

GEO Letterhead

Kenneth S. Johnson  
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Dear Dr. Johnson:

I want to thank you and the other members of the Committee of Visitors (COV) for performing a thorough and valuable analysis of the programs of the Facilities group of the Division of Ocean Sciences Integrative Programs Section.

I am pleased that you found that these programs, and the people who manage them, provided outstanding support for the sea-going oceanographic research supported by NSF, and beyond that a wider range of Federal agencies, and also the institutions which operate the academic fleet through the University-National Oceanographic Laboratory System (UNOLS).

I commend you for the very thorough review and your thoughtful and constructive. Dr. Michael Reeve, who is Head of the new Section of Integrative Programs, of which the Facilities group is a component, has provided a set of specific responses to your recommendations contained in the enclosed document.

I am particularly impressed with the forward looking vision of the COV, recognizing that we are entering a new phase of oceanography, where our abilities to observe and understand the oceans will rapidly increase over the next two decades, through the development of a much broader palette of observational technologies. You recognize the long-term role of the Facilities programs, which have “worked superbly to provide the U.S. oceanographic community with the unquestioned leading sea-going capabilities for academic research”. But you rightly challenge the Division of Ocean Sciences “to define this set of emerging community observational capabilities and develop a strategy for their procurement, management and support.” I am confident that, honoring this great tradition which stretches back over most of NSF’s half century, our present and future staff will be equal to that challenge.

Sincerely,

Margaret Leinen  
Assistant Director

NSF Committee of Visitors Report  
Facilities Programs of the Integrated Programs Section  
of the Division of Ocean Sciences  
Directorate for Geosciences  
June 3-5, 2002

**Response to Specific Recommendations of the COV**

Michael R. Reeve  
Section Head  
Integrative Programs Section  
Division of Ocean Sciences  
September 20, 2002

I, and the Program staff, are very gratified that the COV found the programs under review to provide outstanding support for the research programs funded by the Division and a spectrum of Federal agencies, and to receive your commendation for fostering the development of such a flexible and effective system. We note your finding that our management practices enable effective operation of Ocean Science Facilities, and you include among these best practices, utilization of cooperative agreements, coordination of fleet activities and a flexible proposal merit review process. Your comments are appreciated regarding the insight and leadership of our Program Officers, the high level of interaction between them, and related Program Managers and Principal Investigators.

We also appreciate your comments on management practices and recommendations for the future. We address these individually below with our comments. We intend to study them carefully, and, where ever possible implement them.

### ***Utilization of Cooperative Agreements***

Cooperative agreements were established by NSF, in recognition that support of activities other than research required a higher level of continuing interaction between NSF and the grantee, compared to research grants. As the COV noted, in FY 2000 we transferred the Ship Operations and UNOLS Office awards from grants to cooperative agreements. We have gained experience with them, and it is now time, as the COV suggests, to examine other similar activities, such as a long-standing grant to the University of Miami to monitor and clean up shipboard radioactive contamination, to determine whether they are more appropriate as cooperative agreements.

### ***Coordination of Fleet Activities***

The COV commended OCE “for its insight and leadership in use of group purchases of shipboard equipment for cost saving and standardization across the fleet”, and recommended that we expand this management practice, as outlined under the following two headings (Safety Training and Security). Besides the bulk purchases of immersion suits, work boats, communications electronics and shipboard laboratory vans, we have long supported a fleet-wide winch and wire pool. We have every intention of continuing to expand group purchases into other areas.

### ***Safety Training***

The COV “applauded the NSF initiative and dedication to strengthening the overall level of training among the UNOLS ship crews”. The COV recommended a community-based, rather than individual operator approach to this issue, noting a four-fold range in training costs requested by individual ship operators. NSF is encouraged to assess opportunities for gaining efficiencies (in costs and scheduling) through a centralized management of tracking and training. We agree that we should look to the establishment of such a fleet-wide system.

### ***Security***

The COV noted a recent attempted piracy attack on an NSF-owned ship (R/V Ewing) in the Red Sea and the fact that recommendations and practices for security training do not appear to exist. Security training across the fleet had been funded by NSF a decade ago when a similar incident occurred. Both the Ewing and another vessel operating in the Red Sea region in the same year had undertaken security training and precautions, but the COV is correct in that there are no systematic ongoing procedures. Soon after the

recent incident, UNOLS held a workshop in Washington D.C. to seek advice of experts, and formed a Security Subcommittee to examine all aspects of the issue and make recommendations. As soon as the report is received, we will study its recommendations carefully and develop an integrated training plan. In the meantime, we maintain contact with Mr. Charles Dragonette of the Naval Intelligence Office, who publishes the weekly Worldwide Threat to Shipping newsletter, and who attends our Ship Scheduling meetings and reviews our scheduling requests, advising us on any potential problems. We have also encouraged ship operators to request funds for security training in their upcoming round of annual proposals.

### ***Ship Inspections***

The Committee noted that the Ship Inspection program underwent a hiatus for over two years, when the mechanism of funding was changed from a grant to a contract. They recommended that such lapses should be discouraged. We very strongly agree with this statement. The contracting process proved to be much more time consuming than we had anticipated, involving drawing up a highly detailed bid package, going out to bid, establishing a review process, a subsequent call for final bid offers and review. We will do everything we can to avoid another such lengthy hiatus now that we are familiar with the very different and complex rules of procedure compared with a grant.

### ***Quantitative Assessment of Service Quality***

The COV noted the subjective nature of post-cruise reports and the need for measures of service quality to facilitate evaluations, leading to quantitative improvements. The old UNOLS post-cruise assessment forms were indeed qualitative and subjective, and their revision has been the topic of UNOLS Council discussion for over two years. A new form was approved and introduced about the time of the COV meeting. The new form is quantitative (using a variation of the standard NSF 5-point rating system) as well as narrative, and solicits input from multiple sources (chief scientist, captain, ship operator, and, in fact, any other interested party who wishes to provide input). We have received the first few submissions of the revised assessment form and so far they appear to provide much more useful information. We will analyze the results of the first year and make recommendations to UNOLS for any improvements necessary to the form, or as the COV suggests, introduce our own mandatory system of reporting. Further, Dr. Linda Goad who became Program Director for Ship Operations in FY 2001, will apply her Six Sigma training to rigorously pursue issues of

quality assurance in the Fleet. Under Dr. Goad's direction, a workshop of experts was convened at NSF in September to explore in depth the continued failures associated with Z-Drive propulsion systems, and identify the root causes and the long-term corrective measures.

### ***Ship Inspection Recommendations and Follow-up***

The COV recommended that web-based tracking of compliance of UNOLS ship inspections should be considered if privacy issues can be resolved. A new contract for ship inspections was negotiated by the NSF Division of Acquisition and Cost Support and implemented this year. With its establishment, we require ship operators to provide an initial response to inspections within 60 days. In addition, we require the ship operator to address the progress of any modifications/repairs, or request funds to complete these where necessary, in the following annual ship operation proposal. We will implement this recommendation.

### ***Centralized Tracking of Safety Training***

Similarly, the COV recommended that we support the development and maintenance of a centralized, web-based tool for tracking personnel for the Seafarer's Training, Certification and Watchkeeping Code training, which could facilitate "comparison shopping" for the best and most cost-efficient training programs. This is a good idea, but we believe it should be implemented by UNOLS, because the official NSF site cannot be used for such implied endorsements of commercial enterprises. We will ask UNOLS to implement this recommendation.

### ***Clarification of Guidelines for Shipboard Facilities and Operating Proposals***

The Committee believes that NSF needs to provide a clearer definition of the relevant criteria and delimiting factors for submission of proposals to different Facilities programs. We will strive to reduce any apparent confusion about which of the Programs is responsible for specific equipment/instrumentation requests in a formal revision of the Program Guidelines, which we hope to have published before the end of this calendar year. The guidelines were last published immediately prior to a Division reorganization three years ago, and do not include reference to either the Ocean Technology Program (for technology development), which is now part of this Section, or the Major Research Instrumentation (MRI) Program, a centrally funded NSF program for which this Section has administrative responsibility within the Division of Ocean Sciences. We will try to devise

a useful roadmap, which directs a PI to the appropriate program for submission of equipment/instrumentation requests.

### ***Documentation of Program Decisions***

The COV noted that program decisions (with regard to ship operations) were generally well documented, and recognized that contacts between the Program and ship operators often were on an informal basis. In fact, because of the dynamic nature of ship operations, ongoing contacts can sometimes be on a weekly, if not daily, basis between the Program, the operator, other interested agencies, PIs and science Program Officers. We recognize that sometimes this “fog of operations” may be difficult for an external observer (such as a COV member) to understand from the written notations of already bulging Cooperative Agreement jackets. The COV recommends that, “diary notations of such contacts would greatly increase the “readability” of program jackets.” We will try to find a practical way to achieve this goal.

### **Future Emphases**

In looking to the future, the COV highlighted the changing nature of facilities support in the ocean sciences, from the relatively simple model of science supported by ships and submersibles, to a much broader array of at-sea assets, including ships, submersibles, ROVs, AUVs, cabled and buoyed observatories, drifters, gliders and potentially many other systems. The COV believes that the Division will be challenged to position its programs (in both acquisition and operation) to support these new classes of platforms, sensors and systems. We agree with the COV that it is necessary that “the Division of Ocean Sciences define this set of emerging community observational capabilities and develop a strategy for their procurement, management and support.” Indeed, we have already embarked on this journey, having developed a second generation ROV (Jason II), AUV (ABE, the Autonomous Benthic Explorer), and are in the process of working with the community in defining seafloor observatories, their construction and management, and the U.S. Ocean Observing System, through the National Oceanographic Partnership Program. We also intend to seek the advice of the Ocean Studies Board on the National Research Council on future needs for human-occupied vehicles in relation to other technologies for the exploration of the deep sea and seafloor.