No. 5 liabilities to SFFAS No. 6.

- Approximately $170 million, or 17% of the UEL estimate, is developed using the parametric models within NASA's Integrated Data Evaluation & Analysis Library (IDEAL) estimating software. NASA has not completed the design and implementation of its general and application controls for this model. Examples include: NASA-prepared security plans for IDEAL, in which it indicated that actions to mitigate security risks need to be resolved. NASA finalized its Configuration Management Plan and verification reports for five centers in October 2009. A preliminary assessment noted that the Configuration Management Plan did not address system audits or reporting. We noted that preliminary analysis of the verification reports revealed certain unit costs embedded in IDEAL indicate that such factors may be overstated by 100% and 300%, but NASA has not yet fully assessed how, if at all, to change the models for this finding, or completed an analysis of other such inputs. In addition, NASA has had large year-to-year changes in environmental estimates, due in part to varying interpretations of certain markup definitions in the software and, as discussed below, revisions to its process used in assessing the number of years for which sufficiently reliable cost estimates can be developed.
- During FY 2009, NASA revised its estimation process to reflect that in general UEL estimates for the first 30 years of a project's lifespan will be recorded as a liability in the NASA financial statements. While the guidance is under continued revision, it is our understanding that if a sufficiently reliable engineering estimate has been developed beyond this 30-year period, such estimate will be considered in developing the accrual. This revision in the estimation process resulted in an approximate 25% reduction in the accrual for the related estimates. The process to develop this revision in NASA's procedures called into question the extent of coordination between OCFO and EMD, with aspects of the policy as initially articulated not conforming to GAAP. In addition, no formalized process for calculating and aggregating the SFFAS No. 5 reasonably possible estimate has been established. In FY 2009, an initial reasonably possible estimate was intended in part to capture the portion of long-term UEL estimates which exceeded 30 years and by definition, under NASA's policy, was judged not to be sufficiently reliable to record in the accrual, calling into question the reliability of the information for disclosure purposes as well. The estimate was compiled and aggregated by EMD with little support from the individual project managers, and OCFO was not aware of the process.

Recommendation

As it relates to the estimation of environmental liabilities, we recommend that NASA:

1. Enhance and formalize the process it has developed to estimate environmental cleanup costs under SFFAS No. 6, *Accounting for Property, Plant, and Equipment*, including dedicating additional resources to ensure compliance with the requirements, implementing internal controls and developing training. To the extent a portion of the previously reported environmental liability estimates subsume closure costs more appropriately recognized under SFFAS No. 6, NASA financial reporting can be enhanced by reclassification of footnote disclosures for such costs.
2. Complete the development and implementation of general and application controls as they relate to IDEAL. The initial focus should be on demonstrating the accuracy of both the parametric model and aggregation output. An alternative recommendation is to use a commercially available software tool that already meets these conditions.
3. Recode IDEAL to simplify markup inputs. For example, at present, the prime contractor markup is comprised of two embedded components to capture markup for the prime contractor and subcontractor, which should be revised to only allow input for one NASA component at a time. Re-emphasize in the annual training provided to NASA's center EMD and OCFO personnel the explanations of these entries.
4. Implement preventative actions (i.e., controls) to address change management for accounting policy alterations to environmental liabilities and implement rigorous quality control efforts regarding associated footnote disclosures of reasonably possible and recorded amounts, including explicit discussion and conclusion on these items in the joint review process. Assign roles and responsibilities for implementation and for proper communication throughout the organization.

Financial Management Systems Not in Substantial Compliance with FFMIA (Modified Repeat Condition)

NASA's financial management systems are not substantially compliant with the Federal Financial Management Improvement Act of 1996 (FFMIA). During FY 2009, as discussed above, NASA management took action to address its noncompliance with the FFMIA. Although these steps corrected certain weaknesses noted during the past five years, other weaknesses continue to exist. Specific weaknesses noted include the following:

- The real property system is not integrated with the Core Financial Module.

- Issues related to access and change management were noted as a result of information technology (IT) audit procedures. The level of risk associated with these IT issues depends in part upon the extent to which financial-related compensating controls (such as reconciliations and data integrity reviews of output) are in place and operating effectively throughout the audit period. Certain of these controls designed to detect errors or inappropriate processing may also not be executed in a manner which can be expected to identify errors, which, while perhaps not material to the financial statements as a whole, may subject NASA to risks regarding safeguarding of assets. Although NASA has made progress in addressing and resolving prior-year IT findings, these IT-related issues, along with issues noted by Ernst & Young, the Government Accountability Office (GAO) and the NASA Office of Inspector General (OIG) in their reviews through the year, merit continued management focus.
- NASA was unable to meet certain requirements to ensure compliance with federal accounting standards, as discussed in various sections within this report.

Recommendation

We recommend that NASA:

1. Move forward to integrate government-held real property transactions into the Asset Accounting Module of SAP in February 2010 and continue efforts to integrate recording of PP&E transactions contemporaneous with their occurrence,

2. Resolve issues identified during our IT procedures in our audit related to access and change management surrounding its financial management systems.

Other Matters

Summary of FY 2008 Material Weaknesses

Issue Area FY 2008	Summary Control Issue FY 2008	FY 2009 Status
Material Weaknesses		
Financial Systems, Analyses, and Oversight	• Continuous Monitoring Program • Financial Statement Preparation Process • Continued Efforts needed to Resolve Data Integrity Issues • Processes in estimating NASA's Environmental Liabilities continue to require enhancements. • Financial management systems not in substantial compliance with FFMIA.	Significant improvements noted. Aspects related to UEL and FFMIA compliance reported as significant deficiencies.
Enhancements Needed for Controls over PP&E and Materials Contracts	• Enhancements Needed for Controls over Legacy PP&E and Materials Contracts	Improvements noted pending SFFAS No. 35 adoption. Modified repeat condition.

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We have reviewed our findings and recommendations with NASA management. Management generally concurs with our findings and recommendations and will provide a corrective action plan to address the findings identified in this report.

This report is intended solely for the information and use of the management and the OIG of NASA, OMB, GAO and Congress, and is not intended to be and should not be used by anyone other than these specified parties.

Ernst + Young LLP

November 9, 2009