

DOE F 1325.8
(08-93)

United States Government

Department of Energy



Memorandum

OFFICE OF INSPECTOR GENERAL

DATE: November 7, 2003

REPLY TO

ATTN OF: IG-34 (A03SC050)

Audit Report Number: OAS-L-04-04

SUBJECT: Audit of the U.S. Large Hadron Collider Program

TO: Director, Office of Science, SC-1

The purpose of this report is to inform you of the results of our audit of the U.S. Large Hadron Collider (LHC) Program. The audit was initiated in June 2003, and fieldwork was conducted through October 2003 at the Department of Energy's (Department) Headquarters, and the Fermi National Accelerator Laboratory. The audit methodology is described in an attachment to this report.

INTRODUCTION AND OBJECTIVE

The European Laboratory for Particle Physics, CERN, in collaboration with the United States (U.S.) and other non-member states, has undertaken construction of the LHC, a new high energy physics research facility at its laboratory site outside Geneva, Switzerland. International participants in the LHC construction project (Construction Project) include Canada, India, Japan, Russia, and the U.S. at a total cost of approximately \$6 billion. U.S. participation includes the Department and the National Science Foundation (NSF).

The Department's participation in the Construction Project was limited to a total of \$450 million. This financial commitment includes \$200 million to construct portions of the LHC Accelerator and \$250 million for fabrication of the ATLAS and Compact Muon Solenoid (CMS) detectors. The Department is also providing additional funding for U.S. participation in international scientific activities, referred to as the U.S. LHC Research Program (Research Program), which will continue after construction is complete. Collectively, the Construction Project and Research Program constitute the U.S. LHC Program. The objective of our audit was to determine whether the Department was properly managing its contributions to the U.S. LHC Program.

CONCLUSION AND OBSERVATIONS

Nothing came to our attention to indicate that the Department was improperly managing its contributions to the U.S. LHC Program. Our limited review, however, identified three areas of concern related specifically to the Construction Project.

Project Costs

We believe the Department's contributions for the Construction Project will exceed the \$450 million commitment by an estimated \$30 million. The commitment will be exceeded because the Department used funds designated for high energy physics research to satisfy CMS and ATLAS requirements. Specifically, labor costs for over 550 individuals were funded through the Office of Science's High Energy Physics "Base Program," which provides general support for high energy physics research conducted at the Department's national laboratories and other research institutions. Although the budget stated that the funding commitment did not include support for research physicists working on the U.S. LHC Program, these costs—funded through direct contributions or grants—were not tracked against the total project cost or used to monitor progress of the Construction Project.

The majority of the 550 individuals conducted research necessary to complete fabrication of the two LHC detectors, and were associated with collaborating universities or the national laboratories. We also noted that Base Program funding covered the costs of key personnel, such as the U.S. CMS Project Manager. According to the Department, the use of Base Program funding to support High Energy Physics projects is common practice. This practice, however, may obscure the true cost of a project and skew earned value reporting and, ultimately, may affect the quality of future funding decisions.

Time Estimates

We also observed that the amount of time dedicated to the Construction Project was over-estimated. Each year the Department obtains estimates for the amount of time scientific personnel would dedicate to the Construction Project, and would approve these estimates at several levels. However, our review of project documentation identified 17 individuals that estimated spending more than 100 percent of their time on various detector subsystems. Some of these individuals estimated that up to 200 percent of their time would be dedicated to the Construction Project. We estimated the value of time in excess of 100 percent to be approximately \$648,000. Since the Department does not track the actual time spent by scientific personnel on the Construction Project, we were unable to determine the impact of this over estimation.

CERN Direct Purchases

We also found that the Department made over \$46 million in reimbursements for CERN direct purchases without receiving all required documentation. As part of the agreement to provide these reimbursements, CERN was required to provide the Department with the related procurement solicitations. Even though the Department had requested this information, it had not been provided, and as of June 2003, reimbursements were being made based on CERN furnished invoices and other documents. While our review of available invoices did not

identify improper payments, we were unable to satisfy ourselves that all payments were appropriate because the solicitations were not available.

SUGGESTED ACTIONS

In light of these concerns, the Director, Office of Science, should consider taking the following actions:

- Require that all project-related costs, regardless of funding source, be clearly identified and quantified in future High Energy Physics projects;
- Evaluate time estimates provided by scientific personnel to ensure that they are reasonable; and,
- Require submission and evaluation of agreed-upon information prior to authorizing payments to participating organizations.

The concerns noted above were discussed with officials from the Office of Science on November 4, 2003.

We appreciate the cooperation of your staff during our review. If you have any questions regarding our audit, please contact Brian Boos at (301) 903-3858 or Bill Lubecke at (720) 962-7546.



Rickey R. Hass, Director
Science, Energy, Technology,
and Financial Audits
Office of Audit Services
Office of Inspector General

cc: Director, Office of Engineering and Construction Management, ME-90
Audit Liaison, Office of Science, SC-62
Team Leader, Audit Liaison Team, ME-1.1

Attachment

METHODOLOGY

To accomplish the audit objective, we:

- Held discussions with Headquarters officials from the Office of Science and the Office of Engineering and Construction Management in order to gain an understanding of the U.S. Large Hadron Collider (LHC) Program;
- Held discussions with officials from the U.S. LHC Program Office and key Project personnel;
- Reviewed pertinent U.S. LHC Program documentation, including a limited review at Headquarters of A Toroidal LHC Apparatus (ATLAS) documentation; and,
- Reviewed performance related information to determine compliance with the Government Performance and Results Act of 1993.

The audit was performed in accordance with generally accepted Government auditing standards for performance audits and included tests of internal controls and compliance with laws and regulations to the extent necessary to satisfy the audit objective. Because our review was limited, it would not necessarily have disclosed all internal control deficiencies that may have existed at the time of our audit. Since computer processed data was not the primary support used to meet our audit objective, we performed a limited assessment of data reliability. An exit conference was held on November 4, 2003.

Memorandum

DATE: NOV 13 2003
REPLY TO: IG-34 (A03SC050)
SUBJECT: Final Report Package for "Audit of the U.S. Large Hadron Collider Program"
Audit Report No.: OAS-L-04-04
TO: Frederick D. Doggett, Assistant Inspector General for Audit Services

Attached is the required final report package on the subject audit. The pertinent details are:

1. Actual Staff days: 158
Actual Elapsed days: 141
2. Names of OIG and/or contractor audit staff:

Assistant Director: Kevin Majane
Team Leader: Bill Lubecke
Auditor-in-Charge: Brian Boos
Audit Staff: Katie Shaull

3. Coordination with Investigations and Inspections:

Investigations: Vera Shepard/Brenda Froberg

Inspections: Henry Minner

June 13, 2003; September 16, 2003; and November 7, 2003



Rickey R. Hass, Director
Science, Energy, Technology,
and Financial Audits
Office of Audit Services
Office of Inspector General

Attachments:

1. Final Report (3)
2. Monetary Impact Report
3. Audit Project Summary Report
4. Audit Database Information Sheet

MONETARY IMPACT OF REPORT NO.: OAS-L-04-04

1. Title of Audit: Audit of the U.S. Large Hadron Collider Program

2. Division: SETFA

3. Project No.: A03SC050

4. Type of Audit:

Financial: _____ Performance: X
 Financial Statement _____ Economy and Efficiency _____
 Financial Related _____ Program Results X
 Other (specify type): _____

5.

FINDING		COST AVOIDANCE		QUESTIONED COSTS				MGT. POSITION	POTENTIAL BUDGET IMPACT
(A)	(B) Title	(C) One Time	(D) Recurring Amount PerYear	(E) Questioned	(F) Unsupported	(G) Unresolved	(H) Total (E)+(F)+(G)	(I) C=Concur N=Noncon U=Undec	(J) Y=Yes N=No
TOTALS--ALL FINDINGS									

6. Remarks: There is no current monetary impact or potential future savings.

7. Contractor: _____

8. Contract No.: _____

9. Task Order No.: _____

10. Approvals:

Division Director/Date: [Signature] 11/14/03

Technical Advisor & Date: [Signature] _____

Office of the Inspector General (OIG)
Audit Project Office Summary (APS)

Report run on:

November 7, 2003 12:14 PM

COMMITMENT DID NOT INCLUDE SUPPORT FOR RESEARCH PHYSICISTS WORKING ON THE U.S. LHC PROGRAM, THESE COSTS, FUNDED THROUGH DIRECT CONTRIBUTIONS OR GRANTS, WERE NOT TRACKED AGAINST THE TOTAL PROJECT COST OR USED TO MONITOR PROGRESS OF THE CONSTRUCTION PROJECT.

THE MAJORITY OF THE 550 INDIVIDUALS CONDUCTED RESEARCH NECESSARY TO COMPLETE FABRICATION OF THE TWO LHC DETECTORS, AND WERE ASSOCIATED WITH COLLABORATING UNIVERSITIES OR THE NATIONAL LABORATORIES. WE ALSO NOTED THAT BASE PROGRAM FUNDING COVERED THE COSTS OF KEY PERSONNEL, SUCH AS THE U.S. CMS PROJECT MANAGER. ACCORDING TO THE DEPARTMENT, THE USE OF BASE PROGRAM FUNDING TO SUPPORT HIGH ENERGY PHYSICS PROJECTS IS COMMON PRACTICE. THIS PRACTICE, HOWEVER, MAY OBSCURE THE TRUE COST OF A PROJECT AND SKEW EARNED VALUE REPORTING AND, ULTIMATELY, MAY AFFECT THE QUALITY OF FUTURE FUNDING DECISIONS.

TIME ESTIMATES:

WE ALSO OBSERVED THAT THE AMOUNT OF TIME DEDICATED TO THE CONSTRUCTION PROJECT WAS OVER-ESTIMATED. EACH YEAR THE DEPARTMENT OBTAINS ESTIMATES FOR THE AMOUNT OF TIME SCIENTIFIC PERSONNEL WOULD DEDICATE TO THE CONSTRUCTION PROJECT, AND WOULD APPROVE THESE ESTIMATES AT SEVERAL LEVELS. HOWEVER, OUR REVIEW OF PROJECT DOCUMENTATION IDENTIFIED 17 INDIVIDUALS THAT ESTIMATED SPENDING MORE THAN 100 PERCENT OF THEIR TIME ON VARIOUS DETECTOR SUBSYSTEMS. SOME OF THESE INDIVIDUALS ESTIMATED THAT UP TO 200 PERCENT OF THEIR TIME WOULD BE DEDICATED TO THE CONSTRUCTION PROJECT. WE ESTIMATED THE VALUE OF TIME IN EXCESS OF 100 PERCENT TO BE APPROXIMATELY \$648,000. SINCE THE DEPARTMENT DOES NOT TRACK THE ACTUAL TIME SPENT BY SCIENTIFIC PERSONNEL ON THE CONSTRUCTION PROJECT, WE WERE UNABLE TO DETERMINE THE IMPACT OF THIS OVER ESTIMATION.

CERN DIRECT PURCHASES:

WE ALSO FOUND THAT THE DEPARTMENT MADE OVER \$46 MILLION IN REIMBURSEMENTS FOR CERN DIRECT PURCHASES WITHOUT RECEIVING ALL REQUIRED DOCUMENTATION. AS PART OF THE AGREEMENT TO PROVIDE THESE REIMBURSEMENTS, CERN WAS REQUIRED TO PROVIDE THE DEPARTMENT WITH THE RELATED PROCUREMENT SOLICITATIONS. EVEN THOUGH THE DEPARTMENT HAD REQUESTED THIS INFORMATION, IT HAD NOT BEEN PROVIDED, AND AS OF JUNE 2003, REIMBURSEMENTS WERE BEING MADE BASED ON CERN FURNISHED INVOICES AND OTHER DOCUMENTS. WHILE OUR REVIEW OF AVAILABLE INVOICES DID NOT IDENTIFY IMPROPER PAYMENTS, WE WERE UNABLE TO SATISFY OURSELVES THAT ALL PAYMENTS WERE APPROPRIATE BECAUSE THE SOLICITATIONS WERE NOT AVAILABLE.

Office of the Inspector General (OIG)
Audit Project Office Summary (APS)

Report run on:

November 7, 2003 12:14 PM

Audit History

Audit No: A03SC050

History Date: 20-JUN-03

History Text:

CONDUCTED ENTRANCE CONFERENCE WITH OFFICE OF SCIENCE REPRESENTATIVES ON JUNE 19, 2003. {BKB}

Audit History

Audit No: A03SC050

History Date: 27-JUN-03

History Text:

REVIEWING/TESTING CERN DIRECT PURCHASES; REVIEWING FERMI FIELD WORK PROPOSALS; IN GENERAL PREPARING FOR OUR TRIP TO FERMI THE WEEK OF JULY 7, 2003. {BKB}

Audit History

Audit No: A03SC050

History Date: 03-JUL-03

History Text:

REVIEW OF CERN DIRECT PURCHASES IS ALMOST COMPLETE. REVIEWED FERMI FWP'S AND FOUND REFERENCES TO LHC IN BASE PROGRAM AND RESEARCH PROGRAM PROPOSALS; WILL TRY TO DISCUSS WITH LINDY WHILE AT FERMI. IN GENERAL, COMPLETING PREPARATIONS FOR FERMI VISIT. {BKB}

Audit History

Audit No: A03SC050

History Date: 14-JUL-03

History Text:

WAS IN FERMI FROM 7/7 THRU 7/11, 2003. {BKB}

Audit History

Audit No: A03SC050

History Date: 18-JUL-03

History Text:

REVIEWING INFORMATION FROM FERMI VISIT AND PUTTING INTO TEAMMATE. HELD NSF OIG COORDINATION MEETING ON 7/10 AT NSF (KEVIN/GEORGE) TO DISCUSS AUDIT. THE AUDIT TEAM HAD FURTHER DISCUSSIONS VIA TELEPHONE WITH THE NSF OIG ON 7/17, AND AGAIN ON 7/18 (INCLUDING RICK). A FACE-TO-FACE MEETING HAS BEEN SCHEDULED FOR 7/29 IN GTN TO DISCUSS COMMON ISSUES AND HOW A JOINT DOE/NSF AUDIT SURVEY WOULD BE CONDUCTED. {BKB}

Office of the Inspector General (OIG)
Audit Project Office Summary (APS)

Report run on:

November 7, 2003 12:14 PM

Audit History

Audit No: A03SC050

History Date: 28-JUL-03

History Text:

IN SCOTTSDALE FOR ALL-HANDS TRAINING FROM 7/21-7/25, 2003. {BKB}

Audit History

Audit No: A03SC050

History Date: 01-AUG-03

History Text:

COMPLETING WORKPAPERS FROM FERMI VISIT. MET (KEVIN, BRIAN, KATIE) WITH NSF OIG IN GTN ON 7/29 TO DISCUSS JOINT AUDIT. NSF OIG WILL WAIT FOR OUR EOS DECISION BEFORE APPROACHING US AGAIN ABOUT JOINT AUDIT. IN THE MEANTIME, THEY WILL DEVELOP AN IDEA OF WHAT THEY WANT TO DO, HOW WE CAN COLLABORATE, WHEN STAFF WILL BE AVAILABLE, AND HOW THEY WILL BE UTILIZED. THEY WILL ALSO WORK THROUGH US IN THE NEAR TERM TO GET QUESTIONS ANSWERED THAT REQUIRE DOE INPUT. REFERENCED MCNEIL BIOMASS REPORT (A03SC016) ON 7/31 (AFTERNOON) AND 8/1 (MORNING). {BKB}

Audit History

Audit No: A03SC050

History Date: 08-AUG-03

History Text:

COMPLETED REFERENCING ON MCNEIL BIOMASS REPORT (A03SC016). WAS DOWNTOWN ON 8/2/03 FOR MEETING WITH ME-20 TO DISCUSS PERFORMANCE MEASURES. BRIEFED KEVIN, BILL LUBECKE, AND JILL ABOUT THE STATUS OF THE US LHC AUDIT ON 8/6/03. MET WITH HIGH ENERGY PHYSICS (HEP) ON 8/7 (GLEN CRAWFORD) AND 8/8 (AESOOK BYON-WAGNER) TO PROVIDE THEM WITH THE STATUS OF THE AUDIT, WHAT OUR CONCERNS WERE REGARDING THE US LHC PROGRAM (OFF-PROJECT NATURE OF PHYSICISTS INVOLVED WITH CONSTRUCTION ACTIVITIES (BASE PROGRAM), AND COMMISSIONING COSTS FOR THE DETECTORS. REQUESTED HEP PROVIDE US WITH INFORMATION REGARDING THE AUTHORITY OF THE BASE PROGRAM AND WHAT IT CAN/CANNOT BE USED FOR. IN PROCESS OF QUANTIFYING OFF-PROJECT COSTS FOR 1999-2003. {BKB}

Audit History

Audit No: A03SC050

History Date: 15-AUG-03

History Text:

DEVELOPED ROUGH ESTIMATES OF US CMS OFF-PROJECT CONSTRUCTION COSTS FOR 1999-2003. RECEIVED US ATLAS DATA LATE IN WEEK, DEVELOPED ROUGHT OFF-PROJECT ESTIMATES FOR THIS DETECTOR AS WELL. DISCUSSED OUR CONCERNS WITH HIGH ENERGY PHYSICS (AESOOK BYON-WAGNER) AND SCIENCE BUDGET OFFICE (JEFF AUCHMOODY) ON 8/14/03. THEY EXPRESSED SOME CONCERNS ABOUT ANY POTENTIAL FINDING/RECOMMENDATIONS WE MAY HAVE. AUDIT TEAM (BRIAN, KATIE, BILL LUBECKE) PROVIDED RICK WITH A STATUS ON 8/15/03 (INCLUDING SOME OF MANAGEMENT'S CONCERNS). WE REQUESTED AN ADDITIONAL THREE WEEKS TO WORK ON THE AUDIT (THROUGH 9/5/03). RICK SAID TO KEEP WORKING THE AUDIT, AND THAT HE WOULD PROVIDE OUR STATUS HANDOUT TO BILL MAHARAY FOR HIS INPUT. {BKB}

Office of the Inspector General (OIG)
Audit Project Office Summary (APS)

Report run on:

November 7, 2003 12:14 PM

Audit History

Audit No: A03SC050

History Date: 25-AUG-03

History Text:

DISCUSSED OUR CONCERNS REGARDING THE OFF-PROJECT NATURE OF PHYSICISTS WITH OECM (JIM RISPOLI AND DAVE TREACY) ON 8/15/03: THEY SAID THAT PHYSICISTS WORKING 100% ON THE PROJECT AND KEY PROJECT PERSONNEL SHOULD BE CHARGED TO THE PROJECT. PROVIDED THIS INFORMATION TO RICK AND TO KEVIN MAJANE (VIA E-MAIL) ON 8/15/03. WILL RE-WORK NUMBERS BASED ON DISCUSSION WITH OECM. WORKING ON QUANTIFYING OFF-PROJECT NATURE OF US ATLAS. {BKB}

Audit History

Audit No: A03SC050

History Date: 29-AUG-03

History Text:

DISCUSSED PROJECT STATUS ON 8/26/03 (KEVIN, BILL L., KATIE, BRIAN). AGREED TO CONVERT STATUS DOCUMENT TO END OF SURVEY DOCUMENT, WITH OFFICIAL END OF SURVEY PLANNED FOR 9/8/03 (KEVIN INFORMED RICK AND REQUESTED THIS EOS DATE). RE-WORKED OUR NUMBERS TO STRATIFY OFF-PROJECT COSTS INTO 25-PERCENT INCREMENTS. WORKING ON COMPLETING AUDIT WORK PRIOR TO EOS. ATTEMPTING TO SCHEDULE MEETING WITH THE CONSTRUCTION MANAGEMENT SUPPORT DIVISION (SC-81) TO PROVIDE THEM WITH OUR CONCERNS REGARDING THE US LHC. {BKB}

Audit History

Audit No: A03SC050

History Date: 05-SEP-03

History Text:

DISCUSSED OUR CONCERNS REGARDING THE LHC WITH THE CONSTRUCTION MANAGEMENT SUPPORT DIVISION (STEVE MEADOR, SC-81) ON 9/2/03. MET WITH HIGH ENERGY PHYSICS (AESOOK BYON-WAGNER, MOISHE PRIPSTEIN; GLEN CRAWFORD) ON 9/4/03 IN ORDER TO DO A "REALITY" CHECK REGARDING OUR UNDERSTANDING OF THE LHC AND TO DO A "REASONABLENESS" CHECK REGARDING THE ASSUMPTIONS AND METHODOLOGY WE USED TO CALCULATE OFF-PROJECT COSTS. REFERENCED THE LETTER REPORT ON ORNL PROCUREMENT (A03NE045) ON 9/2-9/3/03. WORKING ON COMPLETING OUR CALCULATIONS OF OFF-PROJECT COSTS, AS WELL AS THE NUMBER OF PERSONNEL THAT ARE OFF-PROJECT. DRAFTING END OF SURVEY DOCUMENT. EOS IS PLANNED FOR 9/8/03. {BKB}

Audit History

Audit No: A03SC050

History Date: 11-SEP-03

History Text:

[INTERIM HISTORY] CONDUCTED END OF SURVEY MEETING ON 9/10/03 (RICK, KEVIN, BILL LUBECKE, KATIE, AND MYSELF). AFTER THE MEETING, RICK AND KEVIN DISCUSSED OUR CONCERNS WITH BILL MAHARAY. IT WAS DECIDED THAT WE SHOULD APPROACH OECM AGAIN REGARDING THEIR SUPPORT FOR OUR FINDING. IT WAS ALSO DECIDED THAT WE SHOULD APPROACH NASA TO UNDERSTAND HOW THEY ACCOUNT FOR SCIENTISTS WORKING ON THEIR PROJECTS. THE END OF SURVEY DECISION HAS NOT YET BEEN MADE; WE WILL MEET WITH RICK AGAIN AFTER OUR OECM AND NASA INQUIRIES. HOWEVER, IT WAS EXPLAINED THAT (1) IF OECM SUPPORTS US, THEN WE WOULD ISSUE A BLUE BOOK REPORT (WITH THE OPTION OF EXPANDING/REVISING THE OBJECTIVE TO INCLUDE OTHER PROJECTS); OR (2) IF OECM DOES NOT SUPPORT US, THEN WE WOULD ISSUE A LETTER REPORT UNDER A BLUE COVER (THIS WAS DESCRIBED AS BEING A SHORT BLUE BOOK REPORT). {BKB}

Office of the Inspector General (OIG)
Audit Project Office Summary (APS)

Report run on: November 7, 2003 12:14 PM

Audit History

Audit No: A03SC050

History Date: 12-SEP-03

History Text:

REFERENCED 2003 FISMA ON 9/6/03 AND 9/8/03. DISCUSSED OUR FINDING WITH OECM (JIM RISPOLI AND DAVE TREACY) ON 9/11/03. DISCUSSED THE AUDIT AGAIN WITH THE DIVISION DIRECT (AND KEVIN, BRIAN, AND KATIE) ON 9/12/03; INFORMED TEAM LEADER OF THE DISCUSSION. REVISED EOS DOCUMENT TO INCLUDE SUMMARY OF DISCUSSION WITH OECM. PROVIDED REVISED EOS TO TEAM LEADER AND ASSISTANT DIVISION DIRECTOR ON 9/12/03. {BKB}

Audit History

Audit No: A03SC050

History Date: 17-SEP-03

History Text:

DIVISION DIRECTOR WAS PROVIDED WITH REVISED EOS, AND IT WAS SIGNED, ON 9/15/03. A "GO" DECISION WAS APPROVED. {BKB}

Audit History

Audit No: A03SC050

History Date: 22-SEP-03

History Text:

REFERENCED CHANGES TO DOE FISMA 2003 ON 9/16/03. ADVISED HIGH ENERGY PHYSICS ON 9/16/03 THAT WE WOULD BE PROCEEDING INTO THE NEXT PHASE OF THE AUDIT (VERIFICATION). CONTACTED NASA TO OBTAIN INFORMATION ON COSTING OF SCIENTIFIC EFFORT FOR ITS PROJECTS. REFINING NUMBER OF OFF-PROJECT PERSONNEL AND ASSOCIATED COSTS FOR US LHC. GOV'T WAS CLOSED 9/18 & 9/19 DUE TO HURRICANE ISABEL. {BKB}

Audit History

Audit No: A03SC050

History Date: 26-SEP-03

History Text:

REFINED OFF-PROJECT COSTS. ESTABLISHED LINK BETWEEN OFF-PROJECT PERSONNEL (SCIENTISTS) AND HEP "BASE PROGRAM" GRANTS. COMPLETING/REVIEWING WORKPAPERS IN TEAMMATE. {BKB}

Audit History

Audit No: A03SC050

History Date: 03-OCT-03

History Text:

CONTINUING WITH WORKPAPER COMPLETION IN TEAMMATE. MET WITH TEAM LEADER (BILL L.) ON 9/30/03 TO DISCUSS STATUS OF AUDIT. {BKB}

Office of the Inspector General (OIG)
Audit Project Office Summary (APS)

Report run on: November 7, 2003 12:14 PM

Audit History

Audit No: A03SC050

History Date: 08-OCT-03

History Text:

THE AUDIT TEAM (KEVIN, BRIAN, KATIE) DISCUSSED THE STATUS OF AUDIT WITH OIG MANAGEMENT (BILL M., FRED, RICK, JILL, (AND STU YOUNG)) ON 10/6/03. BILL M. SUGGESTED WE BRIEF GREG FRIEDMAN ON OUR FINDING. MEETING TO BRIEF GREG WAS TENTATIVELY SCHEDULED FOR 10/9. RICK INFORMED THE AUDIT TEAM ON 10/7 THAT GREG WAS BRIEFED ON OUR FINDING AND THAT GREG (AND BILL M. & FRED) DID NOT SUPPORT IT. THE AUDIT TEAM MET ON 10/7 TO DISCUSS - WE WILL WRITE A LETTER REPORT WITH SUGGESTIONS. {BKB}

Audit History

Audit No: A03SC050

History Date: 10-OCT-03

History Text:

DRAFTED LETTER REPORT AND PROVIDED TO ASSISTANT DIVISION DIRECTOR ON 10/10/03. COMPLETING WORKPAPERS IN TEAMMATE. {BKB}

Audit History

Audit No: A03SC050

History Date: 20-OCT-03

History Text:

[FOR WEEK OF 10/13/03]: MADE REVISIONS TO DRAFT LETTER REPORT BASED ON INPUT FROM ASSISTANT DIVISION DIRECTOR. INDEXING DRAFT LETTER REPORT. COMPLETING WORKPAPERS IN TEAMMATE. {BKB}

Audit History

Audit No: A03SC050

History Date: 24-OCT-03

History Text:

INFORMED HIGH ENERGY PHYSICS (AESOOKBYON-WAGNER) ON 10/20/03 OF OUR DECISION TO END THE AUDIT AND ISSUE A LETTER REPORT. DISCUSSED DRAFT LETTER REPORT WITH DIVISION DIRECTOR ON 10/23/03; MAKE REQUIRED CHANGES TO DRAFT REPORT. INDEXING CHANGES TO DRAFT REPORT. CONTINUING WORKPAPER REVIEW, CLEARING COACHING NOTES, ETC. AMY CAMPBELL HAS BEEN ASSIGNED AS REFERENCER. {BKB}

Audit History

Audit No: A03SC050

History Date: 31-OCT-03

History Text:

PROVIDED TEAMMATE FILE TO REFERENCER (AMY CAMPBELL) ON 10/27/03. PROVIDED HEP WITH A PRE-EXIT BRIEFING ON THE CONTENTS OF OUR LETTER REPORT ON 10/28/03. EXIT CONFERENCE HAS BEEN SCHEDULED FOR 11/4/03. STARTED PRELIMINARY WORK ON NEXT AUDIT. {BKB}

Office of the Inspector General (OIG)
Audit Project Office Summary (APS)

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Report run on: November 7, 2003 12:14 PM

Audit History

Audit No: A03SC050

History Date: 07-NOV-03

History Text:

EXIT CONFERENCE CONDUCTED 11/4/03. CLEARED ALL REFERENCING POINTS AND PROVIDED FINAL LETTER TO DIVISION DIRECTOR ON 11/6 FOR HIS REVIEW AND SIGNATURE. DIVISION DIRECTOR SIGNED LETTER REPORT ON 11/7/03. {BKB}

AUDIT DATABASE INFORMATION SHEET

1. Project No.: A03SC050
2. Title of Audit: Audit of the U.S. Large Hadron Collider Program
3. Report No./Date: OAS-L-04-04, November 7, 2003
4. Management Challenge Area: Performance Management
5. Presidential Mgmt Initiative: None
6. Secretary Priority/Initiative: None
7. Program Code: SC
8. Location/Sites: Headquarters and the Fermi National Accelerator Laboratory.
9. Finding Summary:

Nothing came to our attention to indicate that the Department was improperly managing its contributions to the U.S. Large Hadron Collider (LHC) Program. Our limited review, however, identified three areas of concern related specifically to the U.S. LHC Construction Project (Construction Project).

We believe that the Department's contributions for the Construction Project will exceed its \$450 million commitment by an estimated \$30 million. The commitment will be exceeded because the Department used funds designated for high energy physics research to satisfy CMS and ATLAS requirements. Specifically, labor costs for over 550 individuals were funded through the Office of Science's High Energy Physics "Base Program," which provides general support for high energy physics research conducted at the Department's national laboratories and other research institutions.

We also observed that the amount of time dedicated to the Construction Project was over-estimated. Our review of project documentation identified 17 individuals that estimated spending more than 100 percent of their time on various detector subsystems. We estimated the value of time in excess of 100 percent to be approximately \$648,000.

We also found that the Department made over \$46 million in reimbursements for CERN direct purchases without receiving all required documentation. While our review of available invoices and other documentation did not identify improper payments, we were unable to satisfy ourselves that all payments were appropriate because the required procurement solicitations were not available.

10. Keywords:

- Base Program
- Large Hadron Collider
- Project Management
- Science