## AUDIT REPORT

### CALTECH GOVERNMENT BILLINGS TRANSFERRED TO

### THE JET PROPULSION LABORATORY

December 20, 1996



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National Aeronautics and Space Administration

Headquarters Washington, DC 20546-0001



DEC 20 1996

Reply to Attn of:

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To:

SPJ/Manager, NASA Management Office, JPL

FROM:

W/Assistant Inspector General for Auditing

SUBJECT:

Final Report

Caltech Government Billings Transferred

to the Jet Propulsion Laboratory Assignment No. A-JP-95-010

Report No. IG-97-012

We have completed an audit of the Government billings transferred from the California Institute of Technology (Caltech) to the Jet Propulsion Laboratory (JPL) contract and reimbursed by NASA.

We discussed a draft of this report with your office and with JPL management on October 3, 1996. A written response was received from your office on December 6, 1996. The comments were incorporated into the report to outline actions planned in response to the recommendations. The complete NASA Management Office (NMO) response is in Appendix 1.

In accordance with NMI 9910.1A, please include our office in the concurrence cycle for closing recommendation 1. The NASA Office of Inspector General staff members associated with this audit express their appreciation to the NMO and JPL for their courtesy, assistance, and cooperation.

If you have any questions, please call Robert Wesolowski, Director, Audit Division-A, or me at (202) 358-1232.

, Debra A. Guentzel

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The NASA Office of Inspector General (OIG) has completed an audit of Government Billings transferred from the California Institute of Technology (Caltech) campus to the Jet Propulsion Laboratory (JPL) in Fiscal Years (FYs) 1993, 1994, and 1995. We conducted this audit at the request of the NASA Management Office at JPL to address the allowability and reasonableness of these costs.

In the performance of contract NAS7-1260 and its predecessor contract NAS7-918, JPL acquires materials, supplies, and services from Caltech (hereafter referred to as "the campus"). Charges for these acquisitions are transferred to JPL through 22 interdivisional accounts which averaged about \$49 million a year for the fiscal years reviewed. One of the 22 accounts, Government Billings, includes charges related to research and development work tasks performed at the campus for JPL. The charges to this account averaged about \$8 million a year for the three fiscal years reviewed.

JPL is a Federally Funded Research and Development Center (FFRDC) operated by the California Institute of Technology under NASA contract NAS7-1260. The Laboratory, staffed primarily with Caltech employees, is a Government-owned installation located in Pasadena, California. JPL also operates other NASA facilities in Southern California, at the Goldstone Tracking Station and Table Mountain. The NASA Management Office at JPL provides NASA management oversight of JPL operations.

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### OBJECTIVES, SCOPE, AND METHODOLOGY

### **OBJECTIVES**

The overall objectives of this audit were to evaluate the (1) adequacy of internal controls over the Government Billings and Work Order Charges transferred from Caltech to JPL, and (2) allowability and reasonableness of these costs.

Because Work Order Charges were mainly low value charges for non-research and development services, we limited our review to Government Billings. However, because the procedures applicable to this account (Work Order Charges) are similar to those applicable to the Government Billings account, any weaknesses found in the Billings account may also indicate weaknesses in the Work Order Charges account. Further, we limited our review to JPL's internal controls over the allowability and reasonableness of Government Billings.

### Scope and Methodology

We reviewed JPL's practices and procedures for obtaining on-campus services applicable to the Government Billings account during FYs 1993, 1994 and 1995. This included a review of the authorization, monitoring, and closeout processes to determine what procedures existed and whether they were adequate. Specifically, we reviewed the adequacy of JPL's Standard Practice Instructions (SPI) 4-01-3 and 4-01-4 and Contract Management Office Instruction (CMOI) 600, the Laboratory's procedures for obtaining services from the campus. CMOIs supplement the SPIs and provide further detail to their guidance. Additionally, we:

- reviewed Federal Acquisition Regulation (FAR) Part 15.8 "Price Negotiation" for criteria in determining price reasonableness;
- statistically sampled approximately 47 work tasks within the Government Billings account for FY's 1993, 1994 and 1995, some of which are common to multiple years. These work tasks included 62 campus proposals to JPL for services to be performed at the campus. Because some of these proposals were funded incrementally (e.g., quarterly or annually), JPL issued 130 authorizations (funding approvals) to the campus to perform the services. This sample was (a) based on various factors, including dollar value; and, (b) used to

determine whether JPL's procedures for obtaining on-campus services were adequate and correctly applied in practice; and

• judgmentally sampled 10 work tasks (which represent 21 proposals) within the Government Billings account for all fiscal years. The sampled tasks were used as a basis to interview JPL technical managers to determine the extent of campus proposals reviewed by JPL.

## INTERNAL CONTROLS REVIEWED

The following applicable internal controls were tested during this audit:

- a. controls over the acquisition of on-campus services under the Government Billings account;
- b. controls over the monitoring of on-campus services under the Government Billings account; and
- c. controls over the closeout of on-campus services under the Government Billings account.

The controls over the closeout of on-campus services were considered adequate. However, adherence to the established controls over the acquisition and monitoring of on-campus services needs improvement. The details of these issues are discussed in the "Observations and Recommendations" section of the report.

#### AUDIT FIELD WORK

Audit field work was conducted from November 1995 through April 1996 at JPL. The audit was performed in accordance with generally accepted government auditing standards.

### **OVERALL EVALUATION**

Overall, the internal control procedures over the Government Billings charges transferred from campus to JPL were generally adequate. The procedures, however, were generally not being followed. Specifically, (1) on-campus services started before the services were authorized by JPL, (2) campus proposals were not being adequately reviewed by JPL, and (3) campus costs exceeded authorized funding levels without JPL's approval. Without adherence to these procedures, NASA lacks assurance that the transferred costs for campus services performed for JPL are (1) within the scope of the NASA contract, (2) within authorized budget limits, and/or (3) allowable and reasonable. However, JPL's practices and procedures for the closeout of on-campus services were adequate. Our observations are described in detail in the following paragraphs.

# CAMPUS SERVICES STARTED BEFORE BEING AUTHORIZED

Contrary to established procedures, JPL permitted campus services for NASA work to commence before they were authorized. This included services starting before (a) the campus' submission and JPL's review of a proposal, (b) JPL's approval of the Procurement Requisition (funding commitment), and (c) JPL's issuance of the authorization to start services. For example, we reviewed 130 authorizations representing \$10.3 million. Of these authorizations, 107 representing \$9.3 million showed that services at the campus had begun as early as 2.2 years before authorization. The practice of permitting the performance of services before proper authorization could create a liability which NASA may be obligated to reimburse under the contract

JPL's SPI 4-01-3 "Obtaining On-Campus R&D [Research and Development] Services From Campus" specifies that JPL personnel can discuss the scope of effort with campus personnel before the proposal submission to determine its feasibility; however, no commitment for services shall be made at that time. The SPI also provides that the authorization to perform services will only be issued after JPL's review and approval of the proposal.

During our interviews with JPL technical managers of 10 judgmentally sampled work tasks, we were told that the campus was initiating services for JPL before authorization based on discussions between the JPL technical managers and campus program managers. However, CMO NASA Contract Administration Supervisor stated

that he did not believe the technical managers were making commitments during the pre-proposal discussions. Because the managers knowingly allowed services to routinely commence before being properly authorized (e.g., proposal submission, review, and approval), it appears that JPL is condoning and/or implicitly encouraging these services. This practice is contrary to established procedures.

## CAMPUS PROPOSALS LACKED REVIEW

The campus proposals to perform services for JPL were not being adequately reviewed by JPL. Specifically, none of the 62 campus proposals reviewed contained evidence of reviews for price reasonableness/allowability. In addition, 80 percent of the work tasks judgmentally reviewed lacked evidence of reviews for technical adequacy.

In accordance with established procedures, JPL is required to review proposals for technical adequacy and price reasonableness/allowability under the contract requirements. Specifically, the procedures require that proposal reviews for technical adequacy be performed by the responsible JPL technical manager, and that proposal reviews for price reasonableness/allowability be performed by the Contracts Management Office (CMO). Technical adequacy relates to the reasonableness of the proposed resources (e.g., labor mix, labor hours, material) required. Price reasonableness/allowability relates to the fairness of the proposed prices. In addition, for Government contracting purposes, FAR Part 15.8 specifies the requirement of price analysis to ensure that supplies and services are obtained at fair and reasonable prices.

The CMO NASA Contract Administration Supervisor acknowledged that the CMO did not perform the required reviews for price reasonableness/allowability. He said that CMO relies upon the responsible JPL technical manager to perform both the technical adequacy and price reasonableness/allowability reviews. We sampled 10 high dollar work tasks (representing expenditures of \$10.7 million and 21 proposals) to determine the extent of reviews performed on the related campus proposals by JPL technical managers. Of these 10 work tasks, 8 (representing expenditures of \$9.3 million and 17 proposals) lacked evidence that JPL technical managers performed reviews for technical adequacy. All work tasks lacked evidence that JPL technical managers performed reviews for price reasonableness/allowability. As a result, JPL lacks assurance that NASA is paying a reasonable price for services from campus.

CAMPUS COSTS
EXCEEDED
AUTHORIZED
FUNDING

The campus incurred costs which exceeded authorized funding levels (overruns) on services being performed for JPL. For example, during the last month of FYs 1993, 1994 and 1995, 23 of 94 Government Billings work tasks (24 percent) had exceeded the authorized amount by as much as \$256,708. The SPI specifies that JPL shall monitor incurred costs on a monthly basis and examine for overruns. Further, if either an overrun has occurred or 85 percent of authorized costs have been expended, direction is to be issued to stop services until either additional funds are authorized or the authorization itself is canceled.

JPL did not follow its established procedures to prevent the incurrence of costs after a potential or actual overrun was identified. The CMO NASA Contract Administration Supervisor stated that although monthly monitoring was performed, the required directions to stop performance were not being issued. By not following its established procedures to prevent overruns, JPL does not provide NASA with adequate assurance that the work being performed at campus for JPL is being adequately managed through sound business practices.

### RECOMMENDATION 1

The NASA Management Office should direct JPL to follow its established procedures to: (1) prevent campus from performing services before authorization, (2) provide assurance that adequate reviews are being performed on Campus proposals, and (3) prevent campus costs from exceeding authorized funding levels. Since Government Billings and Work Order Charges processes are essentially the same, consideration should be given to ensure that procedures applicable to Work Order Charges are also being followed.

### MANAGEMENT'S RESPONSE

"Concur with intent of (1) and (3). JPL's response indicates that Caltech implemented a procedure beginning fiscal year 1996 that prevents Caltech from billing JPL for work performed before authorization or in excess of authorized funding. As long as the August 1995 procedure accomplishes its purpose of preventing billing to the contract before authorization and in excess of authorized funding, NASA should not be at risk should Caltech choose to perform work either before it is authorized or exceeding authorized funding levels. JPL, however, will be requested to implement procedures to ensure that Caltech does not bill for any

work before it is properly authorized or for amounts in excess of authorized amounts."

"Concur with intent of (2). JPL indicates that it is in the process of reengineering the entire Caltech work order process. Anticipated completion of the reengineering effort is expected to be February 28, 1997. The NMO will request that the reengineered process include documentation and/or a statement that the Caltech proposal has been reviewed for technical adequacy and price reasonableness. This, in addition to the checklist referenced in the JPL response, should adequately address the OIG's concerns. In the mean time, JPL will be requested to document that campus proposals are being reviewed for technical adequacy and price reasonableness. Expected completion of action on the recommendation is March 30, 1997."

# EVALUATION OF MANAGEMENT'S RESPONSE

The actions planned by the NMO are responsive to the recommendation. The NMO Deputy Manager met with us on December 13, 1996, to further clarify the NMO response. Except for one planned change in the NMO response, he stated that JPL will be instructed in writing to carry out the actions stated in its response to our recommendation. The exception relates to JPL being requested to implement procedures to ensure that Caltech does not bill for any work before it is properly authorized. Instead, he will ask JPL to implement procedures that ensure NASA does not pay for any unauthorized work done by Caltech.

#### RECOMMENDATION 2

The NASA Management Office should establish a periodic review process to ensure that JPL is following its procedures in performing adequate reviews on campus proposals to ensure that transferred charges are reasonable and allowable under the contract.

### MANAGEMENT'S RESPONSE

"Concur. Because of limited staffing at the NMO, the NMO will periodically request audits by either the OIG or DCAA to ensure that JPL is in compliance with its written procedures regarding campus proposals to JPL. This recommendation is considered closed upon issuance of the final OIG report."

# EVALUATION OF MANAGEMENT'S RESPONSE

The action planned by the NMO is responsive to the recommendation.

### MAJOR CONTRIBUTORS TO THIS AUDIT

Jet Propulsion Laboratory

Mr. Roger Flann, Audit Field Office Manager

Mr. Walt Curtis, Auditor-in-Charge

Ms. Ellen Norris, Auditor

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National Aeronautics and Space Administration

Jet Propulsion Laboratory NASA Management Office 4800 Oak Grove Drive Pasadena, CA 91109-8099



Reply to Attn of

**SPJ** 

December 6, 1996

TO:

W/Assistant Inspector General for Auditing

FROM:

SPJ/Deputy Manager

SUBJECT:

Draft Audit Report, Caltech Government Billing Transferred to the Jet

Propulsion Laboratory, Assignment No. A-JP-95-010

Subject draft report contains two recommendations. The NMO response is provided below. JPL's comments have been incorporated where appropriate. The entire JPL is response is attached for your information.

### Recommendation 1

The NASA Management Office should direct JPL to follow its established procedure to (1) prevent campus from performing service before authorization (2) provide assurance that adequate reviews are being performed on Campus proposals, and (3) prevent campus cost from exceeding authorized funding levels.

### NMO Response

Concur with intent of (1) and (3). JPL's response indicates that Caltech implemented a procedure beginning fiscal year 1996 that prevents Caltech from billing JPL for work performed before authorization or in excess of authorized funding. As long as the August 1995 procedure accomplishes its purpose of preventing billing to the contract before authorization and in excess of authorized funding, NASA should not be at risk should Caltech choose to perform work either before it is authorized or exceeding authorized funding levels. JPL, however, will be requested to implement procedures to ensure that Caltech does not bill for any work before it is properly authorized or for amounts in excess of authorized amounts.

Concur with intent of (2). JPL indicates that it is in the process of reengineering the entire Caltech work order process. Anticipated completion of the reengineering effort is expected to be February 28, 1997. The NMO will request that the reengineered process include documentation and/or a statement that the Caltech proposal has been reviewed for technical adequacy and price reasonableness. This, in addition to the checklist referenced in the JPL

response, should adequately address the OIG's concerns. In the mean time, JPL will be requested to document that campus proposals are being reviewed for technical adequacy and price reasonableness.

Expected completion of action on the recommendation is March 30, 1997.

### Recommendation 2

The NASA Management Office should establish a periodic review process to ensure that JPL is following its procedures in performing adequate reviews on campus proposals to ensure that transferred charges are reasonable and allowable under the contract.

### **NMO** Response

Concur. Because of limited staffing at the NMO, the NMO will periodically request audits by either the OIG or DCAA to ensure that JPL is in compliance with its written procedures regarding campus proposals to JPL.

This recommendation is considered closed upon issuance of the final OIG report.

Thomas E. Sauret

Enclosure

cc:

OIG-JPL

### CALIFORNIA INSTITUTE OF TECHNOLOGY

DIRECTOR OF INTERNAL AUDIT

**December 2, 1996** 

Mr. Daniel W. Bromley Audit Coordinator NASA Management Office - JPL Jet Propulsion Laboratory 4800 Oak Grove Drive, 180-801 Pasadena, CA 91109

Subject:

JPL Response to OIG Draft Audit Report, A-JP-95-010, Caltech Government Billings

Transferred to the Jet Propulsion Laboratory dated October 21, 1996

Dear Mr. Bromley:

The attached memorandum from Steve Proia is a response to the subject draft report.

Sincerely.

Peter M. Hughes /

Director

Caltech Internal Audit

PMH:bjj

Enclosure

c: W. H. Harrison

H. M. Yohalem

B. M. Meltzer

December 2, 1996

TO:

P. M. Hughes

FROM:

SUBJECT:

JPL Response to OIG Draft Audit Report, A-JP-95-010, Caltech Government Billings

Transferred to the Jet Propulsion Laboratory, dated October 21, 1996

REFERENCE: NASA OIG Draft Audit Report dated October 21, 1996, Subject: Caltech Government

Billings Transferred to the Jet Propulsion Laboratory, Assignment No. A-JP-95-010

The following are JPL's comments to the NASA OIG's findings and recommendations contained in the subject draft audit report.

### FINDING:

Contrary to established procedures, JPL permitted campus services for NASA work to commence before they were authorized. This included services starting before (a) the campus' submission and JPL's review of a proposal, (b) JPL's approval of the Procurement Requisition (funding commitment), and (c) JPL's issuance of the authorization to start services...the practice of permitting the performance of services before proper authorization could create a liability which NASA may be obligated to reimburse under the contract.

#### 1. **RECOMMENDATION:**

The NASA Management Office should direct JPL to follow its established procedures to: (1) prevent campus from performing services before authorization, (2) provide assurance that adequate reviews are being performed on Campus proposals, and (3) prevent campus costs from exceeding authorized funding levels. Since Government Billings and Work Order Charges processes are essentially the same, consideration should be given to ensure that procedures applicable to Work Order Charges are also being followed.

#### JPL COMMENTS:

With regard to the recommendation that JPL follow established procedures to prevent a. campus from performing services before authorization:

As explained to the NASA OIG during a October 3, 1996 meeting, the referenced draft audit report reviewed work order costs transferred from Caltech to JPL during Fiscal Years 1993, 1994 and 1995. Beginning with Fiscal Year 1996, Caltech instituted a procedure whereby no costs are transferred to JPL unless a valid work order has been created and sufficient funds are available under the work order to cover the costs. This prevents unauthorized and unfunded costs from being charged to NASA under Contract NAS7-1260. This Caltech procedure eliminates any NASA risk associated with costs for unauthorized or unfunded services performed by Caltech.

b. With regard to the recommendation that JPL follow established procedures to provide assurance that adequate reviews are being performed on Campus proposals:

JPL strongly disagrees with the finding that led to the recommendation.

- orders to Caltech. This group reviews every Caltech proposal prior to release to the cognizant JPL technical manager for consideration. The review performed by Section 2141 focuses primarily on equipment and ADP proposed for purchase. However, current JPL procedures do not include specifics on how reviews are to be documented. To alleviate the NASA OIG's concern, Section 2141 will begin including a checklist to document the review performed. The checklist will be completed by the group's contract administrators and the completed checklist will be kept in the work order file.
- Price (or value) analysis and technical evaluation of Caltech work order proposals are, and will continue to be, the responsibility of the cognizant JPL technical manager, not Section 2141, as espoused by the NASA OIG. The JPL technical manager is responsible for performing his project within available time and funding resources. JPL considers the procurement requisition, signed by the JPL technical manager, to be evidence of the JPL technical manager's acceptance of the reasonableness of the Caltech proposal (the procurement requisition authorizes a work order to Caltech to be established and states the estimated cost and funds to be allotted for the work order). We feel that additional documentation of the technical manager's acceptance will add no further value and would in fact further bureaucratize the process.

- (3) The draft audit report also stated that Caltech proposals were not being adequately reviewed by JPL because the work order files did not contain evidence (i.e. paper) documenting reviews of price reasonableness/allowability or technical adequacy. Concerning price reasonableness/allowability, the draft audit report implies that Caltech would gain benefit if incorrect rates in labor or burden, or other cost elements, are inflated in work order proposals. However, under Contract NAS7-1260, only actual costs at approved rates are billed under work orders and charged to the Government. There is no fee or profit to Caltech derived from the cost estimate. In our opinion, there is minimal risk to the Government.
- c. With regard to the recommendation that JPL follow established procedures to prevent campus costs from exceeding authorized funding levels:

Again, the NASA OIG was informed during our October 3, 1996 meeting that beginning with Fiscal Year 1996, Caltech instituted a procedure whereby no costs are transferred to JPL for which adequate funding does not exist.

### 2. RECOMMENDATION:

The NASA Management Office should establish a periodic review process to ensure that JPL is following its procedures in performing adequate reviews on campus proposals to ensure that transferred charges are reasonable and allowable under the contract.

### JPL COMMENTS:

As this is a recommendation for the NASA Management Office, it will not be addressed by JPL.

### **ADDITIONAL COMMENTS:**

We have been informed that the NASA OIG did not contact Caltech representatives during the audit fieldwork and thus were unaware of the internal controls currently in place to prevent the billings to NAS7-1260 for unauthorized or unfunded work. To remedy this apparent oversight, the NASA OIG was made aware of both Caltech's current internal controls and JPL's planned documentation enhancements during a meeting on October 3, 1996 to review the discussion draft. However, the referenced draft report does not reflect the items discussed during this meeting.

In order to alleviate the excess bureaucracy required by JPL's current procedures for obtaining R&D services from Caltech (JPL's parent organization), and as a result of JPL's efforts to adopt best business practices, JPL is in the midst of reengineering the entire Caltech work order process. Currently, JPL is drafting procedures which will greatly streamline its ability to obtain R&D services from Caltech. In effect, all R&D services provided by Caltech will soon be governed by an interdivisional authorization (IDA). The IDA will allow JPL technical managers to obtain Caltech R&D resources without unneeded bureaucracy. This is, after all, one of the reasons for a University run FFRDC. JPL expects the reengineered process to be completed and implemented by February 28, 1997.

SLP/DRI:bjj

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