



Office of Inspector General
Washington, DC 20546-0001

September 19, 2007

TO: Associate Administrator for Space Operations
Program Director, Integrated Enterprise Management Program

FROM: Assistant Inspector General for Auditing

SUBJECT: Final Memorandum on the Audit of Space Shuttle Program Costs
(Report No. IG-07-026; Assignment No. A-06-004-00)

The Office of Inspector General (OIG) has completed an audit of Space Shuttle Program (SSP) costs. Our objectives were to determine whether the SSP established appropriate accounting systems to track costs and whether those costs were tracked in association with cost estimates. (See Enclosure 1 for details on the audit's scope and methodology.)

Executive Summary

In accordance with "NASA Financial Management Requirements" (FMR), September 2004, the SSP was using the Core Financial module of the Integrated Enterprise Management Program¹ (IEMP) as its financial system of record. However, the SSP's ability to use Core Financial data to track actual costs in association with cost estimates was limited. Because Core Financial does not produce financial reports in the format needed by the SSP, the SSP developed a transfer process to extract actual cost data from Core Financial for input into the SSP's management information system—One NASA Management Information System (NMIS). NMIS contains preformatted financial reports and assessment tools that enable SSP managers to track actual costs, compare those costs to cost estimates, and make cost-related management decisions. However, the transfer process used by the SSP was manually intensive and time consuming; for example, during the 8-month period from October 2006 to May 2007, we identified instances when the NMIS financial reports were not updated until 90 days after the end of the monthly reporting period.² To make informed decisions based on cost data, the SSP managers need more timely access to useful financial reports.

During our audit, IEMP initiated a "gap analysis" to compare the financial reporting needs of program and project managers against IEMP functionality and identify those areas where IEMP does not provide the financial data necessary to adequately manage NASA's programs and projects. The gap analysis was completed in July 2007 and is part of NASA's ongoing effort to improve the Agency's ability to link financial management

¹ IEMP, formerly the Integrated Financial Management Program (IFMP), was renamed in June 2005.

² According to IEMP and SSP, the upgrade of the Agency's Core Financial system software, known as the SAP Version Update, affected the timeliness of cost data between October and December 2006.

to program and project management decision making. We believe that the gap analysis is a key step in NASA's improvement effort and that the timeliness of financial reports should be considered as one of the functionality gaps. In the draft of this memorandum, we recommended that the Program Director, IEMP, include "timely reporting of financial data" as one of the IEMP functionality gaps and to consider development of a system interface between IEMP and NMIS as a possible solution to that functionality gap. We also recommended that the Associate Administrator for Space Operations determine whether NMIS cost data can be updated in a more timely manner and, if not, to evaluate the utility of continuing to update NMIS on a monthly basis.

In response to the draft of this memorandum (see Enclosure 2, "Management Comments"), NASA management generally concurred with the finding but took exception to several issues stated in the draft memorandum. We discussed those issues with representatives from IEMP and SSP and made revisions to the memorandum where necessary. Regarding our recommendation concerning the timeliness of financial data, the Program Director, IEMP, stated that the timeliness of financial reporting was a temporary problem, attributable to the October 2006 Systems Applications and Products (SAP) Version Update. He also stated that to build an interface between IEMP and NMIS, SAP would need to initiate the request through the established IEMP service request process. We disagree that timeliness of financial reporting was a temporary problem as our review of NMIS indicated that the problem with data timeliness was not limited to the October through December 2006 data, specifically in regards to the performance indicator and early warning system data. We believe that an Agency-wide enterprise management system should provide for timely financial reporting in a format required by the program or project and without extensive manual intervention. However, we are not requesting additional comments because the initial results of the IEMP gap analysis (which was completed after our draft memorandum was issued) indicate that corrective action taken to resolve the identified gaps should resolve our timeliness concerns. Therefore, we consider the recommendation resolved and closed.

Regarding our recommendation concerning cost updates to NMIS, the Associate Administrator for Space Operations stated that he would work with the SSP to determine the appropriate date each month to update NMIS. He also stated that additional personnel will be authorized to approve cost charts in NMIS and that the SSP Business Manager will approve cost charts when received instead of waiting until all charts are made available by the individual projects. We consider these actions responsive and consider the recommendation resolved and closed.

Background

Cost Management. NASA has been criticized in the past for its lack of cost management controls over its programs and projects. The Government Accountability Office (GAO) has included NASA on its high-risk list because of the Agency's inability to provide its managers with timely, relevant data on contract spending (about 85 percent of its annual budget) and performance since 1990. From March 2002 through

March 2007, GAO issued 15 reports and OIG issued 8 reports addressing NASA's need to improve the management and oversight of costs. In addition, Ernst and Young, the accounting firm who audited NASA's financial statements for fiscal years (FY) 2004 through 2006, stated in its Report of Internal Controls, November 3, 2006, that since the year ending September 2003, "significant financial management issues continue to impair NASA's ability to accumulate, analyze, and distribute reliable financial information . . . on a timely basis."

SSP costs are specifically discussed in four of the GAO and three of the OIG reports. GAO and OIG found that SSP cost information was not always reliable and accurate for financial reporting or management decision-making purposes. In addition, in an independent study conducted to assess the implementation of the Columbia Accident Investigation Board's Return to Flight recommendations, "Final Report of the Return to Flight Task Group," July 2005, several members of the Task Force stated that SSP exhibited an overall lack of cost management.

Financial System. In FY 2000, NASA began implementation of IEMP, which was established to develop an integrated, NASA-wide financial management system through use of commercial software packages and related hardware and software components. As of June 2007, nine components of IEMP had been deployed; deployment of an additional seven components is planned. NASA has estimated IEMP's life-cycle costs through 2008 to be about \$998 million.

Financial Guidance. NASA's overarching financial guidance is contained in the 19 volumes of the FMR. The FMR describes NASA's financial process, from budget formulation activities and execution to internal controls and accounting. FMR, Volume 7, Chapter 5, sections C.1-4 and D.1-5, describe the program and project managers' responsibilities concerning costs and cost controls. Responsibilities include planning and reviewing all projected program and project costs, monitoring actual costs against planning levels, and providing day-to-day oversight and management of all program and project costs.

SSP Accounting System

As required by FMR, Volume 8, Chapter 1, section 010101A-D, SSP staff was using the IEMP's Core Financial module as the accounting system of record. Core Financial is customized off-the-shelf software developed by SAP. Core Financial serves as the "backbone" to IEMP and is used to record accounting transactions including commitments, obligations, and expenditures and to produce the annual financial statements. Monthly, SSP contractors submit to the SSP project business offices NASA Form 533, "Monthly Contractor Financial Management Report," which contains the actual costs for the month just ended and estimated costs for the current month. SSP project office staff provides cost and estimate updates from each Form 533 to the Chief Financial Office where Resource Analysts integrate the 533 data with related project data in IEMP, including project direct costs. After the data input is completed, Core Financial contains the information necessary to produce actual cost reports for the month just

ended. Projected cost reports for the current month and through the end of the fiscal year are recorded in NMIS.

Although Core Financial contains the data necessary to produce financial reports, it does not have a set of standardized report formats that contain the financial data necessary to manage program and project costs and performance. Therefore, SSP staff uses Business Warehouse (BW) to extract financial data from Core Financial. BW is a Web-based application and component of Systems Applications Products software that provides users a set of predefined queries that can be modified to meet specific reporting needs. Updated nightly, NASA's BW database consists primarily of data loaded from Core Financial, including data loaded from subsystems that feed into Core Financial such as the Travel Manager System and the Labor Distribution System. Once the SSP staff extracts the financial data from BW, the data is populated to NMIS, which contains financial reports formatted for use by the program and project managers.

SSP Cost Tracking

Although the SSP was appropriately using Core Financial as its accounting system of record, the ability to use Core Financial data to track actual costs in association with cost estimates was limited because Core Financial did not produce financial reports in the format needed by the SSP. To generate the financial reports needed by SSP managers, SSP business office personnel extracted cost data from Core Financial and formatted it for input into NMIS. NMIS was implemented Agency-wide in July 2003 as the authoritative source of Program and Center management information for senior management at the Agency level. It contains data concerning program and project cost estimates, actual costs, personnel, and performance indicators, as well as links to other management information systems internal and external to NASA. SSP cost data is posted to the following NMIS reports and assessment tools:

- Monthly cost reports - Data presented includes a cost summary of estimated vs. actual costs, forecasted costs through the end of the fiscal year, and cost detail by procurement and nonprocurement costs. Reports are available by individual SSP project and at the program level.
- Performance indicators - Data is presented graphically to provide an assessment of a program's performance relative to a requirement or goal, such as cost, schedule, or performance. Performance status is presented as stoplight color-coded arrows signifying improving, steady, or worsening performance. For example, a yellow arrow pointing up would indicate an assessment that performance is off track (yellow) but improving with respect to the goal (up).
- Early Warning System - Although referred to as a system by NASA, the Early Warning System is a PowerPoint display used by NASA to review issues or trends and predict end-of-year over or under availability of funds, possible threats, and cost reductions.

Because the NMIS data that originated in Core Financial was extracted to BW and then input to NMIS, we were concerned about data accuracy and timeliness. To determine whether the SSP cost data in NMIS matched the cost data presented in BW, we traced selected SSP direct and indirect costs reported in NMIS back to the BW reports and the original supporting documentation. SSP cost data in NMIS generally matched the corresponding data from BW reports; specifically, of the 51 data items that we tracked, we determined that none of the differences in SSP direct or indirect costs were material when compared to the total line item cost for the fiscal year. For indirect costs, we identified an unrelated issue pertaining to the methodology used to allocate indirect costs to the SSP and referred the issue to our Financial and Institutional Management Directorate.³

Although we found no material differences in the costs as reported in Core Financial and BW compared to NMIS, we found that the data was not timely updated to NMIS. For example, we reviewed the NMIS reports and assessments for FY 2007,⁴ and as of June 6, 2007, NMIS reflected the following FY 2007 SSP cost data:

- Monthly cost reports - The most recent SSP monthly cost report available was for the month ending April 30, 2007. Prior to that report, it appeared that monthly cost data for October, November, and December 2006, was posted in February 2007 (over 120, 90, and 60 days after the end of the monthly reporting period, respectively).⁵
- Performance indicators - Indicators related to cost were included for only 3 of the 8 months completed in FY 2007—January, March, and April 2007. The performance indicators were not updated, on average, until 90 days after the end of the monthly reporting period. We also identified an example in which the chart that contained the performance indicator (a yellow up arrow), stated “as of 4/30/2007,” however, the back-up documentation for that chart contained cost data only through March 2007.
- Early Warning System - Data was available for only 5 of the 8 months completed in FY 2007—December 2006 and January, February, March, and April 2007. Updates to NMIS early warning system data were posted as much as 6 months after the end of the reporting period.

One of the delays in updating NMIS was the transfer process used to extract the necessary financial data from Core Financial and populate it to NMIS. Because there is not an automated interface between IEMP and NMIS, SSP Business Office staff must

³ Because NASA changed its Agency-wide method for allocating indirect costs in FY 2007, the OIG Financial and Institutional Management Directorate chose not to initiate an audit on indirect cost allocation but may address the issue once the new allocation method has stabilized.

⁴ We focused on the FY 2007 data because NMIS did not contain specific dates that the reports and assessment tools were updated; therefore, we could only report on the data available on a specific day. For the purposes of our audit, we used June 6, 2007.

⁵ According to IEMP and SSP, the upgrade of the Agency’s Core Financial system software, known as the SAP Version Update, affected the timeliness of cost data between October and December 2006.

manually transfer the data each month. Specifically, the SSP Business Office staff was required to query Core Financial, using BW to extract the needed financial data;

- format the cost data (“format” being the term the SSP Business Office staff used for identifying, selecting, and grouping the financial data at the program level);
- key in the formatted cost data to an Excel spreadsheet;
- transfer the data from Excel to Power Point and then to the Support Applications for NASA Management and Information System (SANMIS);⁶
- review and analyze the cost data entered in SANMIS; and
- transfer the cost data to NMIS.

An additional delay is caused because the projects must conduct a variance analysis before the financial data is loaded to NMIS. The variance analysis is conducted to develop explanations and rationale for variances in monthly cost data between the planned and actual cost. Only when the variances are approved can the data be loaded to NMIS. During our audit, only one employee was authorized to approve the variances, and therefore, when that employee was not available, additional delays in updating NMIS were experienced.

According to SSP Business Office staff, because of the delay in updating the cost data to NMIS, program and project managers make little use of the NMIS data to manage their projects. SSP managers rely instead on hard copy reports, electronic spreadsheets, weekly or quarterly meetings, or other means to monitor cost and performance.

Management Actions

In response to the prior GAO and NASA OIG findings and recommendations concerning the management and oversight of costs, NASA has taken steps to improve its approach to enterprise management. In 2006, NASA completed an internal study,⁷ which concluded that although IEMP’s initial focus was on providing an information technology solution to financial management, the focus should be expanded to provide an information technology solution to overall Agency management processes and business integration. The study recognized that certain stakeholders (such as program and project managers) did not fully participate in defining IEMP data requirements and recommended that an analysis be conducted to compare the IEMP functionality needed at all levels of the Agency to the functionality provided by the IEMP components—a “gap analysis.”

Concurrent with that IEMP gap analysis, NASA began addressing the GAO high-risk issue—that NASA lacked a modern, fully implemented, integrated financial management system that could provide the information necessary to assess contract performance.⁸

⁶ SANMIS is an application used by authorized Associate Administrators and SSP personnel at various NASA Centers to post and view key program data.

⁷ Independent Program Assessment Office study, “IEMP Program Implementation Review,” April 7, 2006.

⁸ Government Accountability Office. “High-Risk Series: An Update” (GAO-07-310, January 2007).

The Agency developed a corrective action plan to address the issue, but because of the similarity between the corrective action plan and the IEMP gap analysis, the Agency determined that the two efforts should be undertaken jointly. The gap analysis was completed in July 2007, and the initial results indicate that our concerns with the timeliness of financial reporting are indirectly addressed as IEMP functionality gaps. The Agency plans to further analyze the gaps and translate them into a set of actions and requirements.

Conclusion

We agree with the Agency's approach to addressing the need for a more robust enterprise management system by conducting the gap analysis. Identifying the gap between need and functionality and using that information to update the integrated financial management system is a key step to providing Agency stakeholders (such as the program and project managers) with cost data necessary to effectively manage their respective programs and projects. The Agency needs to continue working to close the gaps so that IEMP will provide the functionality needed to timely track program and project costs, performance, and schedule and so that informed management decisions can be made. We believe that IEMP should consider an automated interface between Core Financial and program-level management information systems (such as NMIS). Until such functionality exists, the SSP should determine whether NMIS cost data can be updated in a timelier manner and, if not, evaluate the utility of continuing to update NMIS on a monthly basis.

Management's Comments on the Finding and Evaluation of Management's Comments

Management's Comments on the Finding. Management (the Associate Administrator for Space Operations and the Program Director, IEMP) generally concurred with the finding, but took exception to several issues stated in the draft memorandum. Specifically, management requested that we revise the number of IEMP components deployed, use the term "data needs analysis" instead of gap analysis, indicate that the gap analysis was completed in July 2007, and clarify references to projected cost data and the personnel responsible for 533 input. Management also requested that we include additional data on the SSP variance analysis process and cite the impact of the October 2006 SAP Version Update on the timeliness of financial data.

Evaluation of Management's Comments. We met with management on the exceptions taken to the draft memorandum and, based on the results of that meeting, revised the memorandum where necessary. Specifically, we noted the completion of the gap analysis, clarified the references to projected cost data and the personnel responsible for 533 input, and included data on the SSP variance analysis process. We also cited the impact of the October 2006 SAP Version Update on the timeliness of financial data. We did not revise the number of IEMP components deployed, as management agreed that our

original data was correct; nor did we replace the term “gap analysis” with “data needs analysis,” as our terminology is commonly used within the Agency.

Recommendations, Management’s Response, and Evaluation of Management’s Response

Recommendation 1. The Program Director, IEMP, should ensure that timely cost reporting is included as an IEMP functionality gap and consider the development of a system interface from IEMP to a management information system as a viable solution to that functionality gap.

Management’s Response. The Program Director, IEMP, stated that the SSP was no longer having difficulty obtaining timely cost data from IEMP and that the October 2006 SAP Version Update had contributed to a temporary timeliness problem from October through December 2006. The Program Director stated that the SSP would need to initiate action to build an interface between IEMP and NMIS by following the established IEMP service request process.

Evaluation of Management’s Response. The Program Director’s response did not specifically address our recommendation. We disagree that timeliness of cost data was a temporary problem as our review of NMIS indicated that the problem with data timeliness was not limited to October through December 2006, specifically in regards to the performance indicator and early warning system data. We believe that an Agency-wide enterprise management system should provide for timely financial reporting in a format required by the program or project and without extensive manual intervention. During our meeting to discuss potential revisions to the memorandum, IEMP personnel stated that because the projects and programs had different reporting requirements, IEMP could not provide cost data tailored to each program and project. However, the initial results of the IEMP gap analysis indicate that standardization of reports and the need to reduce manual intervention by automating additional processes are two of the gaps that are considered as priorities. We believe corrective action taken to address those gaps will also improve the timeliness of cost reporting and, therefore, we are not requesting additional comments. The recommendation is resolved and will be closed.

Recommendation 2. The Associate Administrator for Space Operations should direct the SSP to determine whether NMIS cost data can be updated in a timelier manner and, if not, to evaluate the utility of continuing to update NMIS on a monthly basis.

Management's Response. The Associate Administrator for Space Operations stated that the audit team should not have drawn conclusions on the timeliness of cost reporting based on a single point in time. However, he stated that he will work with the SSP to determine the appropriate date each month when NMIS data will be required to be posted. In addition, the SSP will authorize additional personnel to approve the NMIS cost charts and the SSP Business Manager will individually approve and post the cost charts when received instead of waiting until all charts are made available by the individual projects.

Evaluation of Management's Response. Management's comments are responsive to the intent of our recommendation. The recommendation is resolved and will be closed. Regarding the use of a single point in time to draw our conclusions on data timeliness, we state in the memorandum that because NMIS did not contain specific dates when reports and assessment tools were updated, we could only report on the data available on a specific day.

We appreciate the courtesies extended during our audit. If you have any questions, or need additional information, please contact Ms. Carol N. Gorman, Space Operations and Exploration Director, at 202-358-2562.



Evelyn R. Klemstine

2 Enclosures

cc:

Director, Marshall Space Flight Center
Director, Johnson Space Center
Manager, Space Shuttle Business Office

Scope and Methodology

We performed work at Headquarters, Johnson Space Center, and Marshall Space Flight Center. We focused the review of SSP costs on the following SSP projects: Orbiter, Space Shuttle Main Engine (SSME), External Tank (ET), Solid Rocket Booster (SRB), and Reusable Solid Rocket Motor (RSRM). We interviewed personnel from the Space Operations Mission Directorate, Office of Chief Financial Officer, and the SSP Program Office. We familiarized ourselves with IEMP, selected IEMP modules, and NMIS. We also obtained and reviewed NASA financial guidance and SSP implementing instructions.

We compared the FY 2005 SSP costs from BW and Core Financial with the financial data reported in NMIS by tasking personnel independent of the SSP to query BW for FY 2005 SSP costs. When possible, we correlated the query results to cost elements in NMIS. To determine the accuracy of costs recorded in Core Financial, we judgmentally selected and reviewed the following:

- **Project Funding:** For the ET, SRB, RSRM, SSME, and Orbiter we compared the total project funding amount reported in NMIS (FY 2005 Operating Plan with approved changes) to the actual Resource Authority Warrant to determine if there were any transfers between projects to cover cost overruns/underruns.
- **Project Total Cost:** For the ET, SRB, RSRM, SSME, and Orbiter we compared the total project costs, which include both direct and indirect costs, that were reported in NMIS to those recorded in BW to determine if there were differences in the reporting of the project costs.
- **Project Indirect Cost:** For the ET, SRB, RSRM, SSME, and Orbiter we compared Personnel, Travel, General and Administrative, and Service Pool project costs (indirect costs) reported in NMIS to those recorded in BW to identify any differences in reporting of the costs.
- **Project Direct Cost:** For the ET, SRB, RSRM, and SSME we sampled contract obligation amounts reported in BW and verified the amounts to the supporting procurement documents to determine their accuracy. For the Orbiter, we sampled five contractor modifications for validity of the obligation and to identify if the program was obligating expiring funds.

To determine the timeliness of NMIS updates, we reviewed the SSP data posted in NMIS during FY 2007. We performed this audit from December 2005 through September 2007 in accordance with generally accepted government auditing standards.

Use of Computer-Processed Data. We relied on computer-processed data for this memorandum. We obtained queries from BW, which integrates data from the Core Financial module, procurement, travel, and labor modules. We compared data extracted from BW to data maintained by the SSP and determined causes for material differences.

We traced judgmentally selected contract obligations obtained from the BW queries to source documents to validate their accuracy. We did not perform a data assessment of the computer-processed data systems.

Review of Internal Controls. We reviewed policies and procedures for full cost accounting and cost estimating. Because the FY 2005 internal control assessments were only completed at the NASA mission level, there was no assessment performed for the SSP in FY 2005. We obtained the last vulnerability assessments performed for the SSP Propulsion project. The vulnerability assessments were dated 1992 and 1993 and had little relevance to the control environment for the program today.

Prior Coverage. During the last 5 years, the Government Accountability Office (GAO) and NASA Office of the Inspector General (OIG) have issued 23 reports of particular relevance to the subject of this memorandum. Unrestricted reports can be accessed over the Internet at <http://www.gao.gov> (GAO) and <http://www.hq.nasa.gov/office/oig/hq/audits/reports/FY07/index.html> (NASA).

Government Accountability Office

“High-Risk Series: An Update” ([GAO-07-310](#), January 2007)

“NASA: Issues Surrounding the Transition from the Space Shuttle to the Next Generation of Human Space Flight Systems” ([GAO-07-595T](#), March 28, 2007)

“NASA’s Deep Space Network: Current Management Structure Is Not Conducive to Effectively Matching Resources with Future Requirements” ([GAO-06-445](#), April 27, 2006)

“Business Modernization: Some Progress Made toward Implementing GAO Recommendations Related to NASA’s Integrated Financial Management Program” ([GAO-05-799R](#), September 9, 2005)

“Financial Audit: The National Aeronautics and Space Administration’s Fiscal Year 2004 Management Representation Letter on Its Financial Statements” ([GAO-05-591R](#), June 23, 2005)

“NASA: Compliance with Cost Limits” ([GAO-05-492R](#), April 8, 2005)

“NASA: Lack of Disciplined Cost-Estimating Processes Hinders Effective Program Management” ([GAO-04-642](#), May 28, 2004)

“National Aeronautics and Space Administration: Significant Actions Needed to Address Long-standing Financial Management Problems” ([GAO-04-754T](#), May 19, 2004)

“NASA: Compliance with Cost Limits” ([GAO-04-648R](#), April 2, 2004)

“Business Modernization: Disciplined Processes Needed to Better Manage NASA’s Integrated Financial Management Program” (GAO-04-118, November 21, 2003)

“Business Modernization: NASA’s Challenges in Managing Its Integrated Financial Management Program” (GAO-04-255, November 21, 2003)

“Business Modernization: NASA’s Integrated Financial Management Program Does Not Fully Address Agency’s External Reporting Issues” (GAO-04-151, November 21, 2003)

“Information Technology: Architecture Needed to Guide NASA’s Financial Management Modernization” (GAO-04-43, November 21, 2003)

“Business Modernization: Improvements Needed in Management of NASA’s Integrated Financial Management Program” (GAO-03-507, April 30, 2003)

“Space Station: Actions Under Way to Manage Cost, but Significant Challenges Remain” (GAO-02-735, July 17, 2002)

“NASA: Compliance with Cost Limits Cannot Be Verified” (GAO-02-504R, April 10, 2002)

National Aeronautics and Space Administration

“NASA’s Plan for Space Shuttle Transition Could be Improved by Following Project Management Guidelines” (IG-07-005, January 29, 2007)

“Governance of the Systems, Applications, and Products Version Update Project Needs Improvement” (IG-07-003, November 21, 2006)

“NASA’s Travel Module Lacks Management Control Structure and Compliance with Federal Requirements” (IG-04-027, September 24, 2004)

“Report on the Audit of the Return-to-Flight Task Group’s Business Processes” (IG-04-021, July 21, 2004)

“Final Report on Internal Controls Over Columbia Accident Investigation Board (CAIB) Costs” (IG-04-013, March 16, 2004)

“NASA Contracts for Professional, Administrative, and Management Support Services” (IG-03-003, October 16, 2002)

“Management of Forward Funding and Undisbursed Costs” (IG-02-015, March 29, 2002)

“International Space Station Spare Parts Costs” (IG-02-011, March 22, 2002)

Management's Comments

National Aeronautics and
Space Administration
Headquarters
Washington, DC 20546-0001



August 24, 2007

Space Operations Mission Directorate

TO: Assistant Inspector General for Auditing
FROM: Associate Administrator for Space Operations
SUBJECT: Draft Memorandum on the Review of Space Shuttle Program Costs
(Assignment Number A-06-004-00)

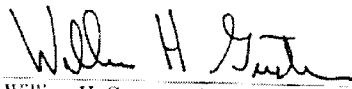
We have reviewed the subject draft memorandum and thank you for the opportunity to provide comments. This response has been coordinated with the Integrated Enterprise Management Program (IEMP) and Johnson Space Center, Space Shuttle Program Office. The consolidated IEMP and Space Operations Mission Directorate (SOMD) comments and responses to the two recommendations are enclosed.

We concur with the Office of Inspector General (OIG) that the process for reporting data to the NASA Management Information System (NMIS) should be updated on a regular basis but only on a schedule that allows for meaningful information to be displayed. SOMD already has unique reports that they use to download Business Warehouse data that could be converted into a unique interface. SOMD will review the proposed report recommendation during Fiscal Year (FY) 2008 to see if it can be beneficial to providing more timely program data.

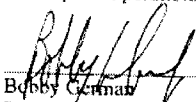
We would also note that we have taken additional mitigation actions to address both recommendations outlined in this report.

We take exception to several items in this report and SOMD and IEMP are requesting a meeting with your office to resolve several areas noted in the enclosure letter to the draft report.

We are always looking for opportunities to improve ourselves and our systems, and we appreciate the expertise and insights provided by the OIG on this matter. If you have any questions regarding these comments, please contact the Headquarters point of contacts for this audit: Mr. David Lurie, SOMD, 202-358-2512 and Ms. Sandra Smalley, IEMP, 202-358-4731.

 24 August 2007

William H. Gerstenmaier
Associate Administrator
for Space Operations

 8/24/07
Bobby Corman
Program Director, Integrated Enterprise
Management Program

Enclosure

cc:

Director, Johnson Space Center
 Manager, Space Shuttle Program (JSC/MA)
Director, Kennedy Space Center
Director, Marshall Space Flight Center
 ALR/Ms. Keri Roberts
Director, Management Systems Division
Space Operations Mission Directorate
 Space Shuttle/Mr. Hill
 /Mr. Krezel
 Resources/Mr. Radzanowski
 /Mr. Lurie
 ALR/Ms. Gail Gabourel
Integrated Enterprise Management Program
 Ms. Sandra Smalley

**Responses to
Office of Inspector General
Draft Memorandum on the Audit of
Space Shuttle Program Costs (#A-06-004-00)**

Recommendations for Corrective Action:

Recommendation 1.

The Program Director of IEMP, should ensure that timely cost reporting is included as an IEMP functionality gap and consider the development of a system interface from IEMP to a management information system as a viable solution to that functionality gap.

Response. The IEMP program office appreciates the opportunity to review and provide comments regarding this memorandum. Upon review, IEMP is concerned there is a misperception regarding the availability of timely cost data in Systems Applications and Products (SAP) and Business Warehouse (BW). Commitment, Obligation and Cost data are provided real time in SAP and within 24 hours via BW. Per conversation with the Space Shuttle Program (SSP), the sparse availability of cost data between October and December 2006 was associated with the upgrade of the Agency's Core Financial system software, also known as the SAP Version Update (SVU). During that period, the system was closed to users to perform the upgrade and close out the previous year. The system was opened up to users on November 15th. Contractor 533 cost data is available the first day following month-end close.

The SSP program indicated that they are no longer having difficulty acquiring timely cost data from SAP. The SSP does extract data from SVU and imports it via excel into a Power Point presentation to format the data per management requirements. They have taken steps to automate this process through the utilization of macros.

Should the SSP concur with the IG's recommendation to build a unique interface, then SSP should follow the established service request (SR) process and submit clearly defined interface requirements to the IEMP Competency Center (CC). This SR will be assessed and prioritized by the CC and/or the Management/Business Systems Integration Group (M/BSIG) depending on the complexity of the request. All M/BSIG recommendations will be dispositioned by the Associate Deputy Administrator or the Operations Management Council. Approved recommendations will be implemented based upon funds availability and agency prioritization.

IEMP recommends the IG schedule a meeting with the SSP, IEMP, and the Office of the Chief Financial Office (OCFO) to clarify any further concerns. Specific items for discussion are as follows:

Revision moved reference to page 3, paragraph 3, line 4

Revision moved reference to page 6, paragraph 3, line 7

Revision moved reference to page 7, paragraph 1, line 3

Report revised by OIG to indicate completion in July 2007

1. Page 2, 4th paragraph, 4th line: "As of June 2007, nine components of IEMP had been deployed; deployment of an additional seven components is planned."

Correction: Eleven components have been deployed and four remain.

2. Page 6, paragraph 1, line 2: "The study recognized that certain stakeholders (such as program and project managers) did not fully participate in defining IEMP data requirements and recommend that a "gap analysis" be conducted to compare the IEMP functionality needed at all levels of the Agency to the functionality provided by the IEMP components."

Correction: The Program Analysis and Evaluation (PA&E) study recommended that IEMP perform a data needs analysis. The recommendation was subsequently refined to identify agency business system gaps for the project management community.

3. Page 6, paragraph 2, line 6: "The IEMP gap analysis is projected to be completed in July 2007 and the resulting corrective action plan is to be completed in December 2008."

Correction: The gap identification activity was completed in July 2007. The corrective action plan has not been developed. The identified project management gaps will be prioritized by an agency-wide team, the M/BSIG as part of a larger needs prioritization process. Actions will follow the prioritization process.

Recommendation 2.

The Associate Administrator for Space Operations should direct the SSP to determine whether NMIS cost data can be updated in a timelier manner, and if not, to evaluate the utility of continuing to update NMIS on a monthly basis.

Response. The SOMD will work with the SSP to determine the appropriate date each month when NMIS Data will be required to be posted.

However, SOMD does not believe it is an accurate assessment of the SSP process to review the data posted on NMIS at a single point in time and then draw conclusions about the entire process. We agree that the raw data is available from IEMP by the fourth working day of the month and could be deployed to NMIS earlier than it is currently done. The raw data by itself is not meaningful though and should not be deployed to NMIS earlier than it is currently done because additional time is needed for performing the analysis necessary to explain the data variances. This is a valuable part of this process and requires human evaluation.

In order to provide SOMD management a useful status, it is necessary for the program to develop the variance explanations that go with the data. This is not something that can (or should) be generated from IEMP. It requires human interaction to generate the rationale and then additional time for the rationale and variances to be discussed and approved by program management prior to it being posted on NMIS. Posting data directly from IEMP with no

explanation can be misleading to the users, especially those who do not work with the program on a daily basis. The Space Shuttle projects are currently given 17-20 calendar days from the beginning of the month to collect the data from IEMP, gather variance explanations from internal (within their project) and external (contractors, other centers, supporting organizations) sources and then brief their project managers. The projects then report this data to the SSP Business Manager. At that point, the projects make any required changes to their NMIS charts and reload them where the program can approve them and then they can be viewed.

There are two steps at the end of this process which the program will be changing to ensure the data is timely:

Change 1. The SSP policy has been to hold all of the charts until every project has made their updates. Therefore, if there was a question on a variance explanation that required additional research, all of the charts could be held up waiting on one input. In the future, the SSP Business Manager will be approving all of the charts immediately after the charts are presented and then re-approving any that get updated.

Change 2. The SSP business office currently has only one person authorized to approve charts in NMIS. On several occasions this has led to data being delayed up to a week from being posted. The program is currently in the process of identifying additional personnel who will be given the authority to do approvals. This should eliminate any more delays due to individual availability.

Additionally, SOMD believes that the IG's assessment of this process is completely misleading for this fiscal year. Any minor SSP reporting problems are completely overwhelmed by the huge reporting problems that were driven by SVU. We request that the IG revise this assessment to take this into account.

SOMD recommends the IG schedule a meeting with the SOMD to clarify any further concerns. Specific items for discussion are as follows:

1. Page 1, 2nd paragraph, 12th - 14th lines: Executive Summary - The finding of charts being 90 days out of date was due to the SVU upgrade. The SSP should not alter the entire process because of system issues specific to this year.

Correction: Report should be modified to note the SVU issues contributed to the delays in maintaining NMIS reporting during the fiscal year.

2. Page 3, 1st paragraph, 12th and 13th lines: SSP Accounting System: Core financial does not have "projected cost...through the end of the FY."

Correction: Report should be modified to delete references to projected cost through the end of the FY.

Added
footnotes 2
and 5

Deleted

Revision moved reference to page 3, paragraph 5, lines 9-12

Revision moved reference to page 4, paragraph 3, bullet 1

Added footnotes 2 and 5

Revision moved reference to page 6, paragraph 2

3. Page 3, 2nd paragraph, 9th and 10th lines: SSP Accounting System - The office that does the 533 input functions are "CFO resource analysts" not "SSP project office staff."

Correction: Report should be modified to correctly reference the staff that inputs 533 data.

4. Pages 4, 1st paragraph: Monthly Cost Reports - There are several issues at work here. One is the SVU problem, which we do not believe will be a yearly problem. Also, it is impossible to tell when these reports might have been initially posted. For example, if a cost report were posted in November and then updated in February, the system will only tell you that the current file was posted in February. There has never been a system requirement to track history on how many times a report gets posted or when they might have occurred. The only way to get this data accurately is to review it every month. Furthermore, we do not believe it would be value added to put a history tracking constraint in place.

Correction: Report should be modified to state that the SVU issues prevented timely reporting during the first half of FY 2007 in NMIS due to financial integrity issues that were being resolved during that time.

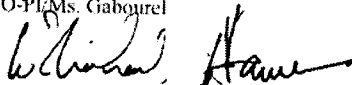
5. Page 5, 3rd paragraph: "The primary delay in updating NMIS was the time-consuming transfer process..." SOMD could not disagree more. The primary delay, as stated above, is in generating variance explanations. If all we needed to do was post charts with data and no explanation, they could be posted within a week of month end, but they would be of minimal value to the program.

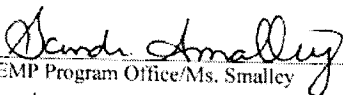
Correction: Report should be modified to reference the actual process that requires the additional time.

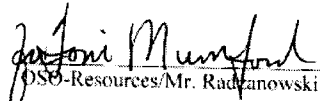
Responses to
Office of Inspector General
Draft Memorandum on the Audit of
Space Shuttle Program Costs (#A-06-004-00)

Concurrences:


OSO-PI/Ms. Gabourel 8-22-07
DATE


OSO-PI/Mr. Hawes 8/22/07
DATE


IEMP Program Office/Ms. Smalley 8/23/07
DATE


OSO-Resources/Mr. Radzanowski 8/23/07
DATE


OSO-Shuttle/Mr. Hill 8/23/07
DATE


OSO/Ms. Cline 8/24/07
DATE