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Inspection of the NASA Aerospace Safety Advisory Panel Activity No. G-96-005

March 11, 1997

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
OFFICE OF INSPECTOR GENERAL
INSPECTIONS & ASSESSMENTS

Inspection Report

SUBJECT: NASA Aerospace Safety Advisory Panel

DATE OF REPORT: 03/11/97

LOCATION: NASA Headquarters

CASE NUMBER: G-96-005

SYNOPSIS: The purpose of this inspection was to assess the continued need for the Aerospace Safety Advisory Panel (ASAP/the Panel) (See Exhibit 1 for scope and methodology). Uniformly, interviewees favored the concept of an independent and respected ASAP as a necessary and potentially vital component of NASA's program management and Congressional interface. However, we found sufficient criticism by those interviewed to recommend that:

(1) the Associate Administrator for Safety and Mission Assurance, ensure an effective balance of the Panel's membership to meet program needs; and

(2) further, the ASAP chair, with the assistance of the Office of Safety and Mission Assurance, expand the list of potentially available consultants so that additional, complementary expertise is available to enhance the relevance and value of technical recommendations.

Analyst/Investigator: Elaine T. Schwartz

Assistant Inspector General for Inspections & Assessments: David M. Cushing

Background

The ASAP, established by Congress as part of the NASA Authorization Act of 1968, Public Law 90-67 (Exhibit 2), is an independent safety review body charged with advising the NASA Administrator and Congress on safety systems and operational safety. Its establishment was precipitated by the Apollo 204 spacecraft fire in January 1967.

The February 1995 "NASA Federal Laboratory Review," directed by the National Science and Technology Council, Office of Science and Technology Policy (OSTP), included a finding that NASA programs were burdened by excessive reviews and audits. The report recommended that internal program reviews be reduced and that "duplications such as the Aerospace Safety Advisory Panel should be stopped." The task force made this statement specifically in reference to the International Space Station (ISS) program, describing the ASAP as duplicative of the ISS Independent Assessment Panel (Exhibit 3).

NASA's August 23, 1996, response to OSTP addressed general recommendations about both internal and independent reviews, but did not specifically address the ASAP.

The ASAP Concept

The ASAP is a senior advisory committee that reports to NASA and Congress. The Panel's statutory duties, as prescribed in Section 6 of the NASA Authorization Act of 1968, are to review safety studies and operations plans and to advise the Administrator on safety issues. The Panel also keeps the House Committee on Science and the Senate Committee on Commerce, Science and Transportation fully informed of its activities and recommendations. NASA managers and working level engineers believe that it is important to have a group that provides independent oversight of NASA's safety structure and operations. Such oversight from a well-respected group can furnish technical expertise and validation, surface important questions, and provide an unfiltered avenue for employee and contractor concerns. Recommendations from a prestigious external body carry great weight and often serve to focus high level attention on important issues that might otherwise be ignored or dismissed.

The ASAP

The ASAP remains a necessary and potentially vital component of NASA's program management and Congressional interface. The degree to which current and recent ASAP Panels fulfill their important role is the subject of varying perceptions. While some people voiced their respect for the Panel, a number of Center and Headquarters officials believe that the Panel's technical recommendations comprise superficial findings on issues about which managers are already aware. This observation was especially voiced with respect to ASAP recommendations regarding the ISS.

Some interviewees were critical that the Panel does not have adequate time or breadth of expertise to thoroughly study the agenda it undertakes. Others believe that the Panel focuses on areas of personal interest instead of on critical issues. Some believe the Panel's value would be enhanced through refining its focus from detailed engineering questions to safety management and process issues. Finally, many were critical of the members' excessively long association with NASA for two main reasons: (1) stable long-term membership may mean that the Panel's competencies do not change to mirror program developments; and (2) the members' long incumbencies may interfere with their independence, objectivity, and willingness to delve into areas of substance and controversy. On the other hand, some interviewees were impressed with the Panel's knowledge and experience and believed that long-term membership is essential to gaining critical program knowledge and institutional memory.

Finally, NASA managers agreed with two former Congressional staffers that the ASAP plays an important role validating safety practices and putting their imprimatur on important debates. The Panel, with its statutory mandate and high level of reporting (e.g., Congress) helps to focus attention and effect action considered necessary by NASA and/or Congressional committee members.

Most of the people interviewed, therefore, believe that the ASAP should be strengthened - not eliminated. They believe that strengthening membership is the first step to providing fresh perspectives and increased vitality. Recent additions to the Panel are a good beginning in this direction.

Panel Composition and Tenure

The statute establishing the ASAP is silent on reappointments. Between December 1967 and 1994, the governing NASA policy documents, NASA Management Instruction (NMI) 1156.14 , likewise, did not address reappointments.

More often than not, however, Panel members were appointed to a second 6-year term. In 1994, the NMI was revised to require agreement of the Administrator before a member's appointment to a second term (NMI 1156.14M). While now documented, reappointments continue to be largely routine, with 5 of the 9 members currently serving second 6-year terms. There are a total of 15 individuals serving as Panel members or as consultants. (In operation, there is little distinction between members and consultants.) Of the 15, only 6 have not served multiple appointments as both consultant and member. The 9 appointed prior to 1992 will average a total of more than 13.4 years of service when present appointments expire. This average will likely be higher as consultants' appointments must be made annually, but have traditionally been renewed for several years.

The median age for members and consultants is 70 with 7 members between the ages of 71 and 80. Eight of the 15 members are listed as retired. According to NASA records and verified by staff, the ASAP has never had a minority member in its entire 28-year history. The first and only woman was appointed 2 years ago.

Management Response

A copy of management's response to the draft report is included in this report as Appendix II.

Comment on Response #1

The OIG agrees that the panel should be comprised of the most highly qualified individuals from private industry, academia, and the government. Such a group, in the opinion of a majority of those we interviewed, should be distinguished by its diversity of experience, education, viewpoint, and longevity. A cadre of panel members with long term experience and in-depth NASA knowledge is important, but to be most effective, this group must be routinely infused with the fresh perspectives of new, diverse members.

Comment on Response #2

The OIG understands that the panel has the ultimate responsibility for staffing. This is entirely appropriate for an independent review body. We are recommending that the Office of Safety and Mission Assurance, in its administrative support role, assist the panel in locating qualified consultants.

Exhibit 1

Scope and Methodology

I&A interviewed NASA Headquarters and field center personnel from safety, program, and staff organizations, ASAP Panel members, and former Congressional committee staff. We focused our interviews on personnel from Safety and Mission Assurance offices, Space Station, and Shuttle organizations at the Johnson Space Center, Marshall Space Flight Center, and Kennedy Space Center. We also reviewed Panel reports, budgets, and other relevant documents.

Exhibit 2

★ ★ ★ ★ UNITED STATES CODE SERVICE ★ ★ ★

Lawyers Edition

All federal laws of a general and permanent nature arranged in accordance with the section numbering of the United States Code and the supplements thereto.

42 USCS

The Public Health and Welfare

§§ 2000e-6 – 2570

1996

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mittee on Commerce, Science, and Transportation" for "Committee on Aeronautical and Space Sciences".

§ 2476b. Donations for space shuttle orbiter

(a) The Administrator may accept gifts and donations of services, money, and real, personal, tangible, and intangible property, and use such gifts and donations for the construction of a space shuttle orbiter.

(b)(1) The authority of the Administrator to accept gifts or donations pursuant to subsection (a) of this section shall terminate five years after the date of the enactment of this section [enacted Oct. 30, 1987].

(2) All gifts and donations accepted by the Administrator pursuant to subsection (a) of this section which are not needed for construction of a space shuttle orbiter shall be used by the Administrator for an appropriate purpose—

(A) in tribute to the dedicated crew of the space shuttle Challenger; and

(B) in furtherance of the exploration of space.

(c) The name of a space shuttle orbiter constructed in whole or in part with gifts or donations whose acceptance and use are authorized by subsection (a) of this section shall be selected by the Administrator from among suggestions submitted by students in elementary and secondary schools.

(July 29, 1958, P. L. 85-568, Title II, § 208, as added Oct. 30, 1987, P. L. 100-147, Title I, § 115, 101 Stat. 866.)

CROSS REFERENCES

This section is referred to in 42 USCS § 2467a.

§ 2477. Aerospace Safety Advisory Panel; membership; appointment; term; powers and duties of Panel; Chairman; compensation, travel and other necessary expenses; NASA membership restriction

There is hereby established an Aerospace Safety Advisory Panel consisting of a maximum of nine members who shall be appointed by the Administrator for terms of six years each. The Panel shall review safety studies and operations plans referred to it and shall make reports thereon, shall advise the Administrator with respect to the hazards of proposed or existing facilities and proposed operations and with respect to the adequacy of proposed or existing safety standards and shall perform such other duties as the Administrator may request. One member shall be designated by the Panel as its Chairman. Members of the Panel who are officers or employees of the Federal Government shall receive no compensation for their services as such, but shall be allowed necessary travel expenses (or in the alternative, mileage for use of privately owned vehicles and a per diem in lieu of subsistence not to exceed the rates and amounts prescribed in 5 USC 5702, 5704 [5 USCS §§ 5702, 5704]), and other necessary expenses incurred by them in the performance of duties vested in the Panel, without regard to the provisions of

subchapter I, chapter 57 of title 5 of the United States Code [5 USCS §§ 5701 et seq.], the Standardized Government Travel Regulations, or 5 USC 5731 [5 USCS § 5731]. Members of the Panel appointed from outside the Federal Government shall each receive compensation at a rate not to exceed the per diem rate equivalent to the rate for GS-18 for each day such member is engaged in the actual performance of duties vested in the Panel in addition to reimbursement for travel, subsistence, and other necessary expenses in accordance with the provisions of the foregoing sentence. Not more than four such members shall be chosen from among the officers and employees of the National Aeronautics and Space Administration.

(Aug. 21, 1967, P. L. 90-67, § 6, 81 Stat. 170; June 4, 1976, P. L. 94-307, § 8, 90 Stat. 681; Jan. 2, 1986, P. L. 99-234, Title I, § 107(f), 99 Stat. 1759.)

HISTORY; ANCILLARY LAWS AND DIRECTIVES

Amendments:

1976. Act June 4, 1976, substituted "a rate not to exceed the per diem rate equivalent to the rate for GS-18" for "the rate of $100".

1986. Act Jan. 2, 1986, substituted "rates and amounts" for "rates".

Other provisions:

Promulgation of regulations and effective date of amendments made by Act Jan. 2, 1986. For provisions relating to promulgation of regulations and for the effective date of the amendments made to this section see Act Jan. 2, 1986, P. L. 99-334, Title III, § 301, 99 Stat. 1760, which appears as 5 USCS § 5701 note.

RESEARCH GUIDE

Am Jur:

70A Am Jur 2d, Space Law § 4.

UPPER ATMOSPHERE RESEARCH

§ 2481. Purpose and policy

(a) The purpose of this title [42 USCS §§ 2481 et seq.] is to authorize and direct the Administration to develop and carry out a comprehensive program of research, technology, and monitoring of the phenomena of the upper atmosphere so as to provide for an understanding of and to maintain the chemical and physical integrity of the Earth's upper atmosphere.

(b) The Congress declares that it is the policy of the United States to undertake an immediate and appropriate research, technology, and monitoring program that will provide for understanding the physics and chemistry of the Earth's upper atmosphere.

(July 29, 1958, P. L. 85-568, Title IV, § 401, as added June 19, 1975, P. L. 94-39, § 8, 89 Stat. 222.)

RESEARCH GUIDE

Am Jur:

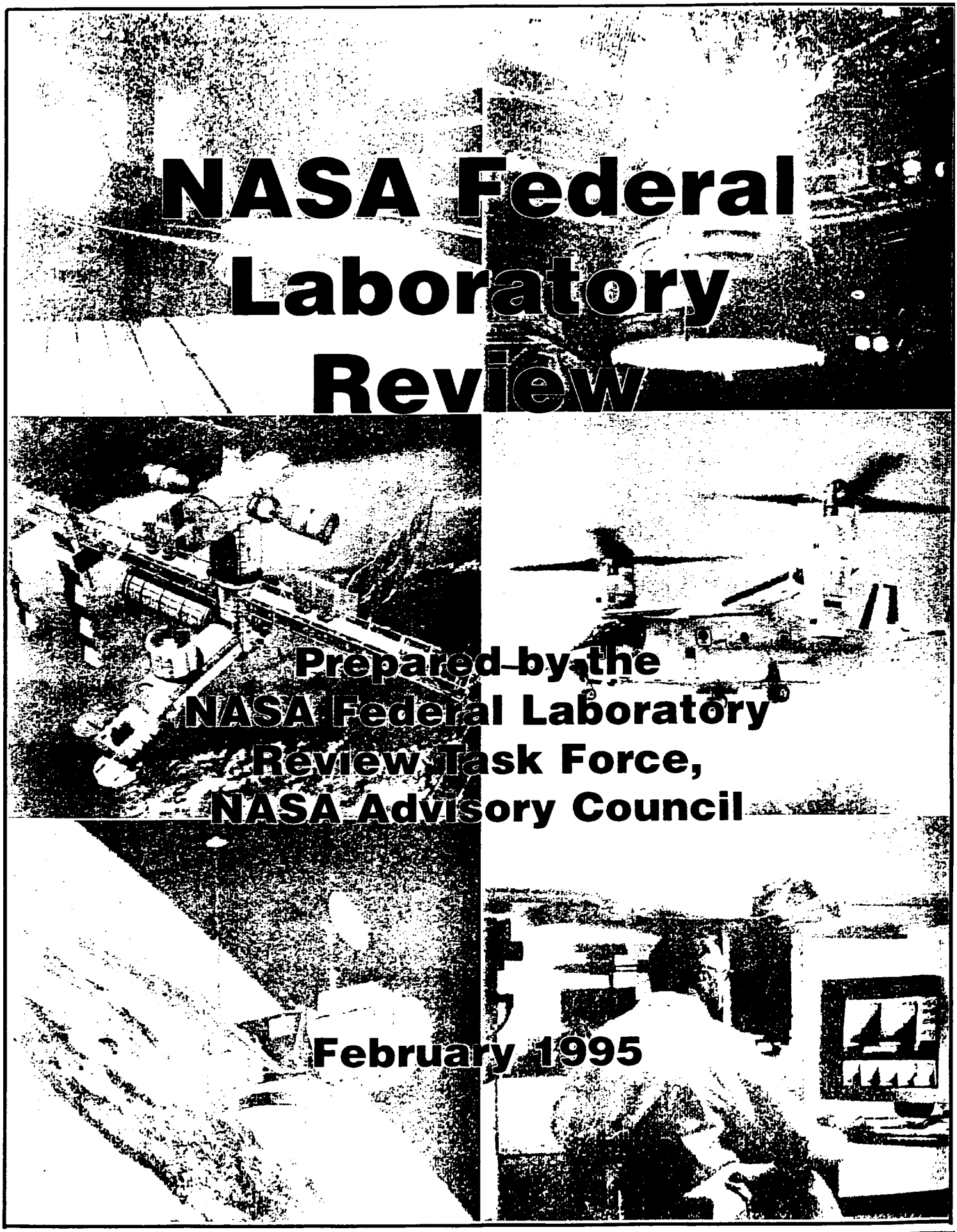
70A Am Jur 2d, Space Law § 3.

Immigration Law Service:

2 Immigration Law Service, Employment § 24:30.

Exhibit 3

NASA Federal Laboratory Review



Prepared by the
NASA Federal Laboratory
Review Task Force,
NASA Advisory Council

February 1995

Executive Orders or for its own knowledge of programs.

Some planned program reviews are based on NASA Management Instruction (NMI) 7120.4, which establishes management policies and responsibilities for major system programs and projects as well as minimum numbers of program reviews.

There are several recurring reviews, such as the Functional Review, Accounting Review, Procurement Review, Self Assessment Review, and budget review. These reviews occur once every 2 or 3 years, with the exception of the annual budget review. A budget review takes about 6 months and involves all Centers and Headquarters.

In FY94, 98 internal audits were conducted at JPL. Some were requested by JPL; others were requested by NASA.

In FY94, there were several major unplanned internal reviews that involved all the field Centers, and many of them are still in process (for example, Administrator's visit, Chief Scientist visit, Chief Engineer visit, Zero Base Review, Streamlining (National Performance Review), Project Reliance, Institutional Restructuring Review, and National Facilities Study). Similar reviews are likely to be scheduled in 1995.

External planned reviews are those that outside organizations, such as General Accounting Office (GAO), conduct on NASA activities. GAO concluded 37 reports on NASA activities in FY94. The subjects of these audits vary from "Model to Predict Global Warming" to "Position Classification." GAO is known to be working on 20 reviews in FY95, although the results of a recent GAO conference on NASA may alter this information.

In FY94, the Office of Inspector General (IG) of NASA performed 116 audits in the Centers (including JPL) and Headquarters. The subjects of the audits varied from "Methods of Determining U.S. Aeronautical Research Needs" to "NASA Accounting and Financial Information System." The IG plans to conduct 134 audits in FY95.

The Space Station alone has 22 external and internal committees identified to provide independent review, although several of these are not active. Some of these are overlapping. The congressionally mandated Aerospace Safety Advisory Panel is a time-consuming duplication of the ISSA Program Independent Assessment Panel, which provides the same service but in more depth.

A rough and incomplete summary of the reviews is:

Special Visits & Reviews (All Centers)	80
Program Reviews (All Centers)	125
GAO	40
OIG (NASA)	120
Congress	150
TOTAL	515

The bottom line is that audits and reviews are out of control.

Recommendation: **NASA's program review should follow and not exceed NMI 7120.4, unless approved by the NASA Administrator. When additional reviews are anticipated, there first must be an evaluation of past reviews on that subject and the actions which resulted. The value of the proposed review must be strongly justified prior to approval.**

It is more difficult for NASA to object to external assessments, but particularly in today's budget climate, duplications such as the Aerospace Safety Advisory Panel should be stopped. It is recommended that this topic be included in the April 15 NSTC Final Report of the Federal Laboratory System.

Improve the Ability to Attract and Retain the Best Personnel

Attract and Retain Best People

NASA will need high-quality technical managers to lead its future R&D efforts as the current management retires and moves on. It is important that Government agen-

Appendix 1

Report Distribution

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House Subcommittee on VA-HUD-Independent Agencies
House Committee on Government Reform and Oversight
House Subcommittee on National Security, International Affairs, and Criminal Justice
House Committee on Science
House Subcommittee on Space and Aeronautics

Appendix 2

National Aeronautics and
Space Administration
Headquarters
Washington, DC 20546-0001

Reply to Attn of: Q

FEB 20 1997

TO: J/Associate Administrator for Management Systems and Facilities

FROM: Q/Associate Administrator for Safety and Mission Assurance

SUBJECT: Response to Draft Report G-96-005, Inspection of the NASA Aerospace Safety Advisory Panel (ASAP)

We agree that an independent and respected ASAP is a necessary and vital component of NASA's program management and Congressional interface. We offer the following comments on the recommendations listed in the report.

Recommendation: The Associate Administrator, Office of Safety and Mission Assurance, ensure an effective balance of the Panel's membership to meet program needs.

Response: The Panel's intent has been, and will continue to be, to enlist the services of the most highly qualified individuals from private industry, academia, and the government, active or retired, regardless of gender, race, or age. Expertise in the required technical disciplines and availability to meet the time demands imposed as a Panel member or consultant are the relevant issues considered in the selection process. The Office of Safety and Mission Assurance has never experienced a situation, as inferred in the draft report, where the age of the Panel members or their longevity on the Panel has negatively impacted the Panel's effectiveness. The ASAP's wealth of aerospace experience is a valuable asset to the Agency. We believe that the substance and value of the ASAP annual reports have been exemplary, and we have never known the ASAP to shy away from controversy, especially when it comes to aerospace safety. The caliber of their annual reports is a testament to their thoroughness and objectivity.

Recommendation: Further, the Associate Administrator should expand the list of potentially available consultants so that

additional, complementary expertise is available as needed to enhance the relevance and value of technical recommendations.

Response: The panel itself has the responsibility for staffing, with the Administrator approving all appointments. The workload of the Panel has increased due to many recent Administrator assignments. For example, as a follow-on to the November 1996 "Review of Issues Associated with Safe Operation and Management of the Space Shuttle Program," the Administrator asked that the Panel's future Annual Reports address NASA's progress in meeting the 22 recommendations outlined therein. He has also asked for a review of the "third-tier" vendors for both the International Space Station and Space Shuttle programs, and for the Panel to closely monitor the Space Shuttle program's transition to the Space Flight Operations Contract. Currently, the Panel is attempting to augment its complement with qualified consultants.

We appreciate the opportunity to comment on this draft report.

Frederick D. Gregory