AUDIT REPORT

PROJECT MANAGEMENT OF THE STEVEN F. UDVAR-HAZY CENTER

Number A-02-04

July 31, 2003

SUMMARY

The Steven F. Udvar-Hazy Center is an annex to the National Air and Space Museum under construction at Washington Dulles International Airport. The Office of the Inspector General audited the controls over the project management of the Udvar-Hazy Center project. The purpose of the audit was to determine whether project management practices were effective and whether financial and management controls were adequate to ensure compliance with contract terms, policies and procedures, and laws and regulations. We reviewed the major phases of the project from planning to construction.

Overall, project management practices were effective and financial management controls were adequate to ensure compliance with contract terms. However, we noted that improvements were needed in three areas: (1) monitoring budget-to-actual revenues and expenses, (2) repayment of advance funds, and (3) contract modifications.

One project management best practice is to fix budgetary responsibility. This has been done. Officials of the National Air and Space Museum monitor revenues received for the project and are responsible for monitoring project expenses, primarily expenses for the move in and start up of the Udvar-Hazy Center. The Project Manager in the Office of Facilities Engineering and Operations has responsibility over the expenses for the design and construction phases of the project. Other oversight groups monitor the project's cumulative budgeted revenues and expenses against actual revenues and expenses. However, we believe that the Institution should have information available to compare the timing of the entire project budget against actual revenues and expenses. The responsible officials would then be in a position to provide more comprehensive and consistent reports to management officials regarding budget variances so that corrective action can be taken when needed.

Opportunities exist to improve financial controls over the project management process by:

1. providing guidance for monitoring the timing of budget-to-actual for all revenues and expenses for all large projects,
2. completing the process of developing and implementing Enterprise Resource Planning System user requirements to monitor large projects,
3. strengthening the controls over the repayment of advance funds, and
4. improving the procedures over contract modifications.

Management partially concurred with recommendations one and three and concurred with recommendations two and four. Management provided implementation plans for each recommendation. We believe that management's implementation plans for recommendations one and two are acceptable. Although management partially concurred with recommendation number three, we believe that the Institution could more effectively monitor the repayment of advance funds by reporting the amount of outstanding advance funds and reducing that amount only when the funds advanced are

repaid. Even though management concurred with recommendation number four, we believe that their proposed implementation plan does not go far enough to improve contract modification procedures. The implementation plan's proposed procedures should be strengthened to ensure that notices to proceed are not issued before contract modifications.

Office of the Inspector General

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ABBREVIATIONS AND ACRONYMS

BUMPPS	Budget Management, Planning and Policy System
COR	Contracting Officer's Representative
ERP	Enterprise Resource Planning
NASM	National Air and Space Museum
OFEO	Office of Facilities Engineering and Operations
OT	Office of the Treasurer
PFITS	Project Financial Information Tracking System
SFS	Smithsonian Financial System

INTRODUCTION

A. Purpose

The audit was included in our fiscal year 2002 plan because the Udvar-Hazy Center project is one of the largest construction projects at the Institution. The objectives of the audit were to determine whether project management was effective; financial controls were adequate; and management controls were adequate to ensure compliance with contract terms, policies and procedures, and laws and regulations.

B. Scope and Methodology

The audit was conducted from March 7, 2002, to April 18, 2003, in accordance with generally accepted government auditing standards. The scope of the audit covered the significant phases of the project from planning to construction as of our audit date. We determined whether controls were in place to ensure that the project was within budget, on time, and in compliance with the terms of the major design and construction contracts. We reviewed:

- Policies and procedures relating to project management;
- Duties and responsibilities of the project management team, including Project Manager, Design Manager, and Resident Engineer;
- Contracts and modifications for design and construction;
- Key documents used to manage the project, including the project plans, cost estimates, schedules, and budgets;
- Changes to the budget since inception;
- Monitoring of budget-to-actual revenues and costs;
- Funding sources, including use of advances;
- Smithsonian Directive 410 design reviews;
- Monthly and weekly progress reports;
- Minutes of the Capital Planning Board;
- Board of Regents meetings; and
- Charter of the National Air and Space Museum (NASM) Udvar-Hazy Center Oversight and Control Board.

We interviewed officials from the Office of Facilities Engineering and Operations (OFEO); National Air and Space Museum; Office of Planning, Management and Budget; Office of Contracting; Office of the Comptroller; Office of the Chief Information Officer; and Office of the Treasurer (OT). We also interviewed the Director for Financial Affairs of the Office of the Under Secretary for American Museums and National Programs.

C. Background

The Udvar-Hazy Center is an annex to the National Air and Space Museum. The new facility is located at Washington Dulles International Airport in Northern Virginia. The facility is approximately 760,000 square feet in size (equivalent to 2 1/2 football fields long and 10 stories high) and sits on 176.5 acres. It will permit some of the collections currently stored at the Museum's Garber facility and many aircraft, spacecraft, and other artifacts kept outdoors to be safely housed in structures built to museum standards. It also will provide educational facilities for school groups and educators, a large-format theater, restaurants, museum shops, and an observation deck from which visitors can watch aircraft arriving and departing from nearby Washington Dulles International Airport. The project is funded from both federal and private sources.

The approved budget for phase I of the project is $222.4 million. Planning for the new facility began in the early 1980s. As part of the planning process for the Udvar-Hazy Center, the Institution contracted with an architectural firm to develop a master plan. A construction contract was awarded and construction began on April 10, 2001, to construct the Udvar-Hazy Center in phases. The contract price was $125.6 million for the first phase of construction, which included the aviation hanger, education center, large screen theater, food court, museum stores, visitor orientation area, and observation center. As of March 5, 2003, the contract price had increased to $151.2 million. This increase was caused by a number of change orders including the addition of the space hanger and compliance with the Davis-Bacon Act. The new facility is scheduled to open in December 2003.

OFEO has responsibility for managing the planning, design, and construction of new Institution facilities. For the Steven F. Udvar-Hazy Center, OFEO has a field office on the construction site. The field office staff includes a Project Manager, Resident Engineer, Chief of Quality Assurance, Chief of Engineering Support, Design Managers, and Construction Engineers. The Institution also uses the services of a commercial construction management firm. These services include schedule and documentation tracking, cost and schedule analysis, inspections, testing, and other administrative assistance. An architectural firm provides architectural and engineering support.

The NASM Udvar-Hazy Center Oversight and Control Board, which is chaired by the Under Secretary for American Museums and National Programs and is comprised of representatives from NASM, OFEO, Office of Contracting, Office of Government Relations, and Office of the General Counsel, have provided oversight for phase I of the project. Other members include the Chief Executive Officer for Smithsonian Business Ventures, Chief Financial Officer, Treasurer, Deputy Director of NASM, and the Udvar-Hazy Center Project Executive. Their objectives are to ensure the on-time completion and opening of the Udvar-Hazy Center; and to evaluate the schedule, funding, and cost status. Other oversight entities include the NASM Mall Museum Monthly Executive Committee, the Capital Planning Board, and the Board of Regents. The NASM Mall Museum Monthly Executive Committee discusses financial issues, scope changes, and overall progress of the project. The Capital Planning Board provides advice, counsel, and recommendations for consideration by the Secretary relating to planning and implementing the Institution’s capital program. The primary objectives of the Capital Planning Board are to provide strategic direction and set priorities for all capital programs, monitor the progress of major capital projects for consistency with approved budget and schedule baselines and the Institution’s capital plan, and standardize management practices for all capital projects, new or otherwise. The Board of Regents is responsible for setting institutional policy and for overseeing the management of the Institution’s assets.

RESULTS OF AUDIT

A. Monitoring Budget-to-Actual Revenues and Expenses

Although management was controlling the Udvar-Hazy Center project's overall budget on a cumulative basis, more could be done to monitor and control the budgeted versus actual revenues and expenses of the project. NASM, OFEO, OT and various oversight groups monitored and managed revenues and expenses for the project. However, there was no central system or written guidance to provide these managers with a clear, overall picture of the timing of the multiple sources of revenues brought in by NASM and the numerous categories of expenses incurred by both NASM and OFEO. As a result, management efforts to identify, evaluate, and control revenues and expenses for the project have been more difficult than necessary.

Background

Smithsonian Directive 115, ***Management Controls***, revised July 23, 1996, lists standards that shall apply to Institution units. In particular, the directive requires managers to take systematic and proactive actions to develop and implement appropriate, cost effective management controls. One purpose of management controls is to provide managers with reasonable assurance that reliable data are obtained, maintained, reported, and used for sound decision-making. For large construction projects, management needs information to monitor progress against budgets. However, because of the complexities of this project, particular controls are needed over budgeted to actual revenues and expenses. This project has a special need for monitoring revenue from fund-raising, both in terms of pledges obtained from donors and the timing of the cash to be received from these pledges because the majority of funds for this project are to be raised through fund-raising. The expenses for this project also span two very different organizations, NASM and OFEO, so there is a need for close monitoring and control over the expenses incurred by these two units.

According to the Capital Planning Board charter, the Board is responsible for monitoring the progress of major capital projects for consistency with the approved budget and schedule baselines and the Institution's capital plan. The Board is also responsible for standardizing management practices for all capital projects.

The performance plan for the OFEO Project Manager for the Udvar-Hazy Center states that this position is responsible for developing, monitoring, and managing the scope, schedule, and budget for projects in the Five Year Plan and other projects as required, in conjunction with other OFEO offices and the Smithsonian units' staff. This position is responsible for monitoring and updating the total project cost at each design milestone and throughout construction.

The General Accounting Office (GAO) publication***, Creating Value Through World-Class Financial Management,*** GAO/AIMD-00-134, dated April 2000, states that to be meaningful, financial information should be useful, relevant, timely, and reliable. Relevant financial information should be presented in an understandable, simple format with suitable amounts of detail and explanation.

According to various publications on project management and cash flow analysis, the best practices are to:

- Monitor the timing of actual versus budgeted revenues and expenses to establish variances, analyze the reasons for variances, and take the necessary corrective actions;

- Assign responsibility to the project manager for monitoring, measuring, and reporting on project performance and progress; and

- Use performance reports to provide information on project scope and cost performance to alert the project team to issues that may cause problems in the future.

A major purpose of this aspect of our review was to determine if these and other best practices were in place and operating on the Udvar-Hazy Center construction project.

Results of Review

OFEO, NASM, OT, and other groups monitored the projects budgeted against actual revenues and expenses on a cumulative basis. This is an important control for such a large project. An additional control would be to evaluate the timing of planned versus actual revenues and expenses by discreet periods such as by month, quarter, or year, for each of the major components of the project. The major components of the project are the fund-raising, planning, design, construction, construction management, and move-in/start-up.

- The OFEO Project Manager began to compare actual against budgeted expenses for planning, design, construction, and construction management during our audit. However, the comparison excluded some project costs such as fund-raising and move-in/start-up or project revenues and did not address when these expenses were budgeted to be incurred and when they actually occurred.

- NASM officials compared actual against budgeted expenses for planning, design, construction, and construction management and move-in/start-up. However, they did not compare actual against budgeted revenues for fund-raising. They compared actual fund-raising revenue received against amounts pledged which, of course, may not properly reflect the timing for receipt of funds.

- The Treasurer's office produced a report, the Udvar-Hazy Sources and Uses of Funds report, which compared the project's actual revenues and expenses as of the report date against the approved budget. However, this report did not allow the Treasurer's office to monitor the timing of the project's revenues and expenses. The report indicated the amount of the project's remaining expenses, the amount of funds committed, and the projected amounts of expenses needed to complete the project as of March 31, 2003. However, we could not determine from this report whether the Institution was incurring project expenditures in line with the timing predicted by management when the project was planned. This is important because if the Institution incurred expenses more quickly than expected, then management would need to either accelerate the collection of revenues or look to other funding sources to pay the project's expenses. This report showed the remaining amount of revenues, the amounts of confirmed pledges, verbal pledges, and "forecast" revenues. The report did not show whether the Institution was receiving project revenues as promptly as management anticipated when the project was planned. If the Institution receives revenues later than expected, then management needs to know if it must develop alternative sources of revenue or take other actions to mitigate the risk of negative cash flow.

Although there were processes to oversee the project on a cumulative basis, there were no procedures or systems in place to monitor the timing of budgeted versus actual revenues and expenses due to the following:

- Limited Responsibilities. OFEO, NASM, and the Treasurer's office defined their responsibilities narrowly. The OFEO Project Manager's performance plan stated that the Project Manager should develop, monitor and manage the budget as required. However, OFEO management stated that their responsibility was limited to monitoring only the budgeted versus actual expenses for the design and construction of the Udvar-Hazy Center. OFEO interpreted the word "budget" from the Project Manager's performance plan to mean only the project's design and construction expenses. OFEO further narrowed its interpretation of "total project cost" to be only OFEO's costs, not costs incurred by the museum despite the fact that those costs are a component of the total project cost. NASM management also told us that their responsibility was limited to monitoring revenues and the expenses that NASM had approved for the Udvar-Hazy Center. The Treasurer told us his office was responsible for making sure that the funding needed to complete the Udvar-Hazy Center was within the cash flow projections provided to the Secretary and the Board of Regents.

- Procedures for Monitoring Budgets. The Institution does not have procedures to monitor the timing of budget against actual revenues and expenses at the project-level. The charter of the Capital Planning Board indicates the Board is responsible for monitoring the progress of major capital projects for consistency with approved budget, schedule baselines, and the Institution's capital plan. However, we have not seen evidence that the Board has developed written procedures on how it will fulfill these responsibilities. The Board is also responsible for standardizing management practices for all capital projects, but we saw no evidence that this had been done. The Chief Financial Officer does not have a policy on project-level budget monitoring. OFEO management issued a ***Facilities Project Handbook – Procedures and Guidelines,*** dated September 12, 2002, but these procedures do not address project-level monitoring and reporting on budget-to-actual revenues and expenses. These procedures fell short by not addressing which categories of revenues and expenses should be included in the project's budget.

- Information System Weaknesses. At least four systems[1] have not provided management information to monitor the timing of budget-to-actual revenues and expenses for the Udvar-Hazy Center project: SFS, BUMPPS, PFITS, and the ERP system. SFS and the budgeting system, BUMPPS, were not designed to be fully integrated or produce reports that would allow users to compare budgeted against actual revenues and expenses for all types of funds at the project level. PFITS was

[1] The Institution converted financial data from the Smithsonian Financial System (SFS) to the Enterprise Resource Planning (ERP) system during our audit. The other two systems are the Budget Management, Planning and Policy System (BUMPPS) and the Project Financial Information Tracking System (PFITS).

not designed to capture all of this project's costs or revenue data. Although PFITS has the capability to monitor expenditures, it was not designed to produce reports that would allow management to compare actual against budgeted expenditures. On October 1, 2002, the Institution began installing the general ledger, accounts payable, and committing components of the ERP system.

Measuring the timing of actual against budgeted revenues and expenses for the Udvar-Hazy Center is difficult. NASM, OFEO, and OT personnel all expressed their displeasure over the management difficulties created by the lack of useful information to monitor such a significant project. For example, effective communication regarding financial information among these groups was more difficult than necessary. This problem was further magnified by the complexity introduced from the various sources of project funding. Although face-to-face meetings among management helped to alleviate some of the complexities, the lack of a common basis for monitoring the project contributed to frustration among all units involved with the project.

Without centralized or consolidated financial information, management of the Udvar-Hazy Center project will have difficulty monitoring the timing of cash inflows and outflows for the project. As a result, management may find it more difficult than necessary to control its planned revenues and expenses for the Udvar-Hazy Center project. Without this capability, there is an increased risk that management may not have information in time to make critical adjustments to the project when needed.

Conclusion

Although the Institution monitors the cumulative amount of budgeted-to-actual revenues and expenses on the project, more could be done to monitor the timing of budget-to-actual revenue and expenses for these types of projects and share that information with appropriate officials. The Institution's financial systems were not designed to capture data and produce reports for NASM, OFEO, and OT management to monitor discrete periods of budgeted-to-actual revenues and expenses for the Udvar-Hazy Center project. We believe, based on best practices, that the Institution should compare the timing of budget-to-actual revenues and expenses and informing appropriate management officials of the variances and the need for corrective action.

Recommendations

We recommended that the Chief Financial Officer, as Chairman of the Capital Planning Board:

1. Provide guidance for monitoring the timing of budget-to-actual for all revenues and expenses for all multi-million dollar projects.

2. Complete the process of developing and implementing user requirements to monitor large projects using the new ERP system.

Management Comments

1. Partially Concur. The Institution already has the mechanism in place to develop budgets and track total costs for multi-million dollar museum projects. The

"Building for the Future" document established the budget baseline for large construction projects including the Udvar-Hazy Center. The Undersecretary for American Museums and National Programs, relevant museum and Office of Facilities Engineering and Operations (OFEO) officials, and others meet in various forums to review construction and program progress, construction and program financing, and fund-raising requirements. However, until recently there was no systematic comparison of monthly spending or fund-raising to a monthly plan. The Office of Planning, Management, and Budget (OPMB) has recently established a process for all units to submit Monthly Expense Budgets for all funds, including capital project funds. As of October 1, 2003, units will also be required to provide a monthly revenue "cash flow" plan for all Capital funds, federal and trust, on an annual basis, and to show all planned revenues by year, in the out years, for all major Capital projects.

2. Concur. OPMB will establish and lead a work group to develop the requirements and necessary reports with the Office of the Chief Information Officer (OCIO) and OFEO by March 31, 2004.

<u>Office of the Inspector General Response</u>

Although we noted there was a practice to develop budgets and track total costs for multi-million dollar projects cumulatively, the practice could be strengthened by monitoring and taking action to address significant timing differences between budgeted and actual revenues and expenses. For example, we saw no evidence of a report to compare the timing of actual cash flows to the timing of budgeted cash flows. The CFO has clearly acknowledged the need for this information in the above response and indicated that beginning in fiscal year 2004 adequate information will be in place. When revenues are to be received in the future, as in the case of the Udvar-Hazy Center, there is a risk that if sufficient revenues are not received when expected then additional, unbudgeted, trust funds might be needed to make up the shortfall. Measurement of expected against actual cash flows by discrete periods would minimize the risk of unidentified revenue shortfalls. Management would then be in a position to take corrective action to address those problems as they arise and mitigate the impact of the deviations on the project.

We defer to management's division of roles and responsibilities between the Project Manager and the Office of the Treasurer. Our main point was not to introduce different roles and responsibilities, but to ensure that all parties to the project were working from commonly understood financial information.

B. Repayment of Advance Funds

The report used by the Office of the Treasurer to monitor the repayment of internal advances could more clearly reflect the actual amounts of advances repaid by NASM for the Udvar-Hazy Center project. This occurred because the Treasurer's Management of Internal Advances report was intended to measure the extent to which the Udvar-Hazy Center project advances were secured by pledges. If the report identified the actual repayments against the advances, management would have a more accurate picture of the museum's progress in repaying the advanced funds.

Background

The Institution's procedures, Smithsonian Directive (SD) 308, identify two ways to incur costs for a program or business before receipt of funding: advances and investments. An Advance is an internal loan of trust funds secured by almost certain revenues expected in the near future. Typically, such revenues are expected from confirmed grants or signed gift pledges. An Investment in a business or Institutional program typically has a much longer and more uncertain payoff. The expected payoff from a business investment is increased future income, while that from Institutional programs may be future fund-raising opportunities or advancement of important Institutional priorities.

The current practice for repaying advance funds within the Office of the Comptroller is to reduce the spending authority of units when they receive contributions earmarked to repay advanced funds. By this practice, the units cannot use the contributions for purposes other then repayment of advance funds. However, the practice for the Udvar-Hazy Center is different. For the Udvar-Hazy Center, the repayment of advance funds does not occur when the contributions earmarked to repay advanced funds are received. Instead, according to the project's planned sources and uses of cash, those funds are first used to pay the expenses of the project. When sufficient contributions have been received to complete the project, then funds from contributions can be used for repayment of advance funds.

OT personnel monitor the repayment of advances. The OT produces the Management of Internal Advances report quarterly. The report details the amount of internal advances approved, remaining at risk, current pledges, and percent of at risk pledged for each Under Secretary or equivalent.

Results of Review

Currently, the Institution reports the status of repaid advanced funds from the Udvar-Hazy Center on the Management of Internal Advances report, but only as a single line item[2]. In addition, according to the Treasurer, the remaining at risk amount on the Management of Internal Advances report is reduced by the amount of pledges in hand

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[2] Advance funding constitutes approximately $157 million or 71 percent of the project's budget. Since 1997, the Institution approved three groups of advance funds for the Center. The first group comprised approximately $7 million from 1997 to 1999 for design and fund-raising at NASM. The second group was approximately $126 million advanced in 2001 for the construction contract. The third group was $24 million in additional costs associated with the Davis-Bacon Act, the Space Hangar, and extension of the North and South ends of the main hangar advanced in 2002. None of these advances were included in the Institution's budget. The Institution's cost of the project was projected to be $222.4 million based upon the Treasurer's August 30, 2002, memo to the Board of Regent's Finance and Investment Committee. The percentage of advanced funds to the project's budget is approximately 71 percent.

not by the amount of cash received. The Treasurer told us it is assumed that the donations, when received, would be used to repay the funds advanced for the Udvar-Hazy Center. Since the cash to be received from pledges may not be received when expected, there could be delays in the repayment of the advanced funds. Therefore, we believe a new figure -- the amount of outstanding advances -- should be reported, monitored, and reduced only when the cash has been received from the pledges and the funds, which were advanced, have been repaid.

In addition, in accordance with reports we previously issued regarding risk funds and the trust fund budget process, we continue to believe that advance funds should be budgeted and their repayment monitored through the budget review process. We found that to date, the Institution does not have the capability to use the core financial system, ERP, to compare budgeted versus actual repayments of advance funds.

Conclusion

Failure to report clearly the status of advance fund repayment increases the risk that if these funds are not repaid as expected, then management may not be readily alerted. This decreases control over trust funds. The Institution is implementing a new financial system that is to include a budget module, which could possibly be used to control the repayment of advanced funds.

Recommendation

We recommended that the Treasurer more clearly report the repayment of advanced funds by reporting the amount of outstanding advances to the CFO. This amount should be used to monitor the repayment of advanced funds and should be reduced only when the funds advanced are repaid.

Management Comments

Partially Concur. We believe that the management reports being used are adequate because we have tracked the funds at risk for this project and reported regularly on the pledges outstanding. We also now have a system for tracking the cash from the fulfillment of pledges against the initial terms of the pledge.

Office of the Inspector General Response

Although management responded that they compare budgeted and actual pledge payments, we believe that more can be done to reduce the risk of unpaid advances. The Institution should monitor the repayment of advance funds by reporting the amount of outstanding advance funds and reducing that amount only when the funds advanced funds are repaid. As we have reported in the past, there is a risk that if advance funds are not repaid the resulting expenses may have to be absorbed by unrestricted trust funds. This would result in expenses being incurred that were not included in a budget approved by the Board of Regents. Therefore, this recommendation is unresolved and we will follow up to obtain an acceptable implementation plan.

C. **Contract Modifications**

The Contracting Officer's Representative (COR) made unauthorized contractual commitments to the contractor to proceed with 20 change orders, totaling approximately $2 million, 3 to 18 months before the Contracting Officer issued a written contract modification. The COR issued a Notice to Proceed to the contractor to prevent project delays and increased costs. Issuing a Notice to Proceed before the Contracting Officer has modified the contract decreases control over the project by allowing the COR to exceed the authority delegated from the Contracting Officer. Because funds are not obligated in the Institution's accounting system until after the contract has been modified, where there are delays in obtaining written contract modifications, there is an increased risk that obligations may not be entered into the appropriate accounting period. The resulting inaccurate accounting information increases the risk of ill-informed management decisions. In addition, failure to define a price on the revised scope of work before the modification is complete places the Institution at risk of excessive costs and billings.

Background

We sought to determine if changes to work on services were effected by the Contracting Officer before the contractor proceeded with the changes. We reviewed 124 change orders from 25 construction contract modifications. We excluded value engineering savings change orders from our review because those change orders do not increase the cost of the construction contact.

The Institution's delegation letter, the construction contract, and the best practices set forth by the Federal Acquisition Regulation all require that only contracting officers be authorized to execute contract modifications. The delegation letter from the Contracting Officer designating the COR states that the COR will assure that changes in work or services, and resulting effects on delivery schedule, are formally effected by written modifications issued by the Contracting Officer before the contractor proceeds with the changes. The construction contract indicates that the Contracting Officer is the only person authorized to change or modify the contract or take any action, which obligates the Institution, and then such action must be set forth in a formal contract modification. The Federal Acquisition Regulation, which represent the best practices in Federal contracting, require that only contracting officers are authorized to execute contract modifications. It also states that other personnel shall not act in such a manner as to cause the contractor to believe that they have the authority to bind the Government, or direct or encourage the contractor to perform work that should be the subject of a contract modification. The regulation also requires that the contracting officer shall not execute a contract modification that causes or will cause an increase in funds without having obtained a certification of fund availability and the certification shall be based on the negotiated price, except that modifications executed before agreement of price may be based on the best available estimate of cost.

Results of Review

The COR requested the contractor to proceed with $2 million out of $4.8 million (41 percent) in change orders before the Contracting Officer issued a contract modification. The total cost of the original construction contract was approximately $126 million. We reviewed 124 change orders of which 20 represented non-approved change orders totaling approximately $2 million. Of the 20 change orders issued prior to contract modification, only one indicated a specific cost.

According to the COR, notifications to proceed were issued prior to modifications to minimize the impact of the changes to the project's schedule and cost. We recognize and accept the view that Project Managers, especially on construction contracts, may need to ensure the continuous flow of work and avoid work stoppages. We also noted that the Institution has inadequate contracting procedures in place to address change orders, which require a quick turnaround.

Once OFEO "bundled" the change orders and forwarded them to the Contracting Officer, a modification was issued and the obligations for those change orders were entered into the accounting system. Because of the overall delays in this process, funds could not be promptly obligated in the accounting system for the contract modifications associated with those change orders. Therefore, there was an increased risk that obligations may not have been reflected in the appropriate accounting period. Inaccurate accounting information decreases the quality of information available for management to make informed decisions. In addition, when the Institution does not promptly define the terms of modifications to fixed-price contracts, the Institution increases the risks of increased costs and performance deficiencies. When the price of a modification to a fixed-price contract has not been defined, the modification is treated as a cost-reimbursement contract and unlike fixed price contracts; the contractors have little incentive to control costs.

Conclusion

The Director of the Office of Contracting should establish written procedures for all CORs to ensure that the Contracting Officer receives certification of fund availability and approves the contract modification before the contractor begins work on change orders. This process should ensure that funds are obligated immediately within the accounting system at the time that the contract modification is issued. The Federal Acquisition Regulation provides some guidance on how this can be accomplished, while providing proper documentation.

On May 7, 2003, the Director of the Office of Contracting delegated Resident Engineers the authority to issue Notices to Proceed prior to issuance of a contract modification by the Contracting Officers.[3] The delegation streamlines the process because the Resident Engineers would forward Notices to Proceed to the Office of Contracting within 30 days. However, we believe that OFEO should not wait 30 days, but should promptly submit Notices to Proceed. Contracting officials would then be able to process the modifications, including the obligations of funds, promptly.

Recommendation:

We recommended that the Director of the Office of Contracting develop and implement procedures to ensure that funds are available, contract modifications are authorized in writing by the Contracting Officer before the Contractor begins work, and funds are obligated immediately within the accounting system when the contract modification is issued.

[3] The delegations were issued to the Resident Engineers for the Steven F. Udvar-Hazy Center and National Museum of the American Indian-Mall museum.

Management Response

Concur. The Director, Office of Contracting, has developed and implemented procedures to ensure that funds are available, contract notices-to-proceed are authorized in writing by a delegated Resident Engineer before the contractor begins work or contract modifications are authorized in writing by the Contracting Officer before the contractor begins work, and funds are obligated within the accounting system when the contract modification is issued. A delegation of authority was issued to the Resident Engineer on May 7, 2003, along with a form agreement for Notice to Proceed letters. The procedure for this delegated process has been issued.

Office of the Inspector General Response

We continue to believe that OFEO should not issue notices for contractors to proceed with work that should be the subject of a contract modification. Only Contracting Officers should modify contracts, however under unusual circumstances Contracting Officers may issue notices for contractors to proceed according to the best practices described in Federal Acquisition Regulations section 43.201(c). For these reasons, this recommendation is unresolved and we will follow up to obtain an acceptable implementation plan.

APPENDIX A

WRITTEN COMMENTS BY ALICE C. MARONI, CHIEF FINANCIAL OFFICER

Smithsonian Institution — Memo

Chief Financial Officer

Date June 24, 2003

To Thomas D. Blair, Inspector General

cc Sheila P. Burke, Under Secretary for American Museums and National Programs
J. R. Dailey, Director, National Air and Space Museum;
William W. Brubaker, Director, Office of Facilities Engineering and Operations

From Alice C. Maroni, Chief Financial Officer

Subject CFO Response to the Draft Report, Office of the Inspector General Audit A-02-04, Project Management of the Steven F. Udvar-Hazy Center

Thank you for providing me a copy of the draft report Project Management of the Steven F. Udvar-Hazy Center audit A-02-04. My staff has reviewed the issues pertinent to the Chief Financial Officer (CFO) organization. On behalf of the CFO organization, I am providing the comments below which address each of the recommendations or actions suggested. Thank you for the opportunity to comment prior to issuance of your final report.

Issue 1 Monitoring Budget-to-Actual Revenues and Expenses: The Smithsonian Institution's financial procedures and systems do not capture data to produce reports that allow project managers to adequately monitor and compare the timing of budget-to-actual revenues and expenses for the Udvar-Hazy Center project. Without this capability, it is more difficult than necessary for management officials to control planned revenues and expenses for the project. It is recommended that the Chief Financial Officer, as Chairman of the Capital Planning Board:

- Establish policies and procedures for assigning responsibility to monitor the timing of budget-to-actual for all revenues and expenses for all multi-million dollar projects.

  Comment: Partially Concur. The Institution already has the mechanism in place to develop budgets and to track total costs for multi-million dollar museum projects. The "Building for the Future" document, first presented to the Board of Regents in January 2001 by Sheila P. Burke, Under Secretary for American Museums and National Programs, established the budget baseline of the three big construction projects: the Steven F. Udvar-Hazy Center, the Patent Office Building, and the National Museum of the American Indian. Under Secretary Burke conducts oversight meetings at least quarterly with museum representatives and representatives of the Office of Facilities Engineering and Operations (OFEO) to discuss construction progress and program progress and to monitor revenues, budgets and expenses for each of the three museum projects. These reviews include a detailed analysis of construction progress, construction

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financing, and fundraising requirements. All the affected units (including the Office of Contracting (OCon), General Counsel, Planning, Management and Budget (OPMB), the Office of the Treasurer (OT), Government Relations, and Smithsonian Business Ventures) are part of this oversight process and participate in the review of budgets-to-actuals. In addition, the Secretary of the Smithsonian conducts three operational reviews a year that also evaluate construction and program progress, construction and program financing, and fundraising requirements. Beyond these formal reviews, there are additional reviews whenever a major contract modification for a new phase of construction is imminent, and these reviews also evaluate construction and program financing and fundraising requirements. In all instances, the relevant financial information comes from museum staff, OFEO, and the Office of the Treasurer who also has the responsibility for formatting the data and analyzing it.

It is clear that there are routine, recurring reviews that monitor performance against budget and fundraising for the major construction programs. However, until recently there was no systematic comparison of monthly spending or fundraising to a monthly plan. OPMB has recently established a process for all units to submit Monthly Expense Budgets for all funds, including capital project funds. Beginning in FY 2004, units will also be required to provide a monthly revenue "cash flow" plan for all Capital funds, federal and trust, on an annual basis, and to show all planned revenues planned by year, in the out-years, for all major Capital projects. When completely implemented, this monitoring process will satisfy this recommendation.

Considerable confusion has been created by the use of the term "project manager" in the report. There is general agreement that OFEO project executives are responsible for monitoring all project costs for design and construction and tracking budgets-to-actuals. The Office of the Treasurer has the responsibility for monitoring overall project costs and revenues, including OFEO-provided construction and design costs, unit/museum-provided program and opening costs and revenues, and other costs relevant to the project. This division of roles and responsibilities is an important one and ought to be clarified in the report.

Action completion date: October 1, 2003.

- Develop and implement user requirements to monitor large projects using the new ERP system in accordance with recommendation 1 above.

  Comment: Concur. OPMB will establish and lead a work group to develop the requirements and necessary reports with OCIO and OFEO.

Action completion date: March 31, 2004.

Issue 2 Repayment of Advance and Investment Funds: The report used by the Office of the Treasurer to monitor repayment of internal advances does not accurately reflect the actual amounts of advances repaid by NASM for the Udvar-Hazy Center project. Since both advances and investments are being used for this project, the report

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could be made clearer if each type of advance is distinguished on the report for better monitoring and decreasing risks of advanced funds not being repaid as expected.

- The Treasurer should correct the information in the Management of Internal Advances report for the Udvar-Hazy Center to accurately reflect the actual status of the repayment of advanced funds.

  Comment: Partially Concur. We believe that the management reports being used are adequate. The initial estimates for the expenses and revenues for the project were projected over time. These projections were then used to estimate the total advances and investments (including interest) required for the project. We obtained approval from the Regents for the project budget and the total cash advances and investments (i.e., total "funds at risk") of $100 million. This approval process was followed each time there was a major change in the scope of the project. We have tracked the funds at risk for this project and reported on them regularly to senior management. We have also tracked and reported regularly on the pledges outstanding. The pledges represent the advances, and the remaining funds at risk are the investment. Hence we have tracked and reported regularly on advances and investments.

  We are tracking expenses and revenues against budgets which necessarily change over time as funds are raised. What management needs to know is whether there is a mismatch in the timing of planned revenues and expenses. The purpose of tracking against a moving baseline is to ensure that we do not have a mismatch in the timing of revenues and expenses and to limit the funds at risk for the project. Since we are tracking the funds at risk directly, we believe that no meaningful purpose is served by performing the detailed tracking recommended. We also now have a system for tracking the cash from fulfillment of pledges against the initial terms of the pledges.

  With respect to the concern that we are not differentiating between income from fundraising and business income, it is important to note that, at this stage, there is no business income; all the income is from fundraising. At such time as there is business income, the Office of the Treasurer will set up a system to track separately income derived from fund-raising and from businesses.

  With respect to the concern that advances should be included in the Institution's budget, the Institution's policy making advances only against confirmed pledges, obviates this need.

Action completion date: System to track business income will be in place March 31, 2004, as planned.

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Issue 3 Contract Modifications: Commitments to the contractor to proceed with change orders were made by the Contracting Officer's Representative (COR) (Resident Engineers) prior to a written Contract Modification being approved and signed by a Contracting Officer which put the Institution at risk of losing financial control over the project. The Director, Office of Contracting (OCon), has now delegated authority to the COR to issue Notices to Proceed (NTP) letters to contractors. Copies of the NTP letters should be forwarded to OCon by OFEO promptly instead of within 30 days after issuance, as is currently required, so that contract modifications may be issued and obligations of funds occur in the accounting system during the appropriate accounting period.

- It is recommended that the Director, OCon, develop and implement procedures to ensure that funds are available, contract modifications are authorized in writing by the Contracting Officer before the contractor begins work, and funds are obligated immediately within the accounting system when the contract modification is issued.

  Comment: Concur. The Director, OCon, has developed and implemented procedures to ensure that funds are available, contract notices-to-proceed are authorized in writing by a delegated Resident Engineer before the contractor begins work or contract modifications are authorized in writing by the Contracting Officer before the contractor begins work, and funds are obligated within the accounting system when the contract modification is issued.

  A delegation of authority was issued to the Resident Engineer in the project management office of the Steven F. Udvar-Hazy Center on May 7, 2003, along with a form agreement for Notice to Proceed letters.

  The draft procedure for this delegated process is under review and will be finalized before June 30, 2003.

Action completion date: June 30, 2003.

Please direct any questions you may have regarding the above information to Curtis B. Sanchez, OCon, at 202.275.1174 or by e-mail to SanchezC@si.edu.