

NATIONAL SCIENCE FOUNDATION
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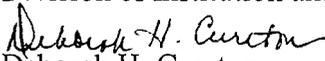


OFFICE OF
INSPECTOR GENERAL

MEMORANDUM

DATE: MAR 26 2008

TO: Mary F. Santonastasso, Director
Division of Institution and Award Support

FROM: 
Deborah H. Cureton
Associate Inspector General for Audit

SUBJECT: NSF OIG Audit Report No. OIG-08-1-008
Audit of Bermuda Institute of Ocean Sciences Multi-Year Incurred
Costs Audit and FY 2005 Final Indirect Rates

In response to NSF's request for audit support, we contracted with the Defense Contract Audit Agency (DCAA), Tampa Bay Branch Office, to perform a series of audits of the Bermuda Institute of Ocean Sciences¹ (BIOS). As these audits are issued, we provide the results to the Division of Institution and Award Support (DIAS).² This audit report covers \$9.2 million in costs that BIOS claimed for fiscal years (FY) 2002-2005 and the interim period through September 30, 2006 on four NSF awards, OCE-0202932, OCE-0505888, OCE-0326885, and OCE-0423771, and recommends FY 2005 final indirect cost rates. Under the awards, BIOS provided equipment and ship operations for two vessels, the *Weatherbird II*, which was subsequently sold; and the *Atlantic Explorer*, a newly-acquired research vessel. BIOS also performed the research award *Times Series Studies* in the Atlantic Ocean.

The objectives of the audit were to determine allowability of direct and indirect costs for the four NSF awards and to evaluate and recommend indirect cost rates for FY 2005.

The audit was performed in accordance with Generally Accepted Government Auditing Standards. The DCAA audit report is attached to this memorandum.

¹ Bermuda Institute of Ocean Sciences is the former Bermuda Biological Station for Research or BBSR.

² The results of the first audit are in NSF OIG Audit Report No. OIG-07-1-018, *Post Award Accounting System Audit of Bermuda Institute of Ocean Sciences*, dated September 27, 2007.

Results of the Audit

Direct and Indirect Costs

With the exception of \$253 which was over billed and subsequently reversed by BIOS as a result of the audit, the report discloses that the costs claimed under the four awards, totaling \$9,253,438, are considered allowable, allocable, and reasonable for all direct and indirect costs in accordance with the award terms and conditions, including the limitation on indirect recovery required by NSF policy. The NSF Grant Policy Manual (GPM) provision limited recovery of indirect rates to the budgeted rates established at the time of the BIOS awards. (See the Schedule of Cumulative Allowable Costs in the attached report for the results of the audit by award number).

DCAA also audited BIOS' actual FY 2005 indirect cost rates and determined that they are acceptable as proposed. Additionally, DCAA verified that BIOS claimed on these two awards the lower of the budgeted indirect rates, as NSF requires, although these rates are substantially below BIOS' actual indirect cost rates.

<u>Award No.</u>	<u>Description</u>	<u>Budgeted</u>	<u>Maximum Provisional</u>	<u>Actual</u>
OCE-0505888	Atlantic Explorer	[REDACTED]	[REDACTED]	[REDACTED]
OCE-0326885	Atlantic Time Series Studies	[REDACTED]	[REDACTED]	[REDACTED]

As stated in our transmittal letter accompanying our previous audit of BIOS' Accounting System,³ BIOS is under-recovering its actual indirect costs and has taken on additional debt for acquisition and building programs. For these reasons, OIG continues to suggest that NSF monitor [REDACTED]

NSF Requested Information

In response to a request from officials in NSF's Division of Ocean Sciences, DCAA was able to verify that:

- Allocations of costs for "at sea" versus "at dock" ship time were accurate;
- Costs charged for the Major Overhaul Shipyard Account (MOSA) were accurate and not included in BIOS' indirect pools and allocation bases;

³ See NSF OIG Audit Report No. OIG-07-1-018, *Post Award Accounting System Audit of Bermuda Institute of Ocean Sciences*, dated September 27, 2007.

- Costs for shipboard scientific equipment did not include indirect costs nor were the associated depreciation costs included in indirect cost pools;
- NSF is billed a daily rate based on actual ship costs, and the daily rate is correctly allocated among all users;
- Ship revenue was accurately recorded and used to calculate the NSF daily ship rate;
- Weatherbird II costs of sale were not booked or billed to NSF awards.
- Atlantic Explorer depreciation costs are excluded from indirect pools allocated to NSF; and
- Costs charged for diesel and gasoline were accurate.

We are providing a copy of this memorandum to the Geosciences Directorate/Division of Ocean Sciences (GEO/OCE). The responsibility for audit resolution rests with DIAS. Accordingly, we ask that no action be taken concerning the report's findings without first consulting DIAS at (703) 292-8230.

OIG Oversight of Audit

To fulfill our responsibilities under Generally Accepted Government Auditing Standards, the Office of Inspector General:

- Reviewed DCAA's approach and planning of the audit;
- Monitored the progress of the audit at key points;
- Coordinated periodic meetings with DCAA and OIG management to discuss audit progress, findings, and recommendations;
- Reviewed the audit report prepared by DCAA to ensure compliance with Generally Accepted Government Auditing Standards and Office of Management and Budget Circulars; and
- Coordinated issuance of the audit report.

DCAA is responsible for the attached auditor's report on BIOS and the conclusions expressed in the report. The NSF OIG does not express any opinion on BIOS's claimed costs or the conclusions presented in DCAA's audit report.

NSF OIG Audit Report No. OIG-08-1-008

We thank you and your staff for the assistance extended to us during the audit. If you have any questions about this report, please contact Sherrye McGregor at (703) 292-5003 or Jannifer Jenkins at (703) 292-4996.

Attachment: DCAA Audit Report No. 1271- 2007F17900001, Bermuda Institute of Ocean Sciences, Inc. Report on Multi-Year Incurred Costs Audit of Fiscal Years (FYs) 2002 through 2005 and the Interim Period Ended September 30, 2006, and FY 2005 Final Indirect Rates, dated November 5, 2007.

cc: Karen Tiplady, Division Director, BFA/DGA
Julie D. Morris, Division Director, GEO/OCE
Linda Goad, Program Director, GEO/OCE



DEFENSE CONTRACT AUDIT AGENCY
AUDIT REPORT NO. 1271-2007F17900001



November 5, 2007

PREPARED FOR: Office of Inspector General
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SUBJECT: Report on Multi-Year Incurred Costs Audit of Fiscal Years (FYs) 2002 through 2005 and the Interim Period Ended September 30, 2005, and FY 2005 Final Indirect Rates

REFERENCES: Awards OCE-0202932, OCE-0326885, OCE-0423771, and OCE-0505888
Relevant Dates: See Page 7
DCAA Chron. No.: 8-9001

GRANTEE: Bermuda Institute of Ocean Sciences, Inc.
Formerly Bermuda Biological Station for Research, Inc.
17 Biological Lane, Ferry Reach
St. George's GE 01, Bermuda

REPORT RELEASE RESTRICTIONS: See Page 8

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SUBJECT OF AUDIT

As you requested on August 11, 2006, authorization to proceed dated September 1, 2006, received on October 27, 2006, we examined Bermuda Institute of Ocean Sciences, Inc. (BIOS) formerly Bermuda Biological Station for Research, Inc. (BBSR)'s incurred costs proposals and related books and records for reimbursement of awards OCE-0202932, OCE-0326885, OCE-0423771, and OCE-0505888 of fiscal years (FYs) 2002 through 2005 and the last quarter available at the time of our fieldwork from January 1, 2006 through September 30, 2006 incurred costs. The purpose of the examination was to determine allowability of direct and indirect costs and evaluate indirect cost rates for FY 2005. The proposed rates apply primarily to the awards listed in the report's Appendix, Page 9.

The proposals are the responsibility of the grantee. Our responsibility is to express an opinion based on our examination.

SCOPE OF AUDIT

We conducted our examination in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the examination to obtain reasonable assurance about whether the data and records examined are free of material misstatement. An examination includes:

- evaluating the grantee's internal controls, assessing control risk, and determining the extent of audit testing needed based on the control risk assessment;
- examining, on a test basis, evidence supporting the amounts and disclosures in the data and records evaluated;
- assessing the accounting principles used and significant estimates made by the grantee;
- evaluating the overall data and records presentation; and
- determining the need for technical specialist assistance.

We evaluated the proposal using the applicable requirements contained in the:

- OMB Circular A-122, Cost Principles for Non-Profit Organizations;
- Federal Acquisition Regulation (FAR);
- NSF Grant Policy Manual (GPM); and
- Specific provisions contained in NSF Awards OCE-0202932, OCE-0326885, OCE-0423771, and OCE-0505888.

BIOS claims exemption under 48 CFR 9903.201-1(b)(7) from the practices required by the Cost Accounting Standards Board rules and regulations because the company's contracts and subcontracts are executed and performed entirely outside the United States, its territories, and its possessions.



Audit Report No. 1271-2007F17900001

As reported in Audit Report No. 1271-2007F17740001, dated May 24, 2007, we considered BIOS' accounting system inadequate in part, as described in the Grantee Organization and Systems section of this report, Page 5. BIOS' accounting system is deficient in complying with the requirements of the Office of Management and Budget (OMB) Circular A-122, Attachment A, Paragraph E.2.f. However, the identified deficiency does not affect the scope of this audit. The scope of our examination reflects our assessment of control risk and includes tests of compliance with laws and regulations that we believe provide a reasonable basis for our opinion.

RESULTS OF AUDIT

Indirect Rates

In our opinion, the grantee's indirect rates for fiscal year (FY) 2005 are acceptable as proposed.

The grantee's actual indirect rates are summarized below:

<u>Cost Center</u>	<u>Indirect Rate</u>	<u>Allocation Base FY 2005 Amount</u>	<u>Description</u>
Ship Operations	[REDACTED]	[REDACTED]	(a)
Resident Science	[REDACTED]	[REDACTED]	(b)

(a) Allocation Base – Total Atlantic Explorer ship operations direct costs excluding dry dock overhauls, and participant support costs.

(b) Allocation Base – Total Resident Science direct costs excluding capital expenditures in excess of \$10,000 each, subcontracts in excess of \$25,000, and participant support costs.

In accordance with NSF's Grant Policy Manual (GPM), the grantee claimed during FY 2005 the lower of the budgeted indirect rates established at the time of the award, the maximum provisional rates established in NSF non-profit rate agreement dated October 7, 2005, and the final rates established at the end of the accounting period, as summarized below:

<u>Award No.</u>	<u>Description</u>	<u>Budgeted</u> (c)	<u>Maximum Provisional</u> (d)	<u>Actual</u>
OCE-0202932	Weatherbird II (a)	-	-	-
OCE-0505888	Atlantic Explorer	[REDACTED]	[REDACTED]	[REDACTED]
OCE-0326885	Atlantic Time Series Studies	[REDACTED]	[REDACTED]	[REDACTED]
OCE-0423771	Shipboard Scientific Equipment (b)	-	-	-



Audit Report No. 1271-2007F17900001

- (a) No costs incurred in FY 2005.
- (b) In accordance with award's terms, no indirect costs loadings are claimed.
- (c) In accordance with NSF's GPM, lower rates claimed on awards under review.
- (d) Maximum provisional rates established in NSF non-profit rate agreement dated October 7, 2005.

Direct Costs

In our opinion, claimed direct costs are acceptable and are provisionally approved, pending final acceptance. Final acceptance of amounts proposed under Government awards does not take place until performance under the award is completed and accepted by the cognizant authorities and the audit responsibilities have been completed.

Per your request, we evaluated specific areas that you identified as high risk and included them in our scope of audit, as described below. On a test basis, we examined evidence supporting the amounts and disclosures in the data and records evaluated.

- (1) Ship Log – We reviewed the ship's log including dates at sea and expedition information. On a test basis, we reconciled the ship's log dates to (i) budgeted dates under NSF ship operations awards, (ii) funded cruise reports from the University National Oceanographic Laboratory System (UNOLS), (iii) the ship checklist including yearly programmed plan and actual sea days information, and (iv) the ship utilization forms including scientists names, research description, and the funded days at sea.
- (2) Major Overhaul Shipyard Account (MOSA) – We examined MOSA's budgeted and actual booked costs, and traced to supporting books and records. These costs are billed as direct costs excluding indirect loadings. Accordingly, the costs are excluded from BIOS indirect pools and allocation bases.
- (3) Shipboard Scientific Equipment – In accordance with NSF award OCE-0423771 terms and conditions, we verified that the claimed costs do not include indirect loadings. Also, we reviewed that the associated equipment's depreciation expense is not included in the indirect pools.
- (4) Ship's Daily Rate – The rate is calculated for budgeting and funding purposes by dividing the ship's yearly budgeted research expenses by the number of funded days at sea. BIOS' claimed costs to NSF are not based on the calculated daily rate. However, the rate is use for other ship users and the revenue received is credited to the NSF awards.

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- (5) We reviewed the credited revenue under the ship operations awards, Weatherbird II Award No. OCE-0202932 and Atlantic Explorer Award No. OCE-0505888. On a test basis, we evaluated BIOS' booked revenue to ensure that there was no additional revenue allocable to the NSF awards. The ship daily rate for FY 2005 was calculated as follows:

<u>Budgeted Daily Rate for FY 2005</u>	
Estimated Research Costs	[REDACTED]
Research Sea Days	[REDACTED]
Ship Daily Rate	[REDACTED]

- (6) Weatherbird II Sale Costs – We verified that the ship's sale costs are not booked or billed to NSF awards. All sale associated costs are accumulated in a separate general ledger account.
- (7) Atlantic Explorer Depreciation Costs – NSF did not grant any funding for the purchase of the Atlantic Explorer. Therefore, we verified that the ship's depreciation expense is excluded from the indirect pools allocated to NSF.
- (8) Diesel & Gasoline Agreement – We reviewed BIOS' diesel and gasoline agreement with ESSO Bermuda, a division of Coral Petroleum Company Limited, for FYs 2000 through 2008. The agreement is to supply fuels, lubricants, and other petroleum products at a variable cost. On a test basis, we traced the agreement's rates to supporting invoices and proof of payment.

Cumulative Allowable Cost Worksheet (CACWS)

The costs noted on the schedule of cumulative allowable costs in the report's Appendix, Page 9, represent costs that are considered allowable under the listed awards and are, therefore, reimbursable. In accordance with NSF's GPM, the grantee claimed budgeted rates, which are lower than the maximum provisional rates established in NSF non-profit rate agreement dated October 7, 2005, and final rates established at year end of each accounting period. As requested, we presented the costs per award period of performance through September 30, 2006, the last quarter available at the time of our fieldwork. For those awards identified as "Ready to Close," the information on the CACWS should be used for closeout procedures by the Contracting Officer.

We discussed the results of our examination with [REDACTED], Financial Controller, in an exit conference held on September 6, 2007. Accordingly, the grantee concurred with the results of audit.

GRANTEE ORGANIZATION AND SYSTEMS

1. Organization:

The Bermuda Institute of Ocean Sciences, Inc. (BIOS) formerly Bermuda Biological Station for Research, Inc. (BBSR) was founded in 1903 by scientists as a station for research in biology and zoology. BBSR was incorporated in New York in 1926 as a U.S. not-for-profit organization and by 1932 its present location was opened in Ferry Reach, St. George's, Bermuda. BBSR changed its name to Bermuda Institute of Ocean Sciences, Inc. (BIOS) on April 4, 2007 to reflect the change of the research station into an institute focused on the study of marine and atmospheric systems. BIOS' revenues for its fiscal year ending December 31, 2006 were approximately \$13.3 million, of which approximately 36 percent were from the U.S. Federal Government.

2. Accounting System:

As reported in Audit Report No. 1271-2007F17740001, dated May 24, 2007, BIOS' accounting system is inadequate in part for accumulating and billing costs under Government awards. BIOS' accounting system is deficient in complying with the requirements of the Office of Management and Budget (OMB) Circular A-122, Attachment A, Paragraph E.2.f. However, the identified deficiency does not affect the scope of this audit. BIOS' accounting period is from January 1st to December 31st. BIOS maintains an accounting system on the accrual basis in accordance with generally accepted accounting principles. BIOS' accounting system is posted on a current basis. Appropriate adjusting entries are made at the end of each month and at year end. BIOS' prepares financial statements on an annual basis. The annual financial statements are audited by O'Connor Davies Munns & Dobbins, LLP.

BIOS maintains a job cost accounting system which is fully integrated in the overall accounting system, wherein grants are assigned individual project numbers and direct costs are identified and charged to those numbers. Indirect costs are identified and accumulated under individual departments, which in turn are identified to the various indirect cost pools. Indirect expenses are grouped in indirect pools. The following schedule describes BIOS indirect cost pools and related allocation bases, and the type of effort normally charged direct and indirect:

Indirect Cost Pools and Allocation Bases

<u>Indirect Cost Pool</u>	<u>Allocation Base</u>
Resident Science	Total direct costs excluding capital expenditures in excess of [REDACTED] each, individual subcontract costs in excess of [REDACTED] and participant support costs.
Ship Operations	Total direct costs excluding dry dock overhauls and participant support costs.

The Following Effort Is Normally Charged Direct:

- Direct time of direct labor employees;
- Premium (overtime, shift, field) time of direct labor;
- Raw material, purchased parts and subcontracted items;
- Travel expenses incurred by direct employees;
- Freight charges for direct raw materials,- purchased parts, and subcontracted items;
- Purchase, fabrication or rental of special tooling or test equipment;
- Professional services and consultant fees for direct effort; and
- Temporary help to perform direct effort.

The Following Effort Is Normally Charged Indirect:

- Management, supervisory, and clerical salaries;
- Indirect time of direct employees;
- Premium (overtime and shift) of indirect employees;
- Social Security, unemployment insurance, workmen's compensation, group insurance, pension expense, vacation and holiday pay;
- Travel expense associated with indirect labor effort; and
- Other expenses such as general operating supplies, depreciation, employee wellness programs, utilities, rental costs of facilities, and general purpose equipment.

DCAA PERSONNEL

Primary contacts regarding this audit:

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General information on audit matters is available at <http://www.dcaa.mil>.

RELEVANT DATES

Request for Audit: Office of Inspector General, National Science Foundation (NSF),
Dated August 11, 2006.

Due Date Extensions: Dated April 19, 2007, extended to August 15, 2007;
Dated August 9, 2007, extended to August 17, 2007;
Dated August 14, 2007, extended to September 7, 2007;
Dated September 7, 2007, extended to October 5, 2007;
Dated October 1, 2007, extended to October 26, 2007; and
Dated October 25, 2007, extended to November 5, 2007.

AUDIT REPORT AUTHORIZED BY:

/s/ Mary Ann Yenchus
/for/ Gary R. Ricketts
Branch Manager
DCAA Tampa Bay Branch Office

AUDIT REPORT DISTRIBUTION AND RESTRICTIONS

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RESTRICTIONS

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

SCHEDULE OF CUMULATIVE ALLOWABLE COSTS
AS OF SEPTEMBER 30, 2006

<u>Award No.</u>	<u>Fiscal Years</u> 2002 - 2005 (1)	<u>Interim</u> <u>Period</u> <u>Ended</u> 9/30/2006 (2)	<u>Total</u> <u>Cumulative</u> <u>Allowable</u> <u>Costs</u> (3)	<u>Cumulative</u> <u>Billings as of</u> 9/30/2006 (4)	<u>Ready</u> <u>to</u> <u>Close</u>	<u>(Over)</u> <u>Under</u> <u>Billed</u>
OCE-0202932						
OCE-0505888						
OCE-0326885						
OCE-0423771						
Total	\$	\$	\$			\$

- (1) These amounts represent total allowable costs through FY 2005.
- (2) As requested, we provided allowable costs information for the last quarter available at the time of our fieldwork, as of September 30, 2006.
- (3) These amounts represent total cumulative allowable costs, calculated using budgeted rates in accordance with NSF's Grant Policy Manual (GPM), since the budgeted rates established at the time of the award, are lower than the maximum provisional rates established in NSF non-profit rate agreement dated October 7, 2005, and the final rates established at the end of the accounting periods.
- (4) These amounts represent total billed cost from awards' inception through September 30, 2006, as reconciled to NSF's Federal Cash Transaction report for the quarter ended September 30, 2006, SF 272.

