

THE WHITE HOUSE
WASHINGTON

October 1, 1997

MEMORANDUM FOR THE PRESIDENT

FROM: PHIL CAPLAN *PC*

SUBJECT: Cassini Mission to Saturn -- nuclear launch safety approval

Jack Gibbons has sent you a lengthy memo with attachments informing you of his decision to approve the launch of NASA's Cassini spacecraft, which he is authorized to do under a longstanding Presidential Directive. The decision is somewhat controversial. Because the spacecraft will travel so far from the Sun, it must use generators powered by 72.9 pounds of plutonium dioxide rather than solar panels. The use of plutonium has provoked controversy and does present risks, but they are minuscule. There have been recent public protests and 60 Minutes is scheduled to air a story on the Cassini this weekend.

Background on process. There are two processes for approving the use of radioactive material in a space launch. The first, under the National Environmental Policy Act, calls for submission of an Environmental Impact Statement (EIS) after interagency review. EPA submitted the EIS in June 1995, which approved of the launch. The second process is outlined in Presidential Directive NSC-25. Under this PD, DOE conducted a seven-year comprehensive Safety Analysis Report. After a thorough interagency review, OSTP conducted its own review of the risks and also obtained outside independent expert opinions. Jack is now ready to approve NASA's request to launch. In sum, the analyses supports the view that the plutonium, which is in the form of a hard ceramic, is so well encased that under most conceivable launch vehicle accident scenarios, no plutonium would be released.

Risks. However, there are three potential accident scenarios that could lead to some release of plutonium, although not in ways that are likely to result in anyone receiving more than an extremely small exposure.

The *first scenario* involves a launch failure resulting in a crash on or near the launch pad. A small amount of plutonium (1 gram) would disperse and be respirable over the next 50 years in an amount roughly equivalent to the amount of natural background radiation an average person receives in a single day.

The *second scenario* involves a launch vehicle or upper stage malfunction which leads to orbital reentry and a crash on a hard surface. The amount of plutonium released would be small (1 gram) but entry could occur anywhere in the world. Because the geographic area is less predictable, the expected radiation dose to an average person over 50 years would be slightly higher than under the first scenario, but still very small -- roughly the amount of a full set of dental x-rays.

The *third scenario* involves an extremely unlikely inadvertent reentry during a maneuver in 1999 when the spacecraft loops around the earth on a gravity assist trajectory to Saturn, reenters the atmosphere and burns. The amount of plutonium released would be tiny and equivalent, over a 50-year period, to 15,000 times less than the natural background radiation received by an average individual. However, very pessimistic dosage models predict 120-1,500 cancer deaths from such a re-entry over 50 years. Over the same period, nearly a billion people will die from cancer.

Recommendation. Jack concludes that the risks of accidental release of radioactive material in the course of the Cassini mission are minimal. The risks are comparable to NASA's Galileo mission to Jupiter, launched in 1989, which also carried plutonium. The Vice President's staff and NSC have reviewed these materials; all concur in Jack's recommendation to approve the launch. Podesta and Rahm concur. Therefore, if you do not object, Jack will approve the launch, consistent with NSC/PD-25. The launch is scheduled for October 13.

235832

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20502

'97 SEP 22 PM4:18

September 19, 1997

MEMORANDUM FOR THE PRESIDENT

FROM: JOHN H. GIBBONS 

SUBJECT: Decision on Cassini Nuclear Launch Safety Approval

Purpose

To inform you of my intention to approve the launch of NASA's Cassini spacecraft under the provisions of Presidential Directive NSC-25 (PD/NSC-25) for nuclear launch safety approval.

Background

NASA's Cassini spacecraft is currently scheduled for launch on October 13, 1997. The launch "window" can be extended to November 15, 1997, with a secondary launch opportunity between November 28, 1997 and January 11, 1998. The spacecraft will reach Saturn in July 2004 and will carry out a four-year exploration of the planet, its rings and its moons, particularly focusing its attention on Titan, the only moon in the solar system with an appreciable atmosphere. As the best-instrumented interplanetary spacecraft ever launched, Cassini will provide the most complete information about another planet system ever obtained. Since its inception in 1989, the Cassini mission has a long record of support by Congress, by successive Administrations, by its international partners from the European Space Agency, the Italian Space Agency, and by the international science community. This \$3.5B mission represents one of NASA's most significant international space science missions, and involves hardware from Europe and over 120 scientists from 16 European countries.

Because Cassini must operate at such a tremendous distance from the Sun (nearly a billion miles away where sunlight is less than one percent as intense as it is at Earth), generating electrical power for this spacecraft by using solar panels is simply not feasible. Therefore, NASA's Cassini spacecraft will use three radioisotope thermoelectric generators (RTGs) powered by 72.9 pounds of plutonium dioxide. Over the last 30 years, NASA has successfully used RTGs on 15 missions, including Apollo, Pioneer, Voyager, and Viking missions. The same type of RTG was used in previous NASA missions to the outer solar system. In 1989, the Galileo mission to Jupiter was powered by two plutonium RTGs identical in design to those on the Cassini spacecraft. In 1990, the Ulysses mission to observe the polar regions of the Sun was also powered by a similar RTG.

Discussion

For missions that carry significant amounts of radioactive materials, like Cassini, the two separate and distinct processes which govern its launch include: the National Environmental Policy Act (NEPA) compliance process for environmental impact statements; and the Executive Branch nuclear launch safety approval process required by paragraph 9 of Presidential Directive

(PD) National Security Memorandum number 25 (NSC-25), dated December 14, 1977, and updated May 8, 1996 (TAB A).

A Final Environmental Impact Statement (EIS) for completion of preparations, launch, and operation of the Cassini mission was completed by filing the EIS with the EPA in June, 1995, and Final Supplemental Environmental Impact Statement (SEIS) was completed and filed with the EPA in June 1997, with NASA signing a Record of Decision (NASA's final agency action under NEPA) in August 1997. The EIS and SEIS were prepared in accordance with the Guidelines of the Council on Environmental Quality (40 CFR 1500 et seq.) and applicable NASA regulations (14 CFR 1216 et seq.).

Consistent with PD/NSC-25, the Department of Energy has prepared over the past seven years a comprehensive and thorough Safety Analysis Report. That analysis draws on over 35 years of design, engineering and safety analysis, including the testing of RTGs to prove that they withstand severe physical conditions associated with launch accidents and reentry from orbit. In addition, an Interagency Nuclear Safety Review Panel, including safety experts from five agencies (the Department of Energy, NASA, the Department of Defense, the Environmental Protection Agency, and a technical advisor from the Nuclear Regulatory Commission), conducted a comprehensive evaluation of the Department of Energy's safety analysis and documented their findings in the Safety Evaluation Report. Beyond these two reports, to ensure that we reviewed all safety aspects of the launch, I have also obtained outside independent expert opinions from Dr. Richard Wilson of Harvard and Dr. William Kastenberg of the University of California. My staff at OSTP and I have also thoroughly reviewed these reports.

Based on the results of the interagency safety reviews, on August 15, 1997 NASA Administrator Dan Goldin requested nuclear launch safety approval (TAB B) through my office. The Department of Defense, the Environmental Protection Agency, and the Department of Energy have written to the NASA Administrator confirming that, in their view, the safety analysis conducted for the mission is comprehensive and thorough. Copies of these letters are attached. We have summarized the safety and environmental analyses conducted by the Department of Energy and NASA, along with the results of the reviews by the interagency team and OSTP (TAB C). In sum, the analysis supports the view that the plutonium is in the form of a hard ceramic and so well encased in multiple layers of iridium and graphite shielding that under most conceivable launch vehicle accidents, no plutonium would be released. However, there are three potential accident scenarios that could lead to some release of plutonium, although none in ways that are likely to result in anyone receiving more than an extremely small exposure.

The first accident scenario involves a Titan IV/Centaur launch vehicle failure resulting in the Cassini spacecraft impacting on concrete or steel surfaces near the launch pad. The NASA and Department of Energy safety documentation states that the estimated probability of this occurring is 1 in 1,400. The amount of plutonium (if any) released would be small and almost entirely confined to government property at Kennedy Space Center and Cape Canaveral Air Station. The amount of plutonium that might be respirable would be less than one gram, and

thus the expected radiation dose to a person in the exposed population (estimated at 100,000 people) would be 2 millirem total over 50 years. This is roughly equivalent to the amount of radiation a person would receive during a round-trip airline flight at 35,000 feet altitude from New York to Los Angeles, or about the dose an average American receives from "natural" background radiation in a day. It is extremely unlikely that this would lead to any adverse health effects.

The second accident scenario involves a launch vehicle or upper stage malfunction which leads to orbital reentry of the spacecraft and impact of an RTG module on a hard surface. The probability of such an accident with a release is estimated in the safety documentation to be about 1 in 500. Under this scenario, the Department of Energy's conservative analysis assumed that minute cracks in the iridium casing surrounding the plutonium could potentially allow release of some plutonium. The amount of plutonium released would be very small and confined to a limited area, though this area could be practically anywhere in the world. As with the launch area accident, the amount of respirable plutonium would be very small (less than one gram), and thus the expected radiation dose to a person in the exposed population (estimated at 5,000 people) would be less than 20 millirem total over 50 years. This is roughly equivalent to a full set of dental X-rays, and it is extremely unlikely that this would lead to any adverse health effects. The INSRP evaluation concluded that plutonium would not even be released in this accident scenario.

A third accident scenario involves an extremely unlikely inadvertent reentry during a maneuver in 1999 when the spacecraft loops back around the Earth on a gravity assist trajectory to Saturn. The Cassini mission is designed to ensure that the probability of this occurring is less than 1 in 1,000,000. Because the maximum swingby velocity (over 42,000 miles per hour) exceeds the demonstrated RTG re-entry survival performance, it is possible that about 1 to 20 pounds of vaporized plutonium could be released into the upper atmosphere and globally distributed. Over a 50-year period, the average individual radiation dose from this unlikely accident would be 15,000 times less than the natural background radiation received during the same period. In effect, over a 50 year span, it would be the equivalent of adding one more day's exposure to natural background radiation. No data are available to predict direct effects from such small radiation doses. However, using a pessimistic dose-response relationship, it is possible to calculate that this level of additional radiation exposure could result in between 120 and 1,500 cancer deaths in the world's population over a 50-year period. Over that same period, nearly a billion people are projected to die of cancer due to a variety of other unrelated causes. I believe the most reasonable expectation is that exposure to such a low level of additional radiation would produce no detectable cancer deaths.

Despite the low probability of an accident that results in a radiological hazard, NASA has organized a conservative emergency contingency plan in coordination with the Department of Energy (DOE), the Department of Defense (DoD), the Department of State (DOS), the Federal Emergency Management Agency (FEMA), the Environmental Protection Agency (EPA), the State of Florida, Brevard County and other local authorities. In addition, NASA has discussed

these plans with the relevant state and local government authorities, including Governor Lawton Chiles of Florida. NASA is completing the coordination planning with DOE, DoD, DOS, FEMA, and EPA to support a response to late launch accidents (i.e., an accident prior to or after the spacecraft and its upper stage reach Earth orbit) or a reentry accident during the Earth swingby. A summary of the radiological emergency response planning activities for Cassini is attached (TAB D). Responses to questions (RTQs) and proposed Administration talking points (TAB E) are also attached.

The staff of the National Security Council and the Office of the Vice President have reviewed this memorandum and the attached explanatory material. The Council on Environmental Quality has reviewed the materials and had no comments.

Summary

Overall, the Cassini mission risks are comparable to the risks calculated for NASA's Galileo mission to Jupiter, which was launched on the Space Shuttle in 1989, carried two RTGs like Cassini's, and performed two Earth swingbys. In relative terms, the risks from the Cassini mission are thousands to millions of times less than the risks associated with airplane crashes, fires, dam failures, and natural phenomena (such as natural chemical carcinogens, background radiation, earthquakes, floods, tornadoes, and hurricanes).

On the basis of all the safety reviews, I have concluded that the risks of accidental release of radioactive material in the course of the Cassini mission are minimal, and that the precautions against radioactive contamination of the environment or health hazards to human populations are fully adequate.

Therefore, in my capacity as Director of the OSTP, and consistent with NSC/PD-25, I intend to approve the launch request, as per the enclosed letter to the NASA Administrator (Enclosure).

Attachments:

- Tab A—NSC/PD-25 “. . . Launch of Nuclear Systems into Space”
- Tab B—Request Letter from NASA Administrator
- Tab C—Description of Cassini Safety and Environmental Analyses
- Tab D—Radiological Emergency Response Planning
- Tab E—RTQs and Administration Talking Points

Enclosure

Letter to NASA Administrator

Clinton Presidential Records Digital Records Marker

This is not a presidential record. This is used as an administrative marker by the William J. Clinton Presidential Library Staff.

This marker identifies the place of a tabbed divider. Given our digitization capabilities, we are sometimes unable to adequately scan such dividers. The title from the original document is indicated below.

A

Divider Title: _____

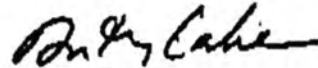
FOR OFFICIAL USE ONLY

2

Paragraph 9 of NSC/PD-25 is replaced by the paragraph below:

9. A separate procedure will be followed for launching nuclear systems. An environmental impact analysis or nuclear safety evaluation report, as appropriate, will be prepared. The President's approval is required for launches of spacecraft utilizing reactors and other devices with a potential for criticality and radioactive sources containing total quantities greater than 1,000 times the A_2 value listed in Table I of the International Atomic Energy Agency's Safety Series No. 6, Regulations for the Safe Transport of Radioactive Materials, 1985 Edition (as amended 1990). Launch of sources containing quantities greater than 0.1 percent of the A_2 value from this table will be forecasted quarterly to the Office of Science and Technology Policy (OSTP). This report is for information and is not intended to introduce a new approval procedure. An ad hoc Interagency Nuclear Safety Review Panel consisting of members from the Department of Defense, Department of Energy, National Aeronautics and Space Administration and the Environmental Protection Agency, will evaluate the risks associated with mission requiring the President's approval and prepare a Nuclear Safety Evaluation Report. The Nuclear Regulatory Commission will participate as a technical advisor to the panel as appropriate. The head of the sponsoring agency will request the President's approval for the flight through the Office of Science and Technology Policy. The Director is authorized to render approval for such launchings, unless he considers it advisable to forward the matter to the President for a decision.

All other paragraphs of NSC/PD-25 (1977) remain unchanged and in force



Anthony Lake
Assistant to the President
for National Security Affairs

FOR OFFICIAL USE ONLY
NATIONAL SECURITY COUNCIL
DISTRIBUTION RECEIPT

LOG 9620379
DATE 08 MAY 96

Clinton Presidential Records Digital Records Marker

This is not a presidential record. This is used as an administrative marker by the William J. Clinton Presidential Library Staff.

This marker identifies the place of a tabbed divider. Given our digitization capabilities, we are sometimes unable to adequately scan such dividers. The title from the original document is indicated below.

B

Divider Title: _____

National Aeronautics and
Space Administration
Office of the Administrator
Washington, DC 20546-0001



AUG 15 1997

The Honorable John H. Gibbons
Assistant to the President
for Science and Technology
Executive Office of the President
Washington, DC 20502

Dear Dr. Gibbons:

In accordance with paragraph 9 of Presidential Directive/National Security Council Memorandum (PD/NSC-25), dated May 8, 1996, NASA requests nuclear launch safety approval of the Cassini mission.

The launch is to take place at the U.S. Air Force's Cape Canaveral Air Station during either the primary launch opportunity of October 6 through November 15, 1997, or a secondary launch opportunity occurring from November 28, 1997, through January 11, 1998. The objective of the mission is to conduct a 4-year, close up study of the Saturnian system, including Saturn's atmosphere and magnetosphere, its rings and several moons. As the best-instrumented spacecraft ever sent to another planet, Cassini will produce the most complete information about a planet system ever obtained, including insights on profound issues ranging from the origin of the planets to the beginning of life on Earth. One of several major scientific goals of the mission is to thoroughly characterize the large moon Titan. Titan is thought to resemble a frigid, primordial Earth. An understanding of the chemistry of Titan's atmosphere may provide a key to understanding the evolution of early life on Earth. The mission is an excellent example of international cooperation, showcases new technology that will help other space ventures, and will inspire people to learn more about science, engineering and technology.

Three Radioisotope Thermoelectric Generators (RTG's) and 117 Radioisotope Heater Units (RHU's) will be used for the Cassini mission. RTG's and RHU's are the product of more than 35 years of research and development by government and industry. Over that time, there has been extensive testing and analysis to understand and minimize the risks and assure the safety of using RTG's and RHU's. The Department of Energy (DOE) has prepared and approved the Cassini Safety Analysis Report (SAR), and an Interagency Nuclear Safety Review Panel has developed a Cassini Safety Evaluation Report (SER).

I have been briefed and have considered the information contained in these reports. The reports are enclosed.

NASA, DOE, the Department of Defense (DOD), and the Environmental Protection Agency (EPA) agree that the SAR and SER are comprehensive and thorough. They also agree that in the instances where different modeling assumptions were used in the two analyses, the results are not significantly different and satisfactorily bound the potential radiological consequences and risks of the Cassini mission. Those risks are comparable to risks of previous missions for which nuclear launch safety approvals were granted. A copy of the letters from DOE, DOD, and EPA are enclosed.

Based on the results of the safety reviews and all of the foregoing, I have determined that the scientific benefits to be gained from the mission outweigh the risks. Therefore, I recommend nuclear launch safety approval of the Cassini mission.

Sincerely,

A handwritten signature in black ink, reading "Daniel S. Goldin". The signature is written in a cursive, flowing style.

Daniel S. Goldin
Administrator

Enclosures



The Secretary of Energy

Washington, DC 20585

August 5, 1997

Mr. Daniel S. Goldin
Administrator
National Aeronautics and Space Administration
600 Independence Avenue, S.W.
Washington, D.C. 20546

Dear Mr. Goldin:

The Department of Energy's Office of Nuclear Energy, Science and Technology has conducted a safety analysis of the proposed launch of the Cassini spacecraft containing Department-provided Radioisotope Heater Units and Radioisotope Thermoelectric Generators. In addition, the Interagency Nuclear Safety Review Panel has conducted an independent safety evaluation of nuclear risks of this mission. The Panel consists of coordinators from the Department of Energy, the National Aeronautics and Space Administration, the Department of Defense, and the Environmental Protection Agency. The Nuclear Regulatory Commission provides a technical advisor. The Office of Environment, Safety and Health represents the Department of Energy on the panel.

The two analyses are comprehensive and thorough. In some instances different modeling assumptions were used in the two analyses; however, the results are close to each other and satisfactorily bound the potential radiological consequences and risks of this mission. The calculated risks for the Cassini mission are comparable to those of prior radioisotope-powered missions for which launch approvals were granted.

We will continue to cooperate with personnel at the Kennedy Space Center and elsewhere on launch support activities. The Department is ready to assist you in advising the Office of Science and Technology Policy in preparation for a final launch decision.

The fine spirit of cooperation that has characterized previous National Aeronautics and Space Administration and Department projects has prevailed throughout this effort. We look forward to continuing this close working relationship on future National Aeronautics and Space Administration missions.

Sincerely,

A handwritten signature in dark ink, appearing to read "Federico Peña", is positioned below the word "Sincerely,".

Federico Peña



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

AUG 11 1997

OFFICE OF
RESEARCH AND DEVELOPMENT

Mr. Daniel S. Goldin
Administrator
National Aeronautics and Space Administration
600 Independence Avenue, S.W.
Washington, D.C. 20546

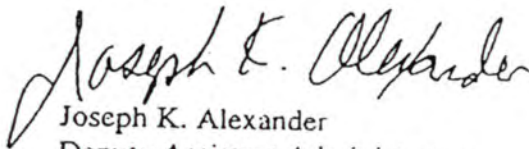
Dear Mr. Goldin:

The U.S. Environmental Protection Agency (USEPA's) Office of Research and Development (ORD) has reviewed the safety analysis of the proposed launch of the Cassini spacecraft containing Radioisotope Heater Units and Radioisotope Thermoelectric Generators. This safety analysis was prepared by the Department of Energy's Office of Nuclear Energy, Science and Technology. In addition, the USEPA has participated in the Interagency Nuclear Safety Review Panel which conducted an independent safety evaluation of nuclear risks of this mission. The Panel consists of coordinators from the Department of Energy, the National Aeronautics and Space Administration, the Department of Defense, and the Environmental Protection Agency. The Nuclear Regulatory Commission provides a technical advisor. G. Jerry Martin, Captain, USPHS, of the Office of Air and Radiation represents the USEPA on the Panel.

Our review has determined that the two analyses are comprehensive, thorough, and well presented. Despite the use of a few different modeling assumptions, the results of the two analyses are essentially the same within the uncertainty of the method used and satisfactorily bound the potential radiological consequences and risks of this mission. In addition, the calculated risks for the Cassini mission are comparable to those of prior radioisotope-powered missions for which launch approvals were granted. The Agency is ready to assist you in advising the Office of Science and Technology Policy regarding the adequacy of the analysis and the radiologic safety of the mission in preparation for a final launch decision, should you require our support.

The fine spirit of cooperation that has characterized previous National Aeronautics and Space Administration and USEPA interactions has prevailed throughout this effort. We look forward to continuing this close working relationship.

Sincerely,

A handwritten signature in cursive script, reading "Joseph K. Alexander". The signature is written in dark ink and is positioned above the printed name and title.

Joseph K. Alexander
Deputy Assistant Administrator
for Science



NUCLEAR AND CHEMICAL
AND BIOLOGICAL DEFENSE
PROGRAMS

ASSISTANT TO THE SECRETARY OF DEFENSE
3050 DEFENSE PENTAGON
WASHINGTON, DC 20301-3050

AUG 12 1997

The Honorable Daniel S. Goldin
Administrator
National Aeronautics and Space Administration
600 Independence Avenue, S.W.
Washington, DC 20546-0001

Dear Mr. Goldin:

On July 31, 1997, Mr. Earle Huckins, your Deputy Associate Administrator for Space Science, requested our views on the launch of the Cassini mission to Saturn on October 6, 1997. The DoD has reviewed the Final Safety Analysis Report (FSAR) on the Cassini mission and the information prepared independently by the Interagency Nuclear Safety Review Panel.

The DoD finds that the safety evaluation was thorough and that the radiological risk posed by the launch and deployment of NASA's Cassini mission is acceptable. Therefore, the Department is prepared to support you in obtaining Presidential launch approval through the office of Science and Technology Policy.

Should the mission be approved, the Department will continue to support you in the launch readiness and launch activities at Cape Canaveral Air Station.

Harold P. Smith, Jr.

Clinton Presidential Records Digital Records Marker

This is not a presidential record. This is used as an administrative marker by the William J. Clinton Presidential Library Staff.

This marker identifies the place of a tabbed divider. Given our digitization capabilities, we are sometimes unable to adequately scan such dividers. The title from the original document is indicated below.

C

Divider Title: _____

DESCRIPTION OF CASSINI MISSION SAFETY AND ENVIRONMENTAL ANALYSES AND REVIEWS

INTRODUCTION

There are two separate and distinct processes which govern the launch of missions carrying nuclear materials such as Cassini. These processes are: the National Environmental Policy Act (NEPA) compliance process for environmental impact statements; and the Executive Branch nuclear launch safety approval process required by paragraph 9 of Presidential Directive (PD) National Security Memorandum number 25 (NSC-25), dated December 14, 1977, and updated May 8, 1996.

A Final Environmental Impact Statement (EIS) for completion of preparations, launch, and operation of the Cassini mission was completed by filing the EIS with the EPA in June, 1995, and Final Supplemental Environmental Impact Statement (SEIS) was completed and filed with the EPA in June 1997, with NASA signing a Record of Decision (NASA's final agency action under NEPA) on August 12, 1997. The EIS and SEIS were prepared in accordance with the Guidelines of the Council on Environmental Quality (40 CFR 1500 et seq.) and applicable NASA regulations (14 CFR 1216 et seq.).

Paragraph 9 of PD NSC-25 states in part "An ad hoc Interagency Nuclear Safety Review Panel consisting of members from the Department of Defense, Department of Energy, National Aeronautics and Space Administration and the Environmental Protection Agency, will evaluate the risks associated with the mission requiring the President's approval and prepare a nuclear Safety Evaluation Report...The head of the sponsoring agency will request the President's approval for the flight through the Office of Science and Technology Policy. The Director is authorized to render approval for such launchings..." A request for nuclear launch safety approval of the Cassini mission was submitted by NASA on August 15, 1997, to the Director, Office of Science and Technology Policy.

The following is a summary of the Cassini mission, its purpose, and the significant environmental issues identified in the safety and environmental impact analysis processes.

BACKGROUND ON THE CASSINI MISSION

The Cassini mission is an international cooperative effort being planned by NASA, the European Space Agency (ESA), and the Italian Space Agency (ASI) to explore the planet Saturn and its environment. The mission involves a 4-year tour of Saturn, its atmosphere, moons, rings, and magnetosphere by the Cassini spacecraft, which consists of the Orbiter and the detachable Huygens Probe. The Cassini mission is part of NASA's program for exploration of the solar system. The goal of the program is to understand the birth and evolution of the solar system. Initially, this program concentrated on flyby or reconnaissance-type missions to the outer solar system. With the launch of the Galileo spacecraft in 1989, the program began its transition to exploration-type missions to the outer planets using orbiters and atmospheric probes. The Cassini mission represents a rare opportunity to gain significant insights into major scientific questions about the formation of the solar system and the conditions that led to life on Earth, in addition to a host of questions specific to the Saturn system. As the best instrumented probe ever

sent to another planet, Cassini will produce the most complete information about a planet system ever obtained.

Chief among the scientific goals is a thorough characterization of the large moon, Titan, a world thought to resemble a frigid, primordial Earth. Much of this characterization will be accomplished by the European Space Agency's Huygens Probe, which will be released from the main Cassini orbiter to descend by parachute through Titan's opaque atmosphere. During this descent, instruments mounted on the probe will directly sample the atmosphere and determine its composition. The surface of Titan may be solid ice or rock, or it may hold shallow seas of liquid ethane or methane. The descending probe will gather data on Titan's exotic landscape and could briefly return information, including images, directly from the surface. Like Earth, Titan has a nitrogen-rich atmosphere. Complex organic molecules make up the haze that clouds Titan's surface from view. It is possible that over billions of years, the rain of complex organic molecules has built up a deep, brownish-orange sludge on Titan's surface. This rain of organic molecules could be similar to what happened on Earth when life originated on our planet. For this reason, understanding the chemistry of Titan's atmosphere may be key to understanding the evolution of early life on Earth.

In addition to the Huygens Probe, the Titan studies will be carried out by the Cassini orbiter's imaging radar, which passes signals through clouds or atmospheric haze and scans the surface with radar pulses. Characteristics of the reflected radar signals are processed to create detailed images of the terrain. Imaging radar has been used to great advantage in mapping cloud-covered regions of the Earth where other mapping instruments cannot "see" the surface, and was used on NASA's Magellan spacecraft to produce a global terrain map of cloud-shrouded Venus.

A Cassini instrument designed by the Applied Physics Laboratory at Johns Hopkins University will allow the first-ever imaging of a planet's magnetic field. The Magnetosphere Imaging Instrument (MIMI) will obtain images of the plasma and radiation surrounding Saturn and enveloping its moons, including Titan. MIMI will observe the glow of Titan's exosphere due to the bombardment by high-speed protons trapped in Saturn's magnetic field. This pioneering investigation will open a new observational window in the study of planetary magnetic fields, including Earth's. Despite the spacecraft's long travel time to Saturn, Cassini is likely to produce the first images of any magnetosphere in the solar system.

Saturn's rings are another principal target for study by Cassini. Explorations by the Voyager 1 and 2 spacecraft showed the rings to be made up of thousands of individual rings. The rings themselves were found to be largely composed of ice particles ranging in size from sugar grains to small houses. Slight color variations indicate the rings include some rocky material. Even the short-term Voyager studies showed a wide range of unexplained phenomena in the rings, including various wave patterns, small and large gaps, clumping of material and small, so-called "moonlets" embedded in the rings. Long-term, close-up observations of the rings by Cassini will help resolve whether the rings are material left over from Saturn's original formation, or whether they are the remnants of one or more moons shattered by comet or meteor strikes. Applied to larger scale, disk-shaped systems, the detailed studies of Saturn's rings proposed for Cassini will provide important contributions to theories about the origin and evolution of the dust and gas from which the planets first formed. Additional studies of the Saturnian system as a microcosm

may be applicable to examinations of even larger disk systems so common in the universe, including our own spiral galaxy, the Milky Way.

Among the icy satellites Cassini will explore is Enceladus, made entirely of water ice with few indications of impact craters on its surface. Cassini will determine if Enceladus has some internal heat source that melts the ice enough to erase impact craters. It will search Enceladus for small, geyser-like volcanoes; some scientists suspect such volcanoes may shoot ice particles into space, where they are captured by Saturn's gravity and made part of the outer E-ring. The moon Iapetus is another subject for detailed study because of its unique surface: half the moon is covered with a snow-bright substance, while the other half is covered with material as dark as asphalt and thought to be complex organic material. Cassini will help determine the surface composition of Iapetus, discover the nature of the dark material and determine whether it came from within the moon or was deposited from another source.

BACKGROUND ON THE SAFETY AND ENVIRONMENTAL ANALYSES CONDUCTED BY NASA AND THE DEPARTMENT OF ENERGY (DOE)

The Cassini spacecraft will carry three Radioisotope Thermoelectric Generators (RTGs) that use the heat from the decay of plutonium dioxide fuel to generate electric power for the spacecraft and its instruments. The spacecraft will use 117 Radioisotope Heater Units (RHUs), also containing plutonium dioxide, to generate heat for controlling the thermal environment onboard the spacecraft and several of its instruments. The U.S. Department of Energy (DOE) supplied the RTGs and RHUs to NASA but will always retain ownership of them.

NASA regulations at 14 CFR 1216.305(c)(3) require an EIS for a nuclear system for propulsion or power generation (other than millicurie quantities of radioactive material or small heaters). The Cassini EIS is a "payload" EIS; that is, it concentrates on potential environmental impacts associated with the launch of the payload (i.e., the Cassini spacecraft). A Final Environmental Impact Statement (EIS) for completion of preparations, launch, and operation of the Cassini mission was completed by filing the EIS with the EPA in June, 1995. A Final Supplemental Environmental Impact Statement (SEIS) was completed and filed with the EPA in June 1997, with NASA signing a Record of Decision (NASA's final agency action under NEPA) on August 12, 1997. This Final SEIS reflected the most recent analysis presented in the DOE Safety Analysis Report (SAR), which was made available to the public.

With respect to the payload, there are no expected environmental impacts from normal operation of the RTGs and RHUs. The only impacts could result from the unlikely accidental release of plutonium dioxide from the RTGs and RHUs. For more than 35 years, the United States has developed an extensive base of data and experience on the design and operation of RTGs and RHUs, having flown 26 missions. Materials have been chosen and designs selected to contain or immobilize the nuclear material in cases of an accident. For instance, the RTG and RHU designs employ at least three stages of containment of the plutonium dioxide. Plutonium only presents a hazard if it gets into the body and remains there for an extended period of time. The oxide form of the fuel was selected because it is a chemically stable ceramic; it is not likely to fracture into small respirable particles; and it is insoluble in water, so it is not likely to enter the food chain if released to the environment.

The Department of Energy (DOE), which provides the RTGs and RHUs to NASA, also conducts the safety testing and analysis program to ensure the safe behavior of the RTG and RHU under all possible accident conditions. The DOE maintains extensive facilities just for this purpose. The analysis proceeds as follows. First, NASA defines the launch vehicle characteristics, the mission profile, and the various accident scenarios and environments which could occur during the mission and the probability of their occurrence. Second, DOE determines the response of the RTG and RHU under the various accident conditions, especially whether an accident could cause a release of material (i.e., the "source term" or quantity and characteristics of released material, and the conditional probability of release given the accident occurs). Lastly, if there were to be a release, DOE determines the transport, deposition and health and environmental impact of such a release. The results of the DOE analyses are contained in the separate RTG and RHU SARs which, for the Cassini mission, were approved on August 5, 1997.

The Cassini SAR incorporates methods of probabilistic risk analysis as recommended by the Nuclear Regulatory Commission, the National Research Council, and the engineering societies. For instance, ranges of values were used for key parameters to reflect uncertainty in the value of the parameters and the range of views within the technical community. The range of site-specific meteorological conditions used in the analyses (available to transport released material) spanned the climatological conditions of the launch period. Finally, the analysis used a Monte Carlo technique to combine random selections from the various distributions of parameters, meteorological conditions, and the complete distribution of source terms to arrive at an overall distribution of the consequences of an accident versus the probability of that consequence.

RESULTS OF THE ANALYSIS

The analyses demonstrated that the risks of the Cassini mission are small. The chances of an accidental release of nuclear material are remote. And even in the rare event of a release, the radiological consequences are quite limited. The analysis reveals that there are three accident scenarios which can lead to release of nuclear material:

1. Total Titan IV launch vehicle destruct accidents from -94 minutes to +40 seconds of the mission (pre-launch and early launch mission segments).
2. A malfunction which leads to orbital reentry of the spacecraft and impact of an RTG module on hard surfaces from +206 seconds to Earth escape at about +40 minutes (late launch mission segment).
3. An inadvertent atmospheric reentry of the Cassini spacecraft during the Earth gravity assist maneuver which leads to a release of nuclear material in the upper atmosphere and impacts of RTG components on land rather than water.

During pre-launch cryogenic fuel loading of the Centaur upper stage through the first 40 seconds of a mission, a Titan IV launch vehicle malfunction will lead to a total launch vehicle destruct either by activation of the Automatic Destruct Systems or the Command Shutdown and Destruct System. These accident scenarios lead to nuclear material releases from ground impact of RTGs and RHUs attached to the spacecraft and RTG components separated from their thermoelectric generators. Beyond 40 seconds through 680 seconds of the mission, the RTGs, RTG

components, and RHUs would fall in the deep ocean. None of the accident environments during the pre-launch or early launch segments are predicted to cause an in-air release of nuclear materials.

Orbital decay reentry accidents would not be expected to result in significant health or environmental impacts because the RTG modules and RHUs are designed to survive these reentry conditions. Small quantities of nuclear material could be released when an RTG module or RHU impacts on hard surfaces.

Inadvertent reentry during the Earth Gravity Assist swingby would occur at a speed of 19.4 km/s (about 44,000 mph) and would cause some RTG modules and RHUs to fail during the reentry heat pulse. A few RTG modules could fail both the aeroshell and graphite impact shell (GIS) and cause some release and vaporization of nuclear materials in the stratosphere; most RTG modules and GISs survive atmospheric reentry but could release nuclear material if they strike land rather than water.

The EIS, SEIS and the SARs for the Cassini mission provide the basis for and document a wide range of quantitative measures of the impacts and risks for proceeding with the mission. Key overall measures are summarized in the table below:

Mission Segment	Total Probability of Release	Mean Health Effects	Risk	Land Area (km ²) Contaminated Exceeding 0.2 μ Ci/m ²	Average Individual Risk
Pre-Launch	5.2×10^{-5}	0.11	5.5×10^{-6}	1.5	5.5×10^{-11}
Early Launch	6.7×10^{-4}	0.082	5.5×10^{-5}	1.6	5.5×10^{-10}
Late Launch	2.1×10^{-3}	0.044	9.2×10^{-5}	0.06	1.8×10^{-8}
EGA Swingby	8.0×10^{-7}	120	9.8×10^{-5}	15	5.0×10^{-14}
Total Mission	2.7×10^{-3}	0.089	2.5×10^{-4}	0.45	1.8×10^{-8}

The first column describes the mission segment. The second column lists the total probability that plutonium dioxide will be released from the RTGs and/or RHUs. The mean health effects, shown in the third column, are calculated as the total incremental cancer fatalities given that a release occurs. The fourth column lists the mission segment and total mission risks calculated as the total probability of release times the mean health effects; that is, the risk index is defined as the expectation value of health effects. The fifth column shows the land area contaminated above 0.2 mCi/m², the EPA guideline level for land contamination that may warrant further investigation for cleanup. The sixth column shows the average individual risk calculated as the total probability of release times the mean health effects divided by the population placed at risk.

The health effects estimate the cumulative effects of exposure over a 50-year period. In the detailed analysis, the pre-launch and early launch mission segments were divided into 14 accident sequences to provide finer resolution for the radiological consequences and risks in the

Kennedy Space Center/Cape Canaveral Air Station region. Of the pre-launch and early launch accidents, the maximum individual dose was 21 millirem over a 50-year period. This is less than the dose received from one X-ray diagnosis (approximately 40 millirem) and very much less than the dose from the natural radiation background over the same exposure period (approximately 15,000 millirem).

An inadvertent reentry during the EGA swingby can be calculated to cause 120 cancer fatalities in the worldwide population of about 5.8 billion people. However, the average 50-year dose to any individual in the worldwide population would be extremely small (a small fraction of one millirem), a dose that is about 10,000 times less than the natural background dose of 300 millirem a person receives each year of his life. At these low dose levels, there is a high probability that there will be no latent cancer fatalities in the worldwide population.

INTERAGENCY NUCLEAR SAFETY REVIEW PANEL (INSRP) EVALUATION

The Cassini INSRP analyzed the launch, orbital decay reentry, and inadvertent Earth reentry accidents and their associated risks. The assessment methods used in the Cassini INSRP evaluation attempted to deal with the inherent unknowns that arise when predicting the many complex and highly variable processes involved in an evaluation of this type. Analysis of the launch accidents suggests that the probability of incurring a single latent cancer fatality in the general population is in the range of 1 in 3,000 to 1 in 10,000,000. Analysis of the orbital decay reentry accidents suggests that these accidents would not produce a single latent cancer fatality in the general population. The Cassini INSRP reviewed the treatment of the Earth swingby accident in the SAR and the results of an independent study and concur with their conclusions. Those conclusions suggest that the probability of an inadvertent spacecraft reentry is less than 1 in 1,000,000. The net result would be that the average individual 50-year dose would be about the same as each of us repeatedly absorbs in one day from natural background radiation. Over a 50 period—a span of time when nearly a billion people will die of cancer due to a variety of other causes—it is possible to calculate that this level of additional radiation exposure could result in about 1,500 cancer deaths in the world's population. It is also possible that exposure to such a low level of additional radiation would produce no cancer deaths.

OSTP EVALUATION

My full-time staff reviewed all the relevant safety and environmental documentation. I also requested and received the support of two independent expert consultants, Dr. Richard Wilson of Harvard, and Dr. William Kastenberg of the University of California at Berkeley. In their review, these independent experts responded to a series of specific questions I posed to them and provided other relevant comments. They raised a series of questions and issues in the course of their review of the safety and environmental documentation prepared by the Department of Energy and NASA, along with the INSRP Safety Evaluation Report, and each was addressed to the satisfaction of the OSTP.

The OSTP evaluation of the NASA, DOE, and INSRP data and analysis concluded that the radiation dose an average individual could receive over a 50-year period as a result of a Cassini accident is less than one tenth of one percent of the natural background radiation the average

individual is exposed to over that period, and that natural background radiation varies by several percent from place to place on Earth. A second key point is that the extremely robust design of the plutonium packaging in the RTGs minimizes the probability of any release, the amount released, and the effects when releases do occur. Finally, the most important points regarding the EGA swingby accident scenario are (1) its extremely low probability of occurring, and (2) even if it were to occur, on average, people on Earth are not likely to receive a significant enough dose of radiation as a result to cause any adverse health effects. These points are consistent with the conclusion reached by the two independent experts, which was that "the radiological risk posed to any person, and in particular to any member of the public by the proposed Cassini space probe is very small and should not be a reason for delaying or canceling the mission."

Clinton Presidential Records Digital Records Marker

This is not a presidential record. This is used as an administrative marker by the William J. Clinton Presidential Library Staff.

This marker identifies the place of a tabbed divider. Given our digitization capabilities, we are sometimes unable to adequately scan such dividers. The title from the original document is indicated below.

D

Divider Title: _____

CASSINI MISSION RADIOLOGICAL EMERGENCY RESPONSE PLANNING

- As the Lead Federal Agency for any accident associated with the Cassini mission, NASA has prepared comprehensive radiological emergency response plans for launch area accidents.
- Federal government resources required in the event of a launch accident will be deployed to the launch area prior to the launch. This same type of preparedness was provided for the Galileo and Ulysses launches in 1989 and 1990, respectively.
- While the extensive safety analyses prepared for the Cassini mission indicate a very low probability of an accident resulting in a release of radioactive material, the deployment of resources at the launch site will enable rapid verification that no radioactive material has been released, if an accident should occur, and rapid assessment of the situation if a release does occur.
- NASA has developed launch area emergency response plans in close coordination with the Department of Energy (DOE), the Department of Defense (DoD), the Department of State (DOS), the Federal Emergency Management Agency (FEMA), the Environmental Protection Agency (EPA), the State of Florida, Brevard County and other local authorities.
- In addition, NASA has briefed the relevant state and local government authorities (including Governor Lawton Chiles of Florida) on these plans.
- NASA is completing the coordination with DOE, DoD, DOS, FEMA, and EPA to support a response to late launch accidents (i.e., an accident prior to or after the spacecraft and its upper stage reach Earth orbit) or a reentry accident during the Earth swingby.

RADIOLOGICAL RESPONSE RESOURCES

Prior to Cassini's launch:

- NASA, DOE and the State of Florida will deploy 21 radiation monitoring teams and 51 air sampling stations throughout the launch area on both Federal and State/county property.
- Radiological control centers at the Kennedy Space Center and at the National Guard Armory in the City of Cocoa will be staffed by experts in radiological emergency response.
- In the event of a launch accident, these centers will assess monitoring data and recommend protective actions designed to mitigate potential consequences of any radiological hazard.

For late launch accidents involving re-entry of Cassini from Earth orbit:

- NASA will rely primarily on the same assets pre-deployed in the launch area.
- Any required response to areas outside of the United States, including foreign notifications, status updates and international requests for assistance, will be coordinated through the Department of State.
- U.S. Space Command will provide the best possible resolution of the trajectory and ground footprint of the reentering spacecraft.
- Monitoring and assessment teams will be deployed to the impact site to monitor for any release of radioactive material and to recover the radioactive heat sources.

Clinton Presidential Records Digital Records Marker

This is not a presidential record. This is used as an administrative marker by the William J. Clinton Presidential Library Staff.

This marker identifies the place of a tabbed divider. Given our digitization capabilities, we are sometimes unable to adequately scan such dividers. The title from the original document is indicated below.

E

Divider Title: _____

DRAFT

ADMINISTRATION TALKING POINTS

ON

CASSINI LAUNCH

Background: The launch of NASA's Cassini spacecraft aboard a Titan IV/Centaur is planned for October 6, 1997. This project is a cooperative venture of NASA, the European Space Agency, and the Italian Space Agency. The Cassini spacecraft carries 73 pounds of plutonium dioxide in three nuclear powered radioisotope thermoelectric generators (RTGs) and 117 Radioisotope Heating Units (RHUs) required to provide power and heat for the spacecraft. As with previous missions to the outer planets, there is likely to be some public controversy associated with the use of nuclear power systems on this spacecraft.

- As was done for all 26 past U.S. space missions using nuclear power or heating sources over the past 36 years, the Department of Energy (DOE) and NASA have completed a rigorous analysis and decision process to ensure the safety of the October 1997 launch of the Cassini spacecraft on its mission to Saturn.
- NASA produced a comprehensive Environmental Impact Statement for the Cassini mission, with special attention focused on the safety of the spacecraft's nuclear power sources.
- The Department of Energy and NASA produced a rigorous Safety Analysis Report (SAR) to document the testing and analysis that supported the design of the nuclear power devices on the Cassini spacecraft.
- The U.S. Government's Interagency Nuclear Safety Review Panel (INSRP) produced a Safety Evaluation Report (SER) to evaluate the safety of the nuclear power sources under all conceivable conditions they could be exposed to during the Cassini mission.
- Based on the positive conclusions of these extensive analyses and evaluations, the NASA Administrator has requested Presidential nuclear launch safety approval through Dr Gibbons, the Director of the Office of Science and Technology Policy, as required by PD/NSC-25.
- After careful consideration of all the facts and additional independent expert review, the President's Assistant for Science and Technology, Dr Gibbons, has recommended the President approve the launch of the Cassini mission during the first launch opportunity which begins October 6, 1997 and ends on November 15, 1997.
- Based on the safety precautions and analyses and the positive recommendation of the Director of the Office of Science and Technology Policy, the President is comfortable approving the launch of the Cassini spacecraft.

DRAFT

August 29, 1997

RESPONSES TO QUERIES ON NASA CASSINI MISSION

Why does the Cassini spacecraft use Plutonium power generators instead of solar panels?

- The main reason is that Saturn is so far from the sun (about a billion miles) that even the world's best solar panels would have to be so large (over 1/4 the size of a football field) to meet Cassini's electrical power requirements (over 600 watts) that they would make the spacecraft too massive to launch.
- Even if launch were possible, a solar-powered Cassini spacecraft would be too massive to maneuver quickly enough to meet its scientific objectives. The huge solar panels would block the view and otherwise interfere with the scientific instruments. Their complex deployment sequence would also add great risk to the mission.
- Cassini's radioisotope power generators are lightweight, compact and extraordinarily reliable—an important consideration given Cassini's 11-year mission duration.

What is the historical safety track record for the safety of radioisotope power generators?

- The United States has an outstanding record of safety in using radioisotope power generators on 26 space missions over the past three decades, including the Apollo lunar landings, the Viking landers that searched for life on Mars, the Voyager and Pioneer missions to the outer planets, the Galileo mission to Jupiter, and the Ulysses mission studying the Sun's polar regions.
- Radioisotope power sources have never caused a launch failure. They performed as designed on all three launches that did fail for reasons unrelated to the generators.
- More than 35 years of engineering, safety analysis, and testing of RTGs have proven they can withstand severe physical conditions associated with launch accidents and reentry from orbit without releasing fuel or causing harmful effects.
- The three Radioisotope Thermoelectric Generators (RTGs) on Cassini are not nuclear reactors, they have no moving parts, and they use neither fission nor fusion to generate power. They simply use the heat from the radioactive decay of the plutonium to generate electricity.

Could the plutonium in the RTGs be used to make bombs?

- No. The plutonium-238 isotope used to produce electricity in the Cassini RTGs could not be used to make a bomb. The small amount of plutonium-239 present in the RTG fuel as an impurity is not enough to make a bomb, even if it could be separated from the plutonium-238.
- RTG fuel is not considered a great enough international proliferation hazard to be controlled by the International Atomic Energy Agency.

What has been done to ensure the safety of Cassini's Radioisotope Thermoelectric Generators (RTGs)?

- Cassini's RTGs include several design features to minimize risk, and required an environmental approval process, and an extensive safety assessment and evaluation process concluding with nuclear launch safety approval from the White House.
- The Plutonium dioxide fuel is in heat-resistant, ceramic form similar to a plate or coffee cup, which limits the amount of respirable-size particles and in turn minimizes the potential health effects from even the most severe accidents.
- The Plutonium dioxide fuel in each of the three RTGs is divided into 18 small modules, each with its own heat shield and impact shell. This design reduces the chance of fuel release in an accident because not all the modules would be equally impacted.
- Each golf-ball sized fuel pellet is encased in an Iridium capsule and protected by multiple layers of graphite to minimize the chances of its accidental release.
- The Department of Energy performed an extensive safety assessment for the RTGs on the Cassini mission. Their report is publicly available.
- NASA produced an Environmental Impact Statement for the Cassini mission, also publicly available, which addressed all the public comments submitted.

What are the risks associated with the 73 pounds of Plutonium in the Cassini power generators?

- In order for Plutonium dioxide to become a serious health hazard, it must be reduced to very fine particles, inhaled into a person's lungs or otherwise delivered into a person's body, and stay there, causing internal organs to be exposed to alpha radiation over a long period of time, and in some cases causing cancer.
- The ceramic form of the Plutonium dioxide fuel on Cassini, and the multiple layers of protective material encasing it, limit the generation and distribution of fine particles. Even if released, its insolubility keeps it from being widely distributed within the human body and inhibits it from moving through the environment into water supplies or the food chain.
- Extensive analysis and evaluation have predicted that there are some low probability launch accidents (1 chance in 1,400, according to NASA) and accidents from Earth orbit, and one very low probability accident known as inadvertent Earth swingby reentry, that could possibly cause the release of some plutonium dioxide. In those cases, most of the released material would not be fine particles.

What are the worst case accident scenarios during launch and Earth orbit, and what health effects would they produce?

- The worst case accidents involving either a launch failure or a reentry from Earth orbit would release none, or only a small amount of respirable plutonium.
- The chances of even one person dying from cancer over the next 50 years as a result of a launch accident or reentry from Earth orbit are small, according to extensive analysis by the Department of Energy and the Interagency Nuclear Safety Review Panel.

What has been done to minimize the chance of an inadvertent reentry during the Earth swingby in August 1999?

- The chances of an inadvertent reentry during the Earth swingby are less than 1 in 1,000,000. Cassini uses highly reliable and redundant guidance and control systems. More importantly, its trajectory is purposely biased to miss the Earth by thousands of miles unless a precise three-step sequence of spacecraft maneuvers is performed before the Earth swingby to move it to its swingby altitude of 500 miles or higher.
- NASA has a long history and proven capability of extremely precise swingby maneuvers of planets and moons. NASA has successfully performed all of its swingbys/orbit insertions (more than 60) of planets and their moons. NASA's Galileo spacecraft executed two Earth swingbys on its way to Jupiter. In 1990, it came within 5 miles of its 600-mile-high aim point; in 1992, it came within 1 mile of its 186-mile-high aim point.
- The possibility of an Earth reentry becomes conceivable only if an extremely unlikely sequence of events and failures occurs, altering the spacecraft velocity with exactly the right direction and magnitude. The spacecraft is shielded against micrometeoroid impacts to make the possibility of such an event even less likely.

What would be the health effects from the worst case accident scenario involving an inadvertent reentry during the Earth swingby in August 1999?

- An extremely unlikely inadvertent reentry during Earth swingby would result in between about 1 and 20 pounds of vaporized Plutonium being released into the upper atmosphere, where it would be very widely dispersed around the world.
- The net result would be that the average individual 50-year dose would be about the same as each of us repeatedly absorbs in one day from natural background radiation.
- Over a 50 period—a span of time when nearly a billion people will die of cancer due to a variety of other causes—it is possible to calculate that this level of additional radiation exposure could result in between 120 and 1,500 cancer deaths in the world's population. It is also possible that exposure to such a low level of additional radiation would produce no cancer deaths.

Why not wait until the 2001 launch opportunity to avoid the Earth swingby?

- The 2001 launch opportunity (Venus/Venus/Venus Gravity Assist--VVGGA) would result in a 50% longer travel time to Saturn (10 years versus 6.7 years) and increase the cost of the mission by about \$835M (\$365 pre-launch and \$470M post-launch).
- The only backup launch opportunity after 2001 (in May 2002) would require two Earth swingbys instead of the one required for the 1997 launch opportunity. The risks associated with any of these opportunities are comparable.
- The spacecraft would have to be re-designed to include larger propellant tanks, more radiation shielding, and newly developed, more expensive engines to make up for the lower energy available from the VVGGA trajectory.
- The science mission would be degraded in several ways, including fewer Titan flybys, less ring observations, and less synergistic science observations due to reduced power available from the decayed fuel in the nuclear power generators.

What are the plans to deal with any accidents involving the plutonium-powered generators on Cassini?

- NASA, the Department of Energy, and the Air Force have prepared and rehearsed for Cassini mission contingencies, including launch area and orbital reentry accidents.
- The Cassini launch is subject to the safety control zones established to protect personnel and resources, and will comply with all Range Safety requirements.
- Launch area safety clearance zones and procedures to protect the public on land, the sea, and in the air are established and controlled at the Eastern Range.
- During launch and while in Earth orbit, Cassini will be continually tracked by highly trained and rehearsed personnel from the Air Force. NASA, the Department of Energy, and the Air Force, will be ready to respond to any kind of Cassini launch accident.

Clinton Presidential Records Digital Records Marker

This is not a presidential record. This is used as an administrative marker by the William J. Clinton Presidential Library Staff.

This marker identifies the place of a tabbed divider. Given our digitization capabilities, we are sometimes unable to adequately scan such dividers. The title from the original document is indicated below.

Enclosure

Divider Title: _____

DRAFT

as of September 16, 1997 at 2:15 PM

September xx, 1997

The Honorable Daniel S. Goldin
Administrator
National Aeronautics and Space Administration
300 E. Street, S.W.
Washington, D.C. 20546

Dear Mr. Goldin:

In your letter of August 15, 1997, you requested nuclear launch safety approval for the Cassini spacecraft which will be powered by radioisotope thermoelectric generators (RTGs). By the authority of Presidential Directive NSC-25, as amended on May 8, 1996, having reviewed the final Safety Analysis Report of the Department of Energy and the Safety Evaluation Report of the Interagency Nuclear Safety Review Panel, I have concluded that the request should be approved.

On the basis that NASA will complete its normal launch readiness process to assure the safety of the launch system, this letter is your authority to proceed with the launch of the Cassini mission within the compass of Presidential Directive NSC-25, during the timeframe from October 6 to November 15, 1997. If the launch is delayed until the second launch opportunity, between November 28, 1997 and January 11, 1998, NASA must explain the reasons for the delay so I can evaluate whether there are any possible implications to the nuclear launch safety determination.

Sincerely,

John H. Gibbons
Director

cc: Secretary of Defense
Secretary of Energy
Assistant to the President for National Security Affairs
Assistant to the Vice President for National Security Affairs
Administrator, Environmental Protection Agency
Chair, Council on Environmental Quality

DRAFT

WHITE HOUSE STAFFING MEMORANDUM

DATE: 9/28 ACTION/CONCURRENCE/COMMENT DUE BY: 9/29SUBJECT: Decision on Cassini Launch

	ACTION	FYI		ACTION	FYI
VICE PRESIDENT	☒	☐	McCURRY	☐	☒
BOWLES	☒	☐	McGINTY	☒	☐
McLARTY	☐	☐	NASH	☐	☐
PODESTA	☒	☐	RADD	☐	☐
MATHEWS	☒	☐	REED	☐	☐
RAINES	☒	☐	RUFF	☒	☐
BLUMENTHAL	☐	☐	SMITH	☐	☐
BERGER	☒	☐	SOSNIK	☐	☐
ECHAVESTE	☐	☐	SPERLING	☐	☐
EMANUEL	☒	☐	STREETT	☐	☐
GIBBONS	☐	☐	TARULLO	☐	☐
HILLEY	☒	☐	VERVEER	☐	☐
IBARRA	☐	☐	WALDMAN	☐	☐
KLAIN	☒	☐	YELLEN	☐	☐
LEWIS	☐	☐	BEGALA	☐	☐
LINDSEY	☐	☐		☐	☐
MARSHALL	☒	☐		☐	☐
				☐	☐

REMARKS:

Any comment?

RESPONSE:

Staff Secretary
Ext. 6-2702

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20502

'97 SEP 22 PM4:18

September 19, 1997

MEMORANDUM FOR THE PRESIDENT

FROM:

JOHN H. GIBBONS 

SUBJECT:

Decision on Cassini Nuclear Launch Safety Approval

Purpose

To inform you of my intention to approve the launch of NASA's Cassini spacecraft under the provisions of Presidential Directive NSC-25 (PD/NSC-25) for nuclear launch safety approval.

Background

NASA's Cassini spacecraft is currently scheduled for launch on October 13, 1997. The launch "window" can be extended to November 15, 1997, with a secondary launch opportunity between November 28, 1997 and January 11, 1998. The spacecraft will reach Saturn in July 2004 and will carry out a four-year exploration of the planet, its rings and its moons, particularly focusing its attention on Titan, the only moon in the solar system with an appreciable atmosphere. As the best-instrumented interplanetary spacecraft ever launched, Cassini will provide the most complete information about another planet system ever obtained. Since its inception in 1989, the Cassini mission has a long record of support by Congress, by successive Administrations, by its international partners from the European Space Agency, the Italian Space Agency, and by the international science community. This \$3.5B mission represents one of NASA's most significant international space science missions, and involves hardware from Europe and over 120 scientists from 16 European countries.

Because Cassini must operate at such a tremendous distance from the Sun (nearly a billion miles away where sunlight is less than one percent as intense as it is at Earth), generating electrical power for this spacecraft by using solar panels is simply not feasible. Therefore, NASA's Cassini spacecraft will use three radioisotope thermoelectric generators (RTGs) powered by 72.9 pounds of plutonium dioxide. Over the last 30 years, NASA has successfully used RTGs on 15 missions, including Apollo, Pioneer, Voyager, and Viking missions. The same type of RTG was used in previous NASA missions to the outer solar system. In 1989, the Galileo mission to Jupiter was powered by two plutonium RTGs identical in design to those on the Cassini spacecraft. In 1990, the Ulysses mission to observe the polar regions of the Sun was also powered by a similar RTG.

Discussion

For missions that carry significant amounts of radioactive materials, like Cassini, the two separate and distinct processes which govern its launch include: the National Environmental Policy Act (NEPA) compliance process for environmental impact statements; and the Executive Branch nuclear launch safety approval process required by paragraph 9 of Presidential Directive

(PD) National Security Memorandum number 25 (NSC-25), dated December 14, 1977, and updated May 8, 1996 (TAB A).

A Final Environmental Impact Statement (EIS) for completion of preparations, launch, and operation of the Cassini mission was completed by filing the EIS with the EPA in June, 1995, and Final Supplemental Environmental Impact Statement (SEIS) was completed and filed with the EPA in June 1997, with NASA signing a Record of Decision (NASA's final agency action under NEPA) in August 1997. The EIS and SEIS were prepared in accordance with the Guidelines of the Council on Environmental Quality (40 CFR 1500 et seq.) and applicable NASA regulations (14 CFR 1216 et seq.).

Consistent with PD/NSC-25, the Department of Energy has prepared over the past seven years a comprehensive and thorough Safety Analysis Report. That analysis draws on over 35 years of design, engineering and safety analysis, including the testing of RTGs to prove that they withstand severe physical conditions associated with launch accidents and reentry from orbit. In addition, an Interagency Nuclear Safety Review Panel, including safety experts from five agencies (the Department of Energy, NASA, the Department of Defense, the Environmental Protection Agency, and a technical advisor from the Nuclear Regulatory Commission), conducted a comprehensive evaluation of the Department of Energy's safety analysis and documented their findings in the Safety Evaluation Report. Beyond these two reports, to ensure that we reviewed all safety aspects of the launch, I have also obtained outside independent expert opinions from Dr. Richard Wilson of Harvard and Dr. William Kastenberg of the University of California. My staff at OSTP and I have also thoroughly reviewed these reports.

Based on the results of the interagency safety reviews, on August 15, 1997 NASA Administrator Dan Goldin requested nuclear launch safety approval (TAB B) through my office. The Department of Defense, the Environmental Protection Agency, and the Department of Energy have written to the NASA Administrator confirming that, in their view, the safety analysis conducted for the mission is comprehensive and thorough. Copies of these letters are attached. We have summarized the safety and environmental analyses conducted by the Department of Energy and NASA, along with the results of the reviews by the interagency team and OSTP (TAB C). In sum, the analysis supports the view that the plutonium is in the form of a hard ceramic and so well encased in multiple layers of iridium and graphite shielding that under most conceivable launch vehicle accidents, no plutonium would be released. However, there are three potential accident scenarios that could lead to some release of plutonium, although none in ways that are likely to result in anyone receiving more than an extremely small exposure.

The first accident scenario involves a Titan IV/Centaur launch vehicle failure resulting in the Cassini spacecraft impacting on concrete or steel surfaces near the launch pad. The NASA and Department of Energy safety documentation states that the estimated probability of this occurring is 1 in 1,400. The amount of plutonium (if any) released would be small and almost entirely confined to government property at Kennedy Space Center and Cape Canaveral Air Station. The amount of plutonium that might be respirable would be less than one gram, and

thus the expected radiation dose to a person in the exposed population (estimated at 100,000 people) would be 2 millirem total over 50 years. This is roughly equivalent to the amount of radiation a person would receive during a round-trip airline flight at 35,000 feet altitude from New York to Los Angeles, or about the dose an average American receives from "natural" background radiation in a day. It is extremely unlikely that this would lead to any adverse health effects.

The second accident scenario involves a launch vehicle or upper stage malfunction which leads to orbital reentry of the spacecraft and impact of an RTG module on a hard surface. The probability of such an accident with a release is estimated in the safety documentation to be about 1 in 500. Under this scenario, the Department of Energy's conservative analysis assumed that minute cracks in the iridium casing surrounding the plutonium could potentially allow release of some plutonium. The amount of plutonium released would be very small and confined to a limited area, though this area could be practically anywhere in the world. As with the launch area accident, the amount of respirable plutonium would be very small (less than one gram), and thus the expected radiation dose to a person in the exposed population (estimated at 5,000 people) would be less than 20 millirem total over 50 years. This is roughly equivalent to a full set of dental X-rays, and it is extremely unlikely that this would lead to any adverse health effects. The INSRP evaluation concluded that plutonium would not even be released in this accident scenario.

A third accident scenario involves an extremely unlikely inadvertent reentry during a maneuver in 1999 when the spacecraft loops back around the Earth on a gravity assist trajectory to Saturn. The Cassini mission is designed to ensure that the probability of this occurring is less than 1 in 1,000,000. Because the maximum swingby velocity (over 42,000 miles per hour) exceeds the demonstrated RTG re-entry survival performance, it is possible that about 1 to 20 pounds of vaporized plutonium could be released into the upper atmosphere and globally distributed. Over a 50-year period, the average individual radiation dose from this unlikely accident would be 15,000 times less than the natural background radiation received during the same period. In effect, over a 50 year span, it would be the equivalent of adding one more day's exposure to natural background radiation. No data are available to predict direct effects from such small radiation doses. However, using a pessimistic dose-response relationship, it is possible to calculate that this level of additional radiation exposure could result in between 120 and 1,500 cancer deaths in the world's population over a 50-year period. Over that same period, nearly a billion people are projected to die of cancer due to a variety of other unrelated causes. I believe the most reasonable expectation is that exposure to such a low level of additional radiation would produce no detectable cancer deaths.

Despite the low probability of an accident that results in a radiological hazard, NASA has organized a conservative emergency contingency plan in coordination with the Department of Energy (DOE), the Department of Defense (DoD), the Department of State (DOS), the Federal Emergency Management Agency (FEMA), the Environmental Protection Agency (EPA), the State of Florida, Brevard County and other local authorities. In addition, NASA has discussed

these plans with the relevant state and local government authorities, including Governor Lawton Chiles of Florida. NASA is completing the coordination planning with DOE, DoD, DOS, FEMA, and EPA to support a response to late launch accidents (i.e., an accident prior to or after the spacecraft and its upper stage reach Earth orbit) or a reentry accident during the Earth swingby. A summary of the radiological emergency response planning activities for Cassini is attached (TAB D). Responses to questions (RTQs) and proposed Administration talking points (TAB E) are also attached.

The staff of the National Security Council and the Office of the Vice President have reviewed this memorandum and the attached explanatory material. The Council on Environmental Quality has reviewed the materials and had no comments.

Summary

Overall, the Cassini mission risks are comparable to the risks calculated for NASA's Galileo mission to Jupiter, which was launched on the Space Shuttle in 1989, carried two RTGs like Cassini's, and performed two Earth swingbys. In relative terms, the risks from the Cassini mission are thousands to millions of times less than the risks associated with airplane crashes, fires, dam failures, and natural phenomena (such as natural chemical carcinogens, background radiation, earthquakes, floods, tornadoes, and hurricanes).

On the basis of all the safety reviews, I have concluded that the risks of accidental release of radioactive material in the course of the Cassini mission are minimal, and that the precautions against radioactive contamination of the environment or health hazards to human populations are fully adequate.

Therefore, in my capacity as Director of the OSTP, and consistent with NSC/PD-25, I intend to approve the launch request, as per the enclosed letter to the NASA Administrator (Enclosure).

Attachments:

- Tab A—NSC/PD-25 “. . . Launch of Nuclear Systems into Space”
- Tab B—Request Letter from NASA Administrator
- Tab C—Description of Cassini Safety and Environmental Analyses
- Tab D—Radiological Emergency Response Planning
- Tab E—RTQs and Administration Talking Points

Enclosure

Letter to NASA Administrator

FOR OFFICIAL USE ONLY

2

Paragraph 9 of NSC/PD-25 is replaced by the paragraph below:

9. A separate procedure will be followed for launching nuclear systems. An environmental impact analysis or nuclear safety evaluation report, as appropriate, will be prepared. The President's approval is required for launches of spacecraft utilizing reactors and other devices with a potential for criticality and radioactive sources containing total quantities greater than 1,000 times the A_2 value listed in Table I of the International Atomic Energy Agency's Safety Series No. 6, Regulations for the Safe Transport of Radioactive Materials, 1985 Edition (as amended 1990). Launch of sources containing quantities greater than 0.1 percent of the A_2 value from this table will be forecasted quarterly to the Office of Science and Technology Policy (OSTP). This report is for information and is not intended to introduce a new approval procedure. An ad hoc Interagency Nuclear Safety Review Panel consisting of members from the Department of Defense, Department of Energy, National Aeronautics and Space Administration and the Environmental Protection Agency, will evaluate the risks associated with mission requiring the President's approval and prepare a Nuclear Safety Evaluation Report. The Nuclear Regulatory Commission will participate as a technical advisor to the panel as appropriate. The head of the sponsoring agency will request the President's approval for the flight through the Office of Science and Technology Policy. The Director is authorized to render approval for such launchings, unless he considers it advisable to forward the matter to the President for a decision.

All other paragraphs of NSC/PD-25 (1977) remain unchanged and in force



Anthony Lake
Assistant to the President
for National Security Affairs

FOR OFFICIAL USE ONLY
NATIONAL SECURITY COUNCIL
DISTRIBUTION RECEIPT

LOG 9620379
DATE 08 MAY 96

WHITE HOUSE STAFFING MEMORANDUM

DATE: 9/28 ACTION/CONCURRENCE/COMMENT DUE BY: 9/29SUBJECT: Decision on Cassini Launch

	ACTION	FYI		ACTION	FYI
VICE PRESIDENT	☒	☐	McCURRY	☐	☒
BOWLES	☒	☐	McGINTY	☒	☐
McLARTY	☐	☐	NASH	☐	☐
PODESTA <i>commentary attached</i>	☒	☐	RADD	☐	☐
MATHEWS	☒	☐	REED	☐	☐
RAINES	☒	☐	RUFF	☒	☐
BLUMENTHAL	☐	☐	SMITH	☐	☐
BERGER <i>ok w/attached</i>	☒	☐	SOSNIK	☐	☐
ECHAVESTE	☐	☐	SPERLING	☐	☐
EMANUEL <i>comment attached</i>	☒	☐	STREETT	☐	☐
GIBBONS	☐	☐	TARULLO	☐	☐
HILLEY	☒	☐	VERVEER	☐	☐
IBARRA	☐	☐	WALDMAN	☐	☐
KLAIN	☒	☐	YELLEN	☐	☐
LEWIS	☐	☐	BEGALA	☐	☐
LINDSEY	☐	☐		☐	☐
MARSHALL	☒	☐		☐	☐
				☐	☐

REMARKS:

Any comment?

RESPONSE:

WHITE HOUSE STAFFING MEMORANDUM

DATE: 9/28 ACTION/CONCURRENCE/COMMENT DUE BY: 9/29SUBJECT: Decision on Cassini Launch

OCT 1 PM 4:37

	ACTION	FYI		ACTION	FYI
VICE PRESIDENT	☒	☐	McCURRY	☐	☒
BOWLES	☒	☐	McGINTY	☒	☐
McLARTY	☐	☐	NASH	☐	☐
PODESTA	☒	☐	RADD	☐	☐
MATHEWS	☒	☐	REED	☐	☐
RAINES	☒	☐	RUFF	☒	☐
BLUMENTHAL	☐	☐	SMITH	☐	☐
BERGER	☒	☐	SOSNIK	☐	☐
ECHAVESTE	☐	☐	SPERLING	☐	☐
EMANUEL	☒	☐	STREETT	☐	☐
GIBBONS	☐	☐	TARULLO	☐	☐
HILLEY	☒	☐	VERVEER	☐	☐
IBARRA	☐	☐	WALDMAN	☐	☐
KLAIN	☒	☐	YELLEN	☐	☐
LEWIS	☐	☐	BEGALA	☐	☐
LINDSEY	☐	☐		☐	☐
MARSHALL	☒	☐		☐	☐
				☐	☐

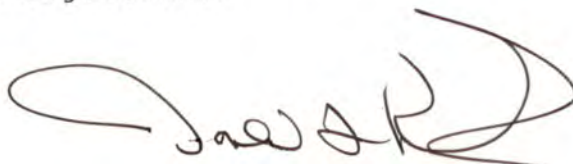
REMARKS: ✓

Any comment?

October 1, 1997

RESPONSE:

The NSC staff reviewed this letter during the drafting process and has no objections.



MG Donald L. Kerrick

Staff Secretary
Ext. 6-2702

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20502

'97 SEP 22 PM4:18

September 19, 1997

MEMORANDUM FOR THE PRESIDENT

FROM: JOHN H. GIBBONS 
SUBJECT: Decision on Cassini Nuclear Launch Safety Approval

Purpose

To inform you of my intention to approve the launch of NASA's Cassini spacecraft under the provisions of Presidential Directive NSC-25 (PD/NSC-25) for nuclear launch safety approval.

Background

NASA's Cassini spacecraft is currently scheduled for launch on October 13, 1997. The launch "window" can be extended to November 15, 1997, with a secondary launch opportunity between November 28, 1997 and January 11, 1998. The spacecraft will reach Saturn in July 2004 and will carry out a four-year exploration of the planet, its rings and its moons, particularly focusing its attention on Titan, the only moon in the solar system with an appreciable atmosphere. As the best-instrumented interplanetary spacecraft ever launched, Cassini will provide the most complete information about another planet system ever obtained. Since its inception in 1989, the Cassini mission has a long record of support by Congress, by successive Administrations, by its international partners from the European Space Agency, the Italian Space Agency, and by the international science community. This \$3.5B mission represents one of NASA's most significant international space science missions, and involves hardware from Europe and over 120 scientists from 16 European countries.

Because Cassini must operate at such a tremendous distance from the Sun (nearly a billion miles away where sunlight is less than one percent as intense as it is at Earth), generating electrical power for this spacecraft by using solar panels is simply not feasible. Therefore, NASA's Cassini spacecraft will use three radioisotope thermoelectric generators (RTGs) powered by 72.9 pounds of plutonium dioxide. Over the last 30 years, NASA has successfully used RTGs on 15 missions, including Apollo, Pioneer, Voyager, and Viking missions. The same type of RTG was used in previous NASA missions to the outer solar system. In 1989, the Galileo mission to Jupiter was powered by two plutonium RTGs identical in design to those on the Cassini spacecraft. In 1990, the Ulysses mission to observe the polar regions of the Sun was also powered by a similar RTG.

Discussion

For missions that carry significant amounts of radioactive materials, like Cassini, the two separate and distinct processes which govern its launch include: the National Environmental Policy Act (NEPA) compliance process for environmental impact statements; and the Executive Branch nuclear launch safety approval process required by paragraph 9 of Presidential Directive

(PD) National Security Memorandum number 25 (NSC-25), dated December 14, 1977, and updated May 8, 1996 (TAB A).

A Final Environmental Impact Statement (EIS) for completion of preparations, launch, and operation of the Cassini mission was completed by filing the EIS with the EPA in June, 1995, and Final Supplemental Environmental Impact Statement (SEIS) was completed and filed with the EPA in June 1997, with NASA signing a Record of Decision (NASA's final agency action under NEPA) in August 1997. The EIS and SEIS were prepared in accordance with the Guidelines of the Council on Environmental Quality (40 CFR 1500 et seq.) and applicable NASA regulations (14 CFR 1216 et seq.).

Consistent with PD/NSC-25, the Department of Energy has prepared over the past seven years a comprehensive and thorough Safety Analysis Report. That analysis draws on over 35 years of design, engineering and safety analysis, including the testing of RTGs to prove that they withstand severe physical conditions associated with launch accidents and reentry from orbit. In addition, an Interagency Nuclear Safety Review Panel, including safety experts from five agencies (the Department of Energy, NASA, the Department of Defense, the Environmental Protection Agency, and a technical advisor from the Nuclear Regulatory Commission), conducted a comprehensive evaluation of the Department of Energy's safety analysis and documented their findings in the Safety Evaluation Report. Beyond these two reports, to ensure that we reviewed all safety aspects of the launch, I have also obtained outside independent expert opinions from Dr. Richard Wilson of Harvard and Dr. William Kastenberg of the University of California. My staff at OSTP and I have also thoroughly reviewed these reports.

Based on the results of the interagency safety reviews, on August 15, 1997 NASA Administrator Dan Goldin requested nuclear launch safety approval (TAB B) through my office. The Department of Defense, the Environmental Protection Agency, and the Department of Energy have written to the NASA Administrator confirming that, in their view, the safety analysis conducted for the mission is comprehensive and thorough. Copies of these letters are attached. We have summarized the safety and environmental analyses conducted by the Department of Energy and NASA, along with the results of the reviews by the interagency team and OSTP (TAB C). In sum, the analysis supports the view that the plutonium is in the form of a hard ceramic and so well encased in multiple layers of iridium and graphite shielding that under most conceivable launch vehicle accidents, no plutonium would be released. However, there are three potential accident scenarios that could lead to some release of plutonium, although none in ways that are likely to result in anyone receiving more than an extremely small exposure.

The first accident scenario involves a Titan IV/Centaur launch vehicle failure resulting in the Cassini spacecraft impacting on concrete or steel surfaces near the launch pad. The NASA and Department of Energy safety documentation states that the estimated probability of this occurring is 1 in 1,400. The amount of plutonium (if any) released would be small and almost entirely confined to government property at Kennedy Space Center and Cape Canaveral Air Station. The amount of plutonium that might be respirable would be less than one gram, and

thus the expected radiation dose to a person in the exposed population (estimated at 100,000 people) would be 2 millirem total over 50 years. This is roughly equivalent to the amount of radiation a person would receive during a round-trip airline flight at 35,000 feet altitude from New York to Los Angeles, or about the dose an average American receives from "natural" background radiation in a day. It is extremely unlikely that this would lead to any adverse health effects.

The second accident scenario involves a launch vehicle or upper stage malfunction which leads to orbital reentry of the spacecraft and impact of an RTG module on a hard surface. The probability of such an accident with a release is estimated in the safety documentation to be about 1 in 500. Under this scenario, the Department of Energy's conservative analysis assumed that minute cracks in the iridium casing surrounding the plutonium could potentially allow release of some plutonium. The amount of plutonium released would be very small and confined to a limited area, though this area could be practically anywhere in the world. As with the launch area accident, the amount of respirable plutonium would be very small (less than one gram), and thus the expected radiation dose to a person in the exposed population (estimated at 5,000 people) would be less than 20 millirem total over 50 years. This is roughly equivalent to a full set of dental X-rays, and it is extremely unlikely that this would lead to any adverse health effects. The INSRP evaluation concluded that plutonium would not even be released in this accident scenario.

A third accident scenario involves an extremely unlikely inadvertent reentry during a maneuver in 1999 when the spacecraft loops back around the Earth on a gravity assist trajectory to Saturn. The Cassini mission is designed to ensure that the probability of this occurring is less than 1 in 1,000,000. Because the maximum swingby velocity (over 42,000 miles per hour) exceeds the demonstrated RTG re-entry survival performance, it is possible that about 1 to 20 pounds of vaporized plutonium could be released into the upper atmosphere and globally distributed. Over a 50-year period, the average individual radiation dose from this unlikely accident would be 15,000 times less than the natural background radiation received during the same period. In effect, over a 50 year span, it would be the equivalent of adding one more day's exposure to natural background radiation. No data are available to predict direct effects from such small radiation doses. However, using a pessimistic dose-response relationship, it is possible to calculate that this level of additional radiation exposure could result in between 120 and 1,500 cancer deaths in the world's population over a 50-year period. Over that same period, nearly a billion people are projected to die of cancer due to a variety of other unrelated causes. I believe the most reasonable expectation is that exposure to such a low level of additional radiation would produce no detectable cancer deaths.

Despite the low probability of an accident that results in a radiological hazard, NASA has organized a conservative emergency contingency plan in coordination with the Department of Energy (DOE), the Department of Defense (DoD), the Department of State (DOS), the Federal Emergency Management Agency (FEMA), the Environmental Protection Agency (EPA), the State of Florida, Brevard County and other local authorities. In addition, NASA has discussed

these plans with the relevant state and local government authorities, including Governor Lawton Chiles of Florida. NASA is completing the coordination planning with DOE, DoD, DOS, FEMA, and EPA to support a response to late launch accidents (i.e., an accident prior to or after the spacecraft and its upper stage reach Earth orbit) or a reentry accident during the Earth swingby. A summary of the radiological emergency response planning activities for Cassini is attached (TAB D). Responses to questions (RTQs) and proposed Administration talking points (TAB E) are also attached.

The staff of the National Security Council and the Office of the Vice President have reviewed this memorandum and the attached explanatory material. The Council on Environmental Quality has reviewed the materials and had no comments.

Summary

Overall, the Cassini mission risks are comparable to the risks calculated for NASA's Galileo mission to Jupiter, which was launched on the Space Shuttle in 1989, carried two RTGs like Cassini's, and performed two Earth swingbys. In relative terms, the risks from the Cassini mission are thousands to millions of times less than the risks associated with airplane crashes, fires, dam failures, and natural phenomena (such as natural chemical carcinogens, background radiation, earthquakes, floods, tornadoes, and hurricanes).

On the basis of all the safety reviews, I have concluded that the risks of accidental release of radioactive material in the course of the Cassini mission are minimal, and that the precautions against radioactive contamination of the environment or health hazards to human populations are fully adequate.

Therefore, in my capacity as Director of the OSTP, and consistent with NSC/PD-25, I intend to approve the launch request, as per the enclosed letter to the NASA Administrator (Enclosure).

Attachments:

- Tab A—NSC/PD-25 “ . . . Launch of Nuclear Systems into Space”
- Tab B—Request Letter from NASA Administrator
- Tab C—Description of Cassini Safety and Environmental Analyses
- Tab D—Radiological Emergency Response Planning
- Tab E—RTQs and Administration Talking Points

Enclosure

Letter to NASA Administrator

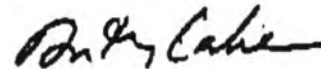
FOR OFFICIAL USE ONLY

2

Paragraph 9 of NSC/PD-25 is replaced by the paragraph below:

9. A separate procedure will be followed for launching nuclear systems. An environmental impact analysis or nuclear safety evaluation report, as appropriate, will be prepared. The President's approval is required for launches of spacecraft utilizing reactors and other devices with a potential for criticality and radioactive sources containing total quantities greater than 1,000 times the A_2 value listed in Table I of the International Atomic Energy Agency's Safety Series No. 6, Regulations for the Safe Transport of Radioactive Materials, 1985 Edition (as amended 1990). Launch of sources containing quantities greater than 0.1 percent of the A_2 value from this table will be forecasted quarterly to the Office of Science and Technology Policy (OSTP). This report is for information and is not intended to introduce a new approval procedure. An ad hoc Interagency Nuclear Safety Review Panel consisting of members from the Department of Defense, Department of Energy, National Aeronautics and Space Administration and the Environmental Protection Agency, will evaluate the risks associated with mission requiring the President's approval and prepare a Nuclear Safety Evaluation Report. The Nuclear Regulatory Commission will participate as a technical advisor to the panel as appropriate. The head of the sponsoring agency will request the President's approval for the flight through the Office of Science and Technology Policy. The Director is authorized to render approval for such launchings, unless he considers it advisable to forward the matter to the President for a decision.

All other paragraphs of NSC/PD-25 (1977) remain unchanged and in force



Anthony Lake
Assistant to the President
for National Security Affairs

FOR OFFICIAL USE ONLY
NATIONAL SECURITY COUNCIL
DISTRIBUTION RECEIPT

LOG 9620379
DATE 08 MAY 96

WHITE HOUSE STAFFING MEMORANDUM

DATE: 9/28 ACTION/CONCURRENCE/COMMENT DUE BY: 9/29SUBJECT: Decision on Cassini Launch

	ACTION	FYI		ACTION	FYI
VICE PRESIDENT	☒	☐	McCURRY	☐	☒
BOWLES	☒	☐	McGINTY	☒	☐
McLARTY	☐	☐	NASH	☐	☐
PODESTA	☒	☐	RADD	☐	☐
MATHEWS	☒	☐	REED	☐	☐
RAINES	☒	☐	RUFF	☒	☐
BLUMENTHAL	☐	☐	SMITH	☐	☐
BERGER	☒	☐	SOSNIK	☐	☐
ECHAVESTE	☐	☐	SPERLING	☐	☐
EMANUEL	☒	☐	STREETT	☐	☐
GIBBONS	☐	☐	TARULLO	☐	☐
HILLEY	☒	☐	VERVEER	☐	☐
IBARRA	☐	☐	WALDMAN	☐	☐
KLAIN	☒	☐	YELLEN	☐	☐
LEWIS	☐	☐	BEGALA	☐	☐
LINDSEY	☐	☐		☐	☐
MARSHALL	☒	☐		☐	☐
				☐	☐

REMARKS:

Any comment?

RESPONSE:

forwardStaff Secretary
Ext. 6-2702

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20502

'97 SEP 22 PM4:18

September 19, 1997

MEMORANDUM FOR THE PRESIDENT

FROM: JOHN H. GIBBONS 
SUBJECT: Decision on Cassini Nuclear Launch Safety Approval

Purpose

To inform you of my intention to approve the launch of NASA's Cassini spacecraft under the provisions of Presidential Directive NSC-25 (PD/NSC-25) for nuclear launch safety approval.

Background

NASA's Cassini spacecraft is currently scheduled for launch on October 13, 1997. The launch "window" can be extended to November 15, 1997, with a secondary launch opportunity between November 28, 1997 and January 11, 1998. The spacecraft will reach Saturn in July 2004 and will carry out a four-year exploration of the planet, its rings and its moons, particularly focusing its attention on Titan, the only moon in the solar system with an appreciable atmosphere. As the best-instrumented interplanetary spacecraft ever launched, Cassini will provide the most complete information about another planet system ever obtained. Since its inception in 1989, the Cassini mission has a long record of support by Congress, by successive Administrations, by its international partners from the European Space Agency, the Italian Space Agency, and by the international science community. This \$3.5B mission represents one of NASA's most significant international space science missions, and involves hardware from Europe and over 120 scientists from 16 European countries.

Because Cassini must operate at such a tremendous distance from the Sun (nearly a billion miles away where sunlight is less than one percent as intense as it is at Earth), generating electrical power for this spacecraft by using solar panels is simply not feasible. Therefore, NASA's Cassini spacecraft will use three radioisotope thermoelectric generators (RTGs) powered by 72.9 pounds of plutonium dioxide. Over the last 30 years, NASA has successfully used RTGs on 15 missions, including Apollo, Pioneer, Voyager, and Viking missions. The same type of RTG was used in previous NASA missions to the outer solar system. In 1989, the Galileo mission to Jupiter was powered by two plutonium RTGs identical in design to those on the Cassini spacecraft. In 1990, the Ulysses mission to observe the polar regions of the Sun was also powered by a similar RTG.

Discussion

For missions that carry significant amounts of radioactive materials, like Cassini, the two separate and distinct processes which govern its launch include: the National Environmental Policy Act (NEPA) compliance process for environmental impact statements; and the Executive Branch nuclear launch safety approval process required by paragraph 9 of Presidential Directive

(PD) National Security Memorandum number 25 (NSC-25), dated December 14, 1977, and updated May 8, 1996 (TAB A).

A Final Environmental Impact Statement (EIS) for completion of preparations, launch, and operation of the Cassini mission was completed by filing the EIS with the EPA in June, 1995, and Final Supplemental Environmental Impact Statement (SEIS) was completed and filed with the EPA in June 1997, with NASA signing a Record of Decision (NASA's final agency action under NEPA) in August 1997. The EIS and SEIS were prepared in accordance with the Guidelines of the Council on Environmental Quality (40 CFR 1500 et seq.) and applicable NASA regulations (14 CFR 1216 et seq.).

Consistent with PD/NSC-25, the Department of Energy has prepared over the past seven years a comprehensive and thorough Safety Analysis Report. That analysis draws on over 35 years of design, engineering and safety analysis, including the testing of RTGs to prove that they withstand severe physical conditions associated with launch accidents and reentry from orbit. In addition, an Interagency Nuclear Safety Review Panel, including safety experts from five agencies (the Department of Energy, NASA, the Department of Defense, the Environmental Protection Agency, and a technical advisor from the Nuclear Regulatory Commission), conducted a comprehensive evaluation of the Department of Energy's safety analysis and documented their findings in the Safety Evaluation Report. Beyond these two reports, to ensure that we reviewed all safety aspects of the launch, I have also obtained outside independent expert opinions from Dr. Richard Wilson of Harvard and Dr. William Kastenberg of the University of California. My staff at OSTP and I have also thoroughly reviewed these reports.

Based on the results of the interagency safety reviews, on August 15, 1997 NASA Administrator Dan Goldin requested nuclear launch safety approval (TAB B) through my office. The Department of Defense, the Environmental Protection Agency, and the Department of Energy have written to the NASA Administrator confirming that, in their view, the safety analysis conducted for the mission is comprehensive and thorough. Copies of these letters are attached. We have summarized the safety and environmental analyses conducted by the Department of Energy and NASA, along with the results of the reviews by the interagency team and OSTP (TAB C). In sum, the analysis supports the view that the plutonium is in the form of a hard ceramic and so well encased in multiple layers of iridium and graphite shielding that under most conceivable launch vehicle accidents, no plutonium would be released. However, there are three potential accident scenarios that could lead to some release of plutonium, although none in ways that are likely to result in anyone receiving more than an extremely small exposure.

The first accident scenario involves a Titan IV/Centaur launch vehicle failure resulting in the Cassini spacecraft impacting on concrete or steel surfaces near the launch pad. The NASA and Department of Energy safety documentation states that the estimated probability of this occurring is 1 in 1,400. The amount of plutonium (if any) released would be small and almost entirely confined to government property at Kennedy Space Center and Cape Canaveral Air Station. The amount of plutonium that might be respirable would be less than one gram, and

thus the expected radiation dose to a person in the exposed population (estimated at 100,000 people) would be 2 millirem total over 50 years. This is roughly equivalent to the amount of radiation a person would receive during a round-trip airline flight at 35,000 feet altitude from New York to Los Angeles, or about the dose an average American receives from "natural" background radiation in a day. It is extremely unlikely that this would lead to any adverse health effects.

The second accident scenario involves a launch vehicle or upper stage malfunction which leads to orbital reentry of the spacecraft and impact of an RTG module on a hard surface. The probability of such an accident with a release is estimated in the safety documentation to be about 1 in 500. Under this scenario, the Department of Energy's conservative analysis assumed that minute cracks in the iridium casing surrounding the plutonium could potentially allow release of some plutonium. The amount of plutonium released would be very small and confined to a limited area, though this area could be practically anywhere in the world. As with the launch area accident, the amount of respirable plutonium would be very small (less than one gram), and thus the expected radiation dose to a person in the exposed population (estimated at 5,000 people) would be less than 20 millirem total over 50 years. This is roughly equivalent to a full set of dental X-rays, and it is extremely unlikely that this would lead to any adverse health effects. The INSRP evaluation concluded that plutonium would not even be released in this accident scenario.

A third accident scenario involves an extremely unlikely inadvertent reentry during a maneuver in 1999 when the spacecraft loops back around the Earth on a gravity assist trajectory to Saturn. The Cassini mission is designed to ensure that the probability of this occurring is less than 1 in 1,000,000. Because the maximum swingby velocity (over 42,000 miles per hour) exceeds the demonstrated RTG re-entry survival performance, it is possible that about 1 to 20 pounds of vaporized plutonium could be released into the upper atmosphere and globally distributed. Over a 50-year period, the average individual radiation dose from this unlikely accident would be 15,000 times less than the natural background radiation received during the same period. In effect, over a 50 year span, it would be the equivalent of adding one more day's exposure to natural background radiation. No data are available to predict direct effects from such small radiation doses. However, using a pessimistic dose-response relationship, it is possible to calculate that this level of additional radiation exposure could result in between 120 and 1,500 cancer deaths in the world's population over a 50-year period. Over that same period, nearly a billion people are projected to die of cancer due to a variety of other unrelated causes. I believe the most reasonable expectation is that exposure to such a low level of additional radiation would produce no detectable cancer deaths.

Despite the low probability of an accident that results in a radiological hazard, NASA has organized a conservative emergency contingency plan in coordination with the Department of Energy (DOE), the Department of Defense (DoD), the Department of State (DOS), the Federal Emergency Management Agency (FEMA), the Environmental Protection Agency (EPA), the State of Florida, Brevard County and other local authorities. In addition, NASA has discussed

these plans with the relevant state and local government authorities, including Governor Lawton Chiles of Florida. NASA is completing the coordination planning with DOE, DoD, DOS, FEMA, and EPA to support a response to late launch accidents (i.e., an accident prior to or after the spacecraft and its upper stage reach Earth orbit) or a reentry accident during the Earth swingby. A summary of the radiological emergency response planning activities for Cassini is attached (TAB D). Responses to questions (RTQs) and proposed Administration talking points (TAB E) are also attached.

The staff of the National Security Council and the Office of the Vice President have reviewed this memorandum and the attached explanatory material. The Council on Environmental Quality has reviewed the materials and had no comments.

Summary

Overall, the Cassini mission risks are comparable to the risks calculated for NASA's Galileo mission to Jupiter, which was launched on the Space Shuttle in 1989, carried two RTGs like Cassini's, and performed two Earth swingbys. In relative terms, the risks from the Cassini mission are thousands to millions of times less than the risks associated with airplane crashes, fires, dam failures, and natural phenomena (such as natural chemical carcinogens, background radiation, earthquakes, floods, tornadoes, and hurricanes).

On the basis of all the safety reviews, I have concluded that the risks of accidental release of radioactive material in the course of the Cassini mission are minimal, and that the precautions against radioactive contamination of the environment or health hazards to human populations are fully adequate.

Therefore, in my capacity as Director of the OSTP, and consistent with NSC/PD-25, I intend to approve the launch request, as per the enclosed letter to the NASA Administrator (Enclosure).

Attachments:

- Tab A—NSC/PD-25 “. . . Launch of Nuclear Systems into Space”
- Tab B—Request Letter from NASA Administrator
- Tab C—Description of Cassini Safety and Environmental Analyses
- Tab D—Radiological Emergency Response Planning
- Tab E—RTQs and Administration Talking Points

Enclosure

Letter to NASA Administrator

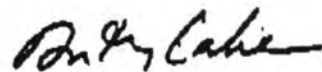
FOR OFFICIAL USE ONLY

2

Paragraph 9 of NSC/PD-25 is replaced by the paragraph below:

9. A separate procedure will be followed for launching nuclear systems. An environmental impact analysis or nuclear safety evaluation report, as appropriate, will be prepared. The President's approval is required for launches of spacecraft utilizing reactors and other devices with a potential for criticality and radioactive sources containing total quantities greater than 1,000 times the A_2 value listed in Table I of the International Atomic Energy Agency's Safety Series No. 6, Regulations for the Safe Transport of Radioactive Materials, 1985 Edition (as amended 1990). Launch of sources containing quantities greater than 0.1 percent of the A_2 value from this table will be forecasted quarterly to the Office of Science and Technology Policy (OSTP). This report is for information and is not intended to introduce a new approval procedure. An ad hoc Interagency Nuclear Safety Review Panel consisting of members from the Department of Defense, Department of Energy, National Aeronautics and Space Administration and the Environmental Protection Agency, will evaluate the risks associated with mission requiring the President's approval and prepare a Nuclear Safety Evaluation Report. The Nuclear Regulatory Commission will participate as a technical advisor to the panel as appropriate. The head of the sponsoring agency will request the President's approval for the flight through the Office of Science and Technology Policy. The Director is authorized to render approval for such launchings, unless he considers it advisable to forward the matter to the President for a decision.

All other paragraphs of NSC/PD-25 (1977) remain unchanged and in force



Anthony Lake
Assistant to the President
for National Security Affairs

FOR OFFICIAL USE ONLY
NATIONAL SECURITY COUNCIL
DISTRIBUTION RECEIPT

LOG 9620379
DATE 08 MAY 96

'97 SEP 30 AM 11:23

WHITE HOUSE STAFFING MEMORANDUM

DATE: 9/28 ACTION/CONCURRENCE/COMMENT DUE BY: 9/29SUBJECT: Decision on Cassini Launch

	ACTION	FYI		ACTION	FYI
VICE PRESIDENT	☒	☐	McCURRY	☐	☒
BOWLES	☒	☐	McGINTY	☒	☐
McLARTY	☐	☐	NASH	☐	☐
PODESTA	☒	☐	RADD	☐	☐
MATHEWS	☒	☐	REED	☐	☐
RAINES	☒	☐	RUFF	☒	☐
BLUMENTHAL	☐	☐	SMITH	☐	☐
BERGER	☒	☐	SOSNIK	☐	☐
ECHAVESTE	☐	☐	SPERLING	☐	☐
EMANUEL 	☒	☐	STREETT	☐	☐
GIBBONS	☐	☐	TARULLO	☐	☐
HILLEY	☒	☐	VERVEER	☐	☐
IBARRA	☐	☐	WALDMAN	☐	☐
KLAIN	☒	☐	YELLEN	☐	☐
LEWIS	☐	☐	BEGALA	☐	☐
LINDSEY	☐	☐		☐	☐
MARSHALL	☒	☐		☐	☐
				☐	☐

REMARKS:

Any comment? OK.

RESPONSE:

Rahm Emanuel
Staff Secretary
Ext. 6-2702
Sp. 29

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20502

'97 SEP 22 PM4:18

September 19, 1997

MEMORANDUM FOR THE PRESIDENT

FROM: JOHN H. GIBBONS 
SUBJECT: Decision on Cassini Nuclear Launch Safety Approval

Purpose

To inform you of my intention to approve the launch of NASA's Cassini spacecraft under the provisions of Presidential Directive NSC-25 (PD/NSC-25) for nuclear launch safety approval.

Background

NASA's Cassini spacecraft is currently scheduled for launch on October 13, 1997. The launch "window" can be extended to November 15, 1997, with a secondary launch opportunity between November 28, 1997 and January 11, 1998. The spacecraft will reach Saturn in July 2004 and will carry out a four-year exploration of the planet, its rings and its moons, particularly focusing its attention on Titan, the only moon in the solar system with an appreciable atmosphere. As the best-instrumented interplanetary spacecraft ever launched, Cassini will provide the most complete information about another planet system ever obtained. Since its inception in 1989, the Cassini mission has a long record of support by Congress, by successive Administrations, by its international partners from the European Space Agency, the Italian Space Agency, and by the international science community. This \$3.5B mission represents one of NASA's most significant international space science missions, and involves hardware from Europe and over 120 scientists from 16 European countries.

Because Cassini must operate at such a tremendous distance from the Sun (nearly a billion miles away where sunlight is less than one percent as intense as it is at Earth), generating electrical power for this spacecraft by using solar panels is simply not feasible. Therefore, NASA's Cassini spacecraft will use three radioisotope thermoelectric generators (RTGs) powered by 72.9 pounds of plutonium dioxide. Over the last 30 years, NASA has successfully used RTGs on 15 missions, including Apollo, Pioneer, Voyager, and Viking missions. The same type of RTG was used in previous NASA missions to the outer solar system. In 1989, the Galileo mission to Jupiter was powered by two plutonium RTGs identical in design to those on the Cassini spacecraft. In 1990, the Ulysses mission to observe the polar regions of the Sun was also powered by a similar RTG.

Discussion

For missions that carry significant amounts of radioactive materials, like Cassini, the two separate and distinct processes which govern its launch include: the National Environmental Policy Act (NEPA) compliance process for environmental impact statements; and the Executive Branch nuclear launch safety approval process required by paragraph 9 of Presidential Directive

(PD) National Security Memorandum number 25 (NSC-25), dated December 14, 1977, and updated May 8, 1996 (TAB A).

A Final Environmental Impact Statement (EIS) for completion of preparations, launch, and operation of the Cassini mission was completed by filing the EIS with the EPA in June, 1995, and Final Supplemental Environmental Impact Statement (SEIS) was completed and filed with the EPA in June 1997, with NASA signing a Record of Decision (NASA's final agency action under NEPA) in August 1997. The EIS and SEIS were prepared in accordance with the Guidelines of the Council on Environmental Quality (40 CFR 1500 et seq.) and applicable NASA regulations (14 CFR 1216 et seq.).

Consistent with PD/NSC-25, the Department of Energy has prepared over the past seven years a comprehensive and thorough Safety Analysis Report. That analysis draws on over 35 years of design, engineering and safety analysis, including the testing of RTGs to prove that they withstand severe physical conditions associated with launch accidents and reentry from orbit. In addition, an Interagency Nuclear Safety Review Panel, including safety experts from five agencies (the Department of Energy, NASA, the Department of Defense, the Environmental Protection Agency, and a technical advisor from the Nuclear Regulatory Commission), conducted a comprehensive evaluation of the Department of Energy's safety analysis and documented their findings in the Safety Evaluation Report. Beyond these two reports, to ensure that we reviewed all safety aspects of the launch, I have also obtained outside independent expert opinions from Dr. Richard Wilson of Harvard and Dr. William Kastenberg of the University of California. My staff at OSTP and I have also thoroughly reviewed these reports.

Based on the results of the interagency safety reviews, on August 15, 1997 NASA Administrator Dan Goldin requested nuclear launch safety approval (TAB B) through my office. The Department of Defense, the Environmental Protection Agency, and the Department of Energy have written to the NASA Administrator confirming that, in their view, the safety analysis conducted for the mission is comprehensive and thorough. Copies of these letters are attached. We have summarized the safety and environmental analyses conducted by the Department of Energy and NASA, along with the results of the reviews by the interagency team and OSTP (TAB C). In sum, the analysis supports the view that the plutonium is in the form of a hard ceramic and so well encased in multiple layers of iridium and graphite shielding that under most conceivable launch vehicle accidents, no plutonium would be released. However, there are three potential accident scenarios that could lead to some release of plutonium, although none in ways that are likely to result in anyone receiving more than an extremely small exposure.

The first accident scenario involves a Titan IV/Centaur launch vehicle failure resulting in the Cassini spacecraft impacting on concrete or steel surfaces near the launch pad. The NASA and Department of Energy safety documentation states that the estimated probability of this occurring is 1 in 1,400. The amount of plutonium (if any) released would be small and almost entirely confined to government property at Kennedy Space Center and Cape Canaveral Air Station. The amount of plutonium that might be respirable would be less than one gram, and

thus the expected radiation dose to a person in the exposed population (estimated at 100,000 people) would be 2 millirem total over 50 years. This is roughly equivalent to the amount of radiation a person would receive during a round-trip airline flight at 35,000 feet altitude from New York to Los Angeles, or about the dose an average American receives from "natural" background radiation in a day. It is extremely unlikely that this would lead to any adverse health effects.

The second accident scenario involves a launch vehicle or upper stage malfunction which leads to orbital reentry of the spacecraft and impact of an RTG module on a hard surface. The probability of such an accident with a release is estimated in the safety documentation to be about 1 in 500. Under this scenario, the Department of Energy's conservative analysis assumed that minute cracks in the iridium casing surrounding the plutonium could potentially allow release of some plutonium. The amount of plutonium released would be very small and confined to a limited area, though this area could be practically anywhere in the world. As with the launch area accident, the amount of respirable plutonium would be very small (less than one gram), and thus the expected radiation dose to a person in the exposed population (estimated at 5,000 people) would be less than 20 millirem total over 50 years. This is roughly equivalent to a full set of dental X-rays, and it is extremely unlikely that this would lead to any adverse health effects. The INSRP evaluation concluded that plutonium would not even be released in this accident scenario.

A third accident scenario involves an extremely unlikely inadvertent reentry during a maneuver in 1999 when the spacecraft loops back around the Earth on a gravity assist trajectory to Saturn. The Cassini mission is designed to ensure that the probability of this occurring is less than 1 in 1,000,000. Because the maximum swingby velocity (over 42,000 miles per hour) exceeds the demonstrated RTG re-entry survival performance, it is possible that about 1 to 20 pounds of vaporized plutonium could be released into the upper atmosphere and globally distributed. Over a 50-year period, the average individual radiation dose from this unlikely accident would be 15,000 times less than the natural background radiation received during the same period. In effect, over a 50 year span, it would be the equivalent of adding one more day's exposure to natural background radiation. No data are available to predict direct effects from such small radiation doses. However, using a pessimistic dose-response relationship, it is possible to calculate that this level of additional radiation exposure could result in between 120 and 1,500 cancer deaths in the world's population over a 50-year period. Over that same period, nearly a billion people are projected to die of cancer due to a variety of other unrelated causes. I believe the most reasonable expectation is that exposure to such a low level of additional radiation would produce no detectable cancer deaths.

Despite the low probability of an accident that results in a radiological hazard, NASA has organized a conservative emergency contingency plan in coordination with the Department of Energy (DOE), the Department of Defense (DoD), the Department of State (DOS), the Federal Emergency Management Agency (FEMA), the Environmental Protection Agency (EPA), the State of Florida, Brevard County and other local authorities. In addition, NASA has discussed

these plans with the relevant state and local government authorities, including Governor Lawton Chiles of Florida. NASA is completing the coordination planning with DOE, DoD, DOS, FEMA, and EPA to support a response to late launch accidents (i.e., an accident prior to or after the spacecraft and its upper stage reach Earth orbit) or a reentry accident during the Earth swingby. A summary of the radiological emergency response planning activities for Cassini is attached (TAB D). Responses to questions (RTQs) and proposed Administration talking points (TAB E) are also attached.

The staff of the National Security Council and the Office of the Vice President have reviewed this memorandum and the attached explanatory material. The Council on Environmental Quality has reviewed the materials and had no comments.

Summary

Overall, the Cassini mission risks are comparable to the risks calculated for NASA's Galileo mission to Jupiter, which was launched on the Space Shuttle in 1989, carried two RTGs like Cassini's, and performed two Earth swingbys. In relative terms, the risks from the Cassini mission are thousands to millions of times less than the risks associated with airplane crashes, fires, dam failures, and natural phenomena (such as natural chemical carcinogens, background radiation, earthquakes, floods, tornadoes, and hurricanes).

On the basis of all the safety reviews, I have concluded that the risks of accidental release of radioactive material in the course of the Cassini mission are minimal, and that the precautions against radioactive contamination of the environment or health hazards to human populations are fully adequate.

Therefore, in my capacity as Director of the OSTP, and consistent with NSC/PD-25, I intend to approve the launch request, as per the enclosed letter to the NASA Administrator (Enclosure).

Attachments:

- Tab A—NSC/PD-25 “. . . Launch of Nuclear Systems into Space”
- Tab B—Request Letter from NASA Administrator
- Tab C—Description of Cassini Safety and Environmental Analyses
- Tab D—Radiological Emergency Response Planning
- Tab E—RTQs and Administration Talking Points

Enclosure

Letter to NASA Administrator

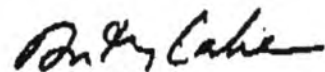
FOR OFFICIAL USE ONLY

2

Paragraph 9 of NSC/PD-25 is replaced by the paragraph below:

9. A separate procedure will be followed for launching nuclear systems. An environmental impact analysis or nuclear safety evaluation report, as appropriate, will be prepared. The President's approval is required for launches of spacecraft utilizing reactors and other devices with a potential for criticality and radioactive sources containing total quantities greater than 1,000 times the A_2 value listed in Table I of the International Atomic Energy Agency's Safety Series No. 6, Regulations for the Safe Transport of Radioactive Materials, 1985 Edition (as amended 1990). Launch of sources containing quantities greater than 0.1 percent of the A_2 value from this table will be forecasted quarterly to the Office of Science and Technology Policy (OSTP). This report is for information and is not intended to introduce a new approval procedure. An ad hoc Interagency Nuclear Safety Review Panel consisting of members from the Department of Defense, Department of Energy, National Aeronautics and Space Administration and the Environmental Protection Agency, will evaluate the risks associated with mission requiring the President's approval and prepare a Nuclear Safety Evaluation Report. The Nuclear Regulatory Commission will participate as a technical advisor to the panel as appropriate. The head of the sponsoring agency will request the President's approval for the flight through the Office of Science and Technology Policy. The Director is authorized to render approval for such launchings, unless he considers it advisable to forward the matter to the President for a decision.

All other paragraphs of NSC/PD-25 (1977) remain unchanged and in force



Anthony Lake
Assistant to the President
for National Security Affairs

FOR OFFICIAL USE ONLY
NATIONAL SECURITY COUNCIL
DISTRIBUTION RECEIPT

LOG 9820379
DATE 08 MAY 96

THE WHITE HOUSE
WASHINGTON

October 2, 1997



INFORMATION

MEMORANDUM FOR THE PRESIDENT

FROM: SAMUEL R. BERGER 

SUBJECT: CTBT Coverage: Front Page from Coast to Coast

Almost every regional paper we could get our hands on headlined on the front page your announcement at the UN that you were transmitting the CTBT to the Senate for approval (examples attached).

This is reminiscent of the print coverage we received on other major milestones in our CTBT campaign (such as your August 11, 1995 announcement on zero yield and the September 24, 1996 signing ceremony in New York), proving (again) that CTBT is an issue the media (and we believe, the public) will track.

Attachment

Tab A CTBT Headlines

Twins win '97
finale at Dome;
Will Knoblauch
be back in '98?



Hamline's
Chinese cellist
driven to perform
E1



Competitive
karate: Art
or sport?
E1

Tape trading:
E-mail links
music fans
E8



High: 65°
Low: 46°
Sunrise: 7:00
Sunset: 7:00
266th day

B8

Tuesday

SEPTEMBER 23, 1997

50¢

Star Tribune

NEWSPAPER OF THE TWIN CITIES

www.startribune.com

Minneapolis

Edition

Clinton: End nuclear tests 'for all time'

*He makes plea to U.N. assembly
as test-ban treaty heads to Senate*

"Never in the course of human history have we had a greater opportunity to make our people healthier and wiser, to protect our planet from decay and abuse, to reap the benefits of free markets without abandoning the social contract and its concern for the common good."

— President Clinton
at the U.N.



Thinking global

In his address to the United Nations' 52nd General Assembly, the president:
➤ Announced that he has sent the Senate the long-delayed Comprehensive Test Ban Treaty, prohibiting all nuclear test

Associated Press

UNITED NATIONS — President Clinton called on world leaders Monday to "end all nuclear tests for all time" and sent the long-delayed global test-ban treaty to the Senate, where he hopes to overcome Republican objections.

In an address to the United Nations' 52nd General Assembly in New York, Clinton called the treaty "the longest sought, hardest fought prize in the history of arms control."

He signed the accord a year ago but hadn't submitted it to the Senate so White House lobbyists could build support.

In a 19-minute speech to U.N. delegates, the president also called for a permanent international court to punish human rights violators.

And he pledged that the United States would pay nearly \$1

"A spooky time for the valley. Of late it seems we can't escape something bad happening."

— Paul Driscoll, Red River Valley farmer



Star Tribune Photos

Wendell Sands, who farms near Alvarado, Minn., said he'd rather talk about flooding than the scab that imperiled his wheat crop, as he walks a freshly plowed field that still is saturated with moisture. Under normal conditions, the dirt would pulverize down, but it remains in large clumps.

Los Angeles Times

Tuesday
September 23
1997

SUNDAY

THE TIMES MIRROR COMPANY

DAILY \$1.00
AN EDITION OF THE LOS ANGELES TIMES

Quest to Solve 1990 Art Heist Gets New Life

By ELIZABETH MEHREN
TIMES STAFF WRITER

BOSTON—Disguised as police officers, thieves entered the Isabella Stuart Gardner Museum here in March 1990 and pulled off what remains the largest unsolved art burglary in history. With the museum's night security guard bound and gagged, 13 works by Rembrandt, Vermeer and others were cut from their frames. The missing masterpieces are valued at \$200 million.

While art lovers reeled, authorities quickly identified key individuals they believed might help recover

Please see ART, A9

Seagram to Buy USA Networks for \$1.7 Billion

By SALLIE HOFMEISTER
TIMES STAFF WRITER

Ending a bitter dispute between two of the entertainment industry's most powerful moguls, the Seagram Co. agreed Monday to pay \$1.7 billion to Viacom Inc. for its half share of the popular USA Networks.

By taking control of one of the top-rated and most widely distributed cable channels, Seagram's Universal Studios division consolidates its position among the handful of conglomerates that can both

A Day of Diplomacy

President Clinton spoke to U.N. delegates Monday in his fifth such appearance.



Clinton called on other nations to go forward with test-ban treaty.

HIGHLIGHTS

■ Clinton said a nuclear test-ban treaty has been sent to the Senate, calling on the world to unite against "21st century predators."

■ He said there should be a permanent international court to punish human rights violators.

■ He is pushing Congress to approve a U.S. plan to repay nearly \$1 billion in past-due U.N. fees.

WHO OWES THE MOST

U.S.	\$1.5 billion
Ukraine	\$247 million
Russia	\$237 million
Belarus	\$62 million
Japan	\$41 million

“We are committed to seeing the United Nations succeed in the 21st century.”

Los Angeles Times

Clinton Asks Senate to OK Nuclear Test Ban

■ **Weapons:** President, using U.N. appearance to outline vision of an increasingly integrated world, also calls on other countries to ratify treaty.

By ELIZABETH SHOGREN
TIMES STAFF WRITER

UNITED NATIONS—President Clinton on Monday asked a skeptical Senate to ratify a treaty to ban nuclear test explosions, calling the pact “the longest-sought, hardest-fought prize in the history of arms control.”

In an address to the 52nd U.N. General Assembly, Clinton also called on the other nations whose leaders signed the Comprehensive Test Ban Treaty to go forward with ratification.

Clinton signed the test-ban treaty a year ago but delayed sending it to the Senate.

White House officials said they expected the treaty to face rough treatment from some Senate Republicans but expressed confidence that it will pass in the end, following the pattern of previous arms control treaties.

The officials said they hoped the Senate would begin hearings on the treaty later this fall and vote on it next year, although such a schedule remains in doubt.

Clinton used his U.N. appearance to outline his vision of an increasingly integrated world, in the

U.S. Indicts Alleged Head of Mexican Cartel

■ **Drugs:** Officials hope to ‘break the bubble’ protecting Arellano brothers. Reward of \$2 million may be offered.

By ANNE-MARIE OCONNOR
TIMES STAFF WRITER

few even romanticize them, much like the American mobsters that

China's Jiang Plans U.S. Trip With L.A. Stop

By JIM MANN
TIMES STAFF WRITER

WASHINGTON—Chinese President Jiang Zemin plans to visit

Mostly cloudy, chance of rain.
High 78, low 65. D12



THE ATLANTA CONSTITUTION

TUESDAY, SEPT. 23, 1997

LACKING IN HARMONY



JOEY IVANS/SCO / Staff

Beating the drum for change, Community Supporters of the Atlanta Symphony Orchestra picket Monday at the Woodruff Arts Center, but their protest failed to sway the ASO League. The league elected a full slate of directors nominated by the Atlanta Symphony Orchestra's board and rejected calls for open board meetings and an independent audit of the financial relationship between the orchestra and the arts center. **Article, B1**

Atlanta immigration office to hopefuls: Write, don't visit

By Elizabeth Kunda

...all illegal ...room ... Alexander

Nuclear ban gets nudge by Clinton

In pitch to U.N., he vows to push treaty to end tests fueling arms race

By Bob Deans
WASHINGTON BUREAU

United Nations — Citing the need to build "a new strategy of security" for the 21st century, President Clinton on Monday asked the Senate to ratify a treaty calling for a global ban on nuclear weapons tests.

Calling the Comprehensive Test Ban Treaty "the longest-sought, hardest-fought prize in the history of arms control," he said the ban would apply brakes to the global arms race.

"It will help to prevent the nuclear powers from developing more advanced and more dangerous weapons," Clinton said, and "it will limit the possibilities for other states to acquire such devices."

In a speech to U.N. ambassadors at the General Assembly, the annual U.N. business meeting, the president announced his intention to seek Senate ratification of the treaty. A year ago, the General Assembly adopted

Committee, said Bob Bell, a senior arms control adviser to the Clinton administration.

Senate Foreign Relations Committee Chairman Jesse Helms (R-N.C.) has expressed reservations about the treaty, but Bell said, "We intend to win this vote, and failure is not an option."

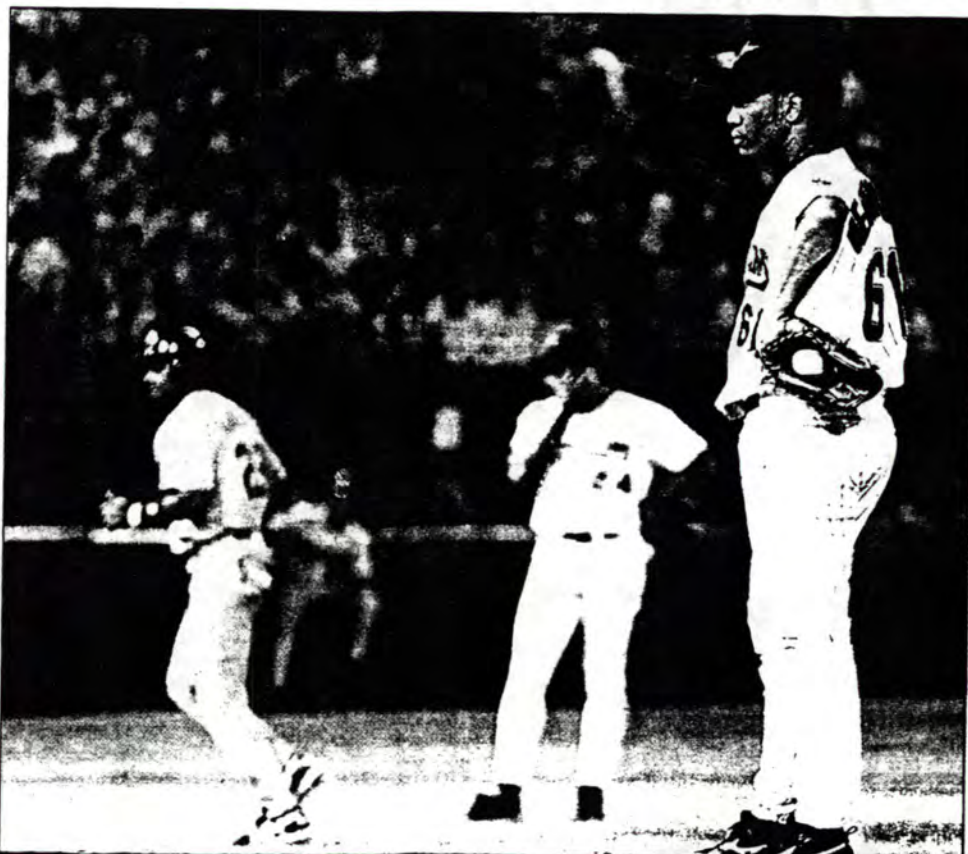
The treaty is not at the head of Helms' agenda, and he has made no commitment on hearings or a final disposition.

Developing nuclear weapons requires periodic test blasts, often performed deep underground.

Such explosions usually can be detected by seismic equipment normally used to monitor earthquakes. Banning such tests would make developing or improving nuclear weapons difficult but would not, White House officials contend, undermine U.S. nuclear capability.

Opponents argue that U.S. weapons development could be impeded by the ban, and that

MARLINS LOSE, NEED ONE FOR THE ROAD



Nuclear pact sent to Senate

Global treaty would ban weapons tests

By ROBERT A. RANKIN and DAVID HESS
Herald Washington Bureau

UNITED NATIONS — A year after signing it, President Clinton on Monday sent the Senate a global treaty banning nuclear weapons tests, calling the pact the "longest-sought, hardest-fought prize in the history of arms control."

Clinton announced the action during his annual address to the United Nations General Assembly — an occasion he used to strongly endorse beefing up the international organization.

The comprehensive nuclear test-ban treaty, which would outlaw all nuclear weapons tests, was adopted by the U.N. last September and signed by Clinton two weeks later.

The treaty will not take effect unless all 44 nations possessing nuclear-power reactors ratify it, and India has insisted it will not do so. The treaty's value therefore is more symbolic than binding, although most nuclear powers — includ-



RICHARD DREW / AP

ing

g
alls

drain
ources

ARMS, 4A
ALTIES, 4A

home alarm
times since
\$1,100 in

ors, too.
ami Police
es that each
department
you subtract
of taxpayer
asing ghosts

estimate is
pared with
s. Fort Lau-
it costs \$100
he Village of
ound \$150.
one of the
for Metro-
nty and vir-
h Florida's
epartments,
ice Sgt. Ste-

our crime
o the FBI, it
isting as far
edley said.

Developer Sidney Gunst Jr. spends a lot of time at the airport /C1



Amanda and Philip found out the house is not deserted /D1



THE BACK PAGE	D6	LOTTERIES	A3	OP. ED.
CLASSIFIED	E8	MARKET TABLES	C2	PREPS
COMICS	D4	MINI PAGE	F1	SCORES
EDITORIALS	A8	NATION	A2	TELEVISION
ENTERTAINMENT	D3	OBITUARIES	B2	WORLD

Richmond Times-Dispatch

RICHMOND, VIRGINIA 23293

Copyright © 1997
147th Year, No. 266

VIRGINIA'S NEWS LEADER
A MEDIA GENERAL NEWSPAPER

TWO-STAR
EDITION

TUESDAY, SEPTEMBER 23, 1997

Senate gets test-ban treaty

Clinton urges the end of 'all nuclear tests for all time'

THE ASSOCIATED PRESS

UNITED NATIONS — President Clinton sent the Senate the long-delayed global test-ban treaty yesterday and urged lawmakers to "end all nuclear tests for all time" by approving the pact over objections of some Republicans.

Announcing his action in an address to the United Nations' 52nd General Assembly, Clinton called the treaty "the longest sought, hardest fought prize in the history of arms

control." He signed the accord a year ago but pocketed it while White House lobbyists tried to build support.

In a 19-minute speech to U.N. delegates, the president also called for a permanent international court to punish human rights violators.

And he pledged that the United States would pay nearly \$1 billion in past-due U.N. fees to "put the question of debts and dues behind us once and for all."

Returning to the theme of his U.N.

address last year, Clinton said the nations of the world must unite against "21st century predators." He warned, "We're all vulnerable to the reckless acts of rogue states and to an unholy axis of terrorists, drug traffickers and international criminals."

The president met privately with foreign leaders, including Russian Foreign Minister Yevgeny Primakov, before heading to the Metropolitan Opera's season-opening performance of "Carmen." He was returning to Washington last night.

His submission of the test-ban treaty is expected to stir opposition from GOP senators who don't trust arms control agreements or who insist that testing is needed to maintain America's nuclear stockpile.

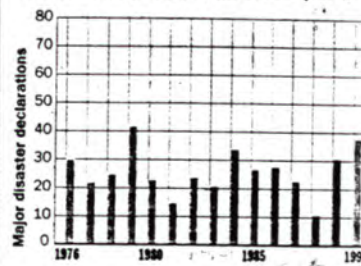
The debate probably will restore battle lines from the vote on the Clinton-backed chemical weapons treaty, ratified in April after many lawmakers remained undecided until the last minute. The president needs about 22 Republican senators to join Democrats in support of the treaty.

"We intend to win this vote and

PLEASE SEE TEST, PAGE A7 ►

Politics a factor?

There has been an increase in major disaster declarations of this decade. Last year, a presidential election year, declared 75 major disasters, twice as many as he had



SOURCE: Federal Emergency Management Agency

Sheriff is asked to resign

Henrico officers confront Mathews

BY MARK BOWES

TIMES-DISPATCH STAFF WRITER

In a stinging vote of no confidence, high-ranking Henrico Sheriff's offi-

Moving to Baha



Many area build facilities in harm's way

More, costlier disasters

BY MARSHA MERCER

MEDIA GENERAL NEWS SERVICE

McCLELLANVILLE, S.C.

Taking dead aim on this tiny fishing village, a hurricane wrecked almost every home,

dredging boat but it got snared tape.

"The dredge crane, but the dredge anything in the middle of boats and pil-

"We've gone to the wall and they've said no way."

Sister Mary Aquin O'Neill, who lives at Provincial House

Sisters losing historic home

USF&G says nuns must leave building in Mount Washington

By ROBERT GUY MATTHEWS
SUN STAFF

A group of nuns were evicted yesterday from a historic building they had occupied since 1915 by USF&G Corp., which wants the Northwest Baltimore site to make way for a company-wide expansion.

The eviction notice by the Baltimore insurance giant says the nuns must leave Provincial House in Mount Washington by Nov. 30, ending a five-year battle by the Sisters of Mercy to continue to operate the Mount St. Agnes Theological Center for Women in the landmark two-story, blue-stone house.

"We've gone to the wall and they've said no way," said Sister Mary Aquin O'Neill, Sister of Mercy of Baltimore, who helps run classes, wor-



Time running out: Sister Mary Aquin O'Neill and Diane M. Caplin in front of Provincial House. USF&G says the 1881 building must be vacated by Nov. 30 because it had become unsafe.

LLOYD FOX: SUN STAFFHAD BECOME HAD

Hopkins scientists win 'America's Nobels'

McKusick, Sommer to get Lasker awards for medical research

By JONATHAN BOR
AND FRANK D. ROYLANCE
SUN STAFF



Clinton pushes arms treaty

President tells U.N. he's sending test-ban pact to Senate

'Longest-sought prize'

Helms aide rules out hearings, says it could take 10 years to pass

FROM WIRE REPORTS

UNITED NATIONS — A year after signing it, President Clinton sent the Senate a global treaty banning nuclear-weapons tests yesterday, calling the pact the "longest-sought, hardest-fought prize in the history of arms control."

Clinton announced the action during his annual address to the U.N. General Assembly — an occasion he used to strongly endorse beefing up the international

GRIFFEY SMACKS 55TH HR VS. A's 1C

BRAVES WIN NL EAST
TITLE; Baseball, 1,4-6C

JACKSONVILLE SLIPS PAST PITTSBURGH IN LAST SECONDS 1C

USA TODAY

NO. 1 IN THE USA ... FIRST IN DAILY READERS

ROUGH SEX FOCUS OF ALBERT TRIAL 1,3C

SPORTSCASTER ACCUSED

SHIP OFF N.C. MAY BE BLACKBEARD'S 8A

► SHIPWRECKS: FICTION,
FACT; Science page, 8D



By Luc Novovitch, Reuters
Marv Albert: Says liaison
was consensual, 1C

SEPTEMBER 23, 1997

SLINE

NEWS

MARKET: Dow Jones industrial average
7996.83; Nasdaq index rises 9.09 to
surge bond yield drops to 6.35%, 1,3B.

SENTENCED: In Philadelphia,
s 12 years in prison for running the
in U.S. history, 2A.

BONUS SECTION

BusinessTravel

INNER WORKINGS

- Why trips don't work
like clockwork, 1E
- Golfing your way to
success, 4E
- Savoring stays in
small towns, 6E, 7E

VORAVA: Packing 125-mph winds,
ja California, 3A.

SPONSORSHIP: Taco Bell, KFC
sor 22 NCAA championships, includ-
s basketball finals, and get first dibs if
pionship game is created, 1B.

DATE: Funding campaigns. In USA
at long last, hearings begin. Will
serious about reform?" 11A.

work. More regulation will not," says
R-Calif. 11A.

self and vice president, 6A.

ARE THE STONES

Too old to rock 'n' roll?

Vowing not to bow
out gracefully,
Mick & Co. jam on
after 35 years



By Naomi Katten
The Boys: Left to right, Wood,
Watts, Richards, Jagger.

Mick: "Worked very, very hard," on set.

By Matt Menzies, USA TODAY

U.N. speech sets up clash with Senate

By Judy Keen
and Mimi Hall
USA TODAY

UNITED NATIONS — Pres-
ident Clinton said Monday that
he will ask the Senate to ratify
a controversial treaty banning
nuclear test explosions.

Speaking at the opening day
of debate at the United Na-
tion's 52nd General Assembly,
Clinton called the Comprehen-
sive Test Ban Treaty "the long-
est sought, hardest fought prize
in arms control." He said the
treaty will help "to prevent the
nuclear powers from develop-
ing more advanced and more
dangerous weapons."

His announcement sets the
stage for a confrontation with
Republicans in Congress. Many
of them oppose the pact, argu-
ing it would put the United
States at a disadvantage in fu-
ture hostilities. Clinton was the
first of 146 world leaders to
sign the treaty a year ago.

Sen. Thad Cochran, R-Miss.,
chairman of a Governmental
Affairs subcommittee, said he
will hold a hearing next week
on whether the United States
can count on its nuclear weap-
ons to work without testing.

"If it creates a more danger-
ous environment and is an in-
centive for others to cheat and
steal a march on the rest of the
world and puts us at risk, then
we would make a bad mistake
to approve the treaty," he said.

Getting a break?



Ted Turner

Accountants say if
Ted Turner structures
his \$1 billion gift to the
United Nations well, he
could end up making
\$100 million on the deal.

USA TODAY asked
the experts to explain
the best way to give a bil-
lion. 1B.

NASA still pondering Mir mission

By Juadine Henderson
and Shannon Tangonan
USA TODAY

The Washington Times

FINAL

www.washtimes.com

WASHINGTON, D.C., TUESDAY, SEPTEMBER 23, 1997 ***

PHONE (202) 636-3000
SUBSCRIBER SERVICE: (202) 636-3333 **25 cents**

-CIO
rb
ical
tions

says gifts
p union

H — AFL-CIO
eeney struggled
ce on the labor
nday, announcing
ll concentrate its
nizing workers
ncing politicians.
system is awash
ney, corporate
ign money," Mr.
ed to some 900
AFL-CIO's 22nd
vention, which
"It is corrupting
als, and it is cor-
our nation."
s executive coun-
paign-finance res-
es public financ-
free media time
and stricter limits

tributing "soft
ical campaigns
power the labor
eeney said. "We
money to political
give unions the
e, and we must
political candi-
support working

n was made yes-
e inquiry into a
ution the AFL-
en Action, a lib-
up that was ac-
th of helping
r the 1996 re-
of Teamsters

Clinton will send test ban to Senate



U.S. support: President Clinton and Secretary-General Kofi Annan arrive at the United Nations yesterday.

Announcement at U.N. sets stage for battle with GOP

By Paul Bedard
THE WASHINGTON TIMES

NEW YORK — President Clinton yesterday told world leaders gathered for the start of the 52nd session of the United Nations that he will send to the Senate for ratification a global pact to ban nuclear weapons testing.

The pledge sets up a titanic clash with congressional Republicans who oppose the pact, as do other promises Mr. Clinton made yesterday to back an aggressive expansion of the U.N. Security Council and the creation of a permanent war-crimes tribunal.

The president said the 146-nation Comprehensive Nuclear Test Ban Treaty will "help to prevent the nuclear powers from developing more advanced and more dangerous weapons. It will limit the possibilities for other states to acquire such devices."

The president's promises put him squarely at odds with Sen. Jesse Helms, the North Carolina Republican who chairs the Senate Foreign Relations Committee, and other lawmakers leery of giving the world body more power and

sovereignty over U.S. affairs.

Marc Thiessen, Mr. Helms' spokesman, said that the senator has "serious concerns" with all three elements of the president's agenda laid out at the United Nations yesterday — all of which the Senate would have to approve.

Senate Republicans said they were surprised by Mr. Clinton's announcement that he was sending the nuclear test-ban treaty to the chamber. Two-thirds of the Senate must vote in favor for the measure to pass.

But the treaty is already in trouble, with at least one signer — India — vowing not to ratify it and U.S. officials still trying to determine whether treaty signatory Russia violated the pact with an unexplained Aug. 16 "seismic event" near its Novaya Zemlya nuclear test facility.

"This treaty is not on the front burner," said Mr. Thiessen, who added that the Senate calendar is already full with the upcoming debate on Mr. Clinton's push to expand NATO to include Poland, Hungary and the Czech Republic.

see CLINTON, page A10

Reno under attack from administration

Clinton, Gore aides fight outside probe

By Warren P. Strobel
THE WASHINGTON TIMES

White House aides have begun a behind-the-scenes campaign of

the naming of the independent counsels.

The whispered second-guessing is part of the worried White House's strategy to stay off the

Clinton believes funds were legal

President Clinton said, "I am absolutely certain that we believed we were acting within the letter of the law," regarding fund raising by him and Vice President Al Gore. **A12**

calls coming under Justice Department review, the president and vice president have taken an

Legal doubts raised over HUD contracts

\$20 million deal went to Clinton donor

By George Archibald
THE WASHINGTON TIMES

The Department of Housing and

port says.

The report questions the legality of a financial-adviser contract awarded to Ernst & Young by

Chicago Tribune

Tuesday, September 23, 1997

Final
50c

TODAY'S TRIBUNE

bad news Bears ...



out Dave Wannstedt's job security are inevitable start. But how many more losses are inevitable?



and Sox ...

■ Candidates line up to fill the manager's job with the expected departure of Terry Bevington at season's end.

bs ...
s are out,
team
ke the
r the
in. Wait



and Illini.

■ As Iowa and Penn State loom for his 0-3 club, coach Ron Turner (left) inserts Tim Lavery at QB.

Bolden ruling could taint Shovel

Federal jurors say
ex-water chief set up

By Matt O'Connor
TRIBUNE STAFF WRITER

Jurors in the corruption trial of former Chicago Water Commissioner John Bolden found him guilty of tax evasion Monday but acquitted him of more serious charges, saving their harshest verdict for prosecutors.

Jurors agreed with defense contentions that the government entrapped Bolden, who is the highest ranking city official to be charged in the wide-ranging Operation Silver Shovel probe.

"We felt the government was overzealous," said juror Nina Henry of Chicago. "We felt they heard one thing from [corrupt former alderman] Allan Streeter and went off on a wild goose chase of sorts."

Bolden, who was charged with pocketing two \$1,000 bribes,

becomes the 10th defendant to be convicted in Silver Shovel. His case, however, represents at least a partial setback for prosecutors.

A key factor in the decision to acquit Bolden of extortion was Streeter's admission that he steered an undercover federal agent, posing as a corrupt businessman, to Bolden even though the alderman had had no previous corrupt dealings with the water commissioner, two jurors told reporters.

Streeter himself had been taking

cash bribes from the agent for years. Last year, Streeter pleaded guilty to taking \$37,000 in bribes and agreed to cooperate with authorities.

Juror Curtis Boyd of Cook County described Streeter as a "crook" and contrasted him with what he called Bolden's "beautiful background," a reference to Bolden's long career as a police sergeant.

"[Bolden] was set up ...

SEE BOLDEN, P. 1

U.S. offers peace to UN

Clinton extends
olive branches of
nuclear treaty and
back dues, calls for
world body to
make reforms.



Indiana air crash suit ends in accord

27 victims' families
to get public apology
\$110 million award

By Terry Wilson
and John Schmeltzer
TRIBUNE STAFF WRITERS

A three-year quest for a public accounting in the crash of American Eagle Flight 4184 ended abruptly Monday, when a federal judge announced a \$110 million settlement for the relatives of people killed when their transport plane slammed into an Indiana farm field.

The settlement ended efforts to force the plane's manufacturer, the French and Italian consortium Avions de Transport Regional, to admit the design of its rubber landing boot was insufficient for that pilot maneuver.



EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

October 2, 1997

THE DIRECTOR

MEMORANDUM FOR THE PRESIDENT

FROM:

Franklin D. Raines

A handwritten signature in dark ink, appearing to read "F. D. Raines", written over a horizontal line.

SUBJECT:

OMB Strategic Plan

Attached is the Office of Management and Budget's Strategic Plan, which was submitted to Congress on September 30 as required by the Government Performance and Results Act (GPRA).

OMB staff began work on this Strategic Plan over two years ago. Preparing the plan has been a challenging endeavor, and one that was open to OMB employees throughout various points in the process. Three Congressional consultation meetings were held on the draft plan; one item of Congressional interest was that you had an opportunity to see the document. Several agencies and members of the public sent us comments as well. The process has led to a much better understanding of what our goals are, and how we will go about achieving them. The Strategic Plan will serve as the foundation for the next step in the GPRA process -- an OMB Performance Plan.

Attachment

Office of Management and Budget



Strategic Plan FY 1998 - FY 2002

September 30, 1997

STATEMENT OF MISSION

The mission of the Office of Management and Budget (OMB) is to help the President in carrying out his constitutional and statutory duties. OMB fulfills this mission primarily by assisting the President:

- (1) To create policy relating to expenditures and receipts, regulations, information and legislation;
- (2) To manage the Executive Branch of the government in the faithful execution of laws, policies and programs;
- (3) By providing the highest quality of analysis and advice on a broad range of topics.

In assisting the President in managing the Executive Branch, OMB carries out numerous, OMB-specific, statutory responsibilities, and exercises various delegated authorities.

GOALS

Four general goals related to OMB's major management and policy responsibilities are presented in this Strategic Plan.

- | | |
|---------|---|
| Goal 1: | Recommend to the President spending, regulatory, tax, and other policies that fulfill the President's policy goals and promote sustainable economic growth. |
| Goal 2: | Provide management leadership to ensure the faithful execution of the enacted budget, programs, regulations and policies. |
| Goal 3: | Assist the President by providing analysis and advice on critical longer-range demographic, fiscal and economic trends, and on other significant issues. |
| Goal 4: | Improve OMB's means for accomplishing work, including development and use of its human resources and information systems. |

I. Introduction

The Office of Management and Budget has served the Presidency since 1921, when it was established as the Bureau of the Budget. The career staff of OMB works with policy officials to provide an institutional memory for the President and competent, objective staff support to help develop and carry out Presidential policies and programs and implement Executive Branch responsibilities.

A. OMB's Functions

OMB advocates the appropriate allocation and effective utilization of government resources. OMB assists the President in the preparation of the Federal budget and in managing its execution in the departments and agencies. In helping formulate the President's spending plans, OMB examines the effectiveness of agency programs, policies, and procedures; assesses competing funding demands among agencies; recommends funding priorities; and provides policy options. OMB works to assure that proposed legislation, and agency testimony, reports, and policies are consistent with Administration policies, including the President's Budget. Particular emphasis is placed on managing the coordination and integration of policies for cross-cutting interagency programs. On behalf of the President, OMB often leads in presenting and justifying major policies and initiatives related to the budget and government management before Congress.

OMB has a central role in providing leadership in the development, oversight and coordination of the Federal government's procurement, financial management, information, and regulatory policies as well as in their implementation. OMB helps to promote better program management, strengthen administrative management, develop better performance measures, and improve coordination of Executive Branch operations.

OMB carries out responsibilities under more than 200 statutory provisions, including the Budget and Accounting Act, the Budget Enforcement Act, the Antideficiency Act, the Balanced Budget Act of 1997, the Impoundment Control Act, the Line-Item Veto Act, the Government Performance and Results Act (GPRA), the Chief Financial Officers Act (CFOs Act), the Government Management Reform Act, the Federal Acquisition Streamlining Act, the Office of Federal Procurement Policy Act, the Paperwork Reduction Act, the Clinger-Cohen Act, and the Federal Credit Reform Act.

B. Relation of Annual Performance Goals to General Goals and Objectives

Selective descriptions of the performance goals and indicators that OMB expects to include in its annual performance plan are displayed for each of the four general goals in Part II of this strategic plan. Annual performance goals will be used in assessing the achievement of the general goals and objectives.

Frequently, policy issues that OMB addresses cannot be forecast in advance. Nevertheless, judgments can be made about the performance of some of OMB's work

using measures such as the timeliness of its products, the degree to which specific goals are achieved, and its role in the formulation and discussion of major Administration policies and issues.

Several annual performance measures will require OMB to develop baseline information. While OMB does record certain workload data, the amount and type of information collected will need to be expanded.

C. Means and Strategies Used in Achieving Goals and Objectives

Means and strategies specific to each general goal are described in Part II of this plan.

Over the next five years, OMB has assumed essentially stable funding, as contained in the President's fiscal year 1998 Budget. Most of OMB's funding is used to pay staff salaries and benefits, and the goals and objectives are premised on future OMB staffing that corresponds to present levels. The expertise and experience of OMB's staff is crucial to dealing with the broad array of major issues that have to be addressed, many on very short time lines, and to providing leadership for the development of policy and the improvement of management across the Executive Branch. OMB's resources are also used for information technology, which not only assists OMB staff to do its work in support of the President's Budget and many other endeavors, but also helps to provide the Congress with timely, accurate, coordinated information.

OMB uses many strategies to achieve its goals and objectives. The entire budget process, with its instructions, hearings, reviews, budget drafting, and justifications drives the development and coordination of policy; examines efficiency and effectiveness in order to improve programs; allocates resources in accord with Presidential priorities; and presents the President's program. The legislative and regulatory review processes likewise helps to sharpen and coordinate policies. OMB has many authorities to require and define the budgetary, performance, accounting, and other information that agencies must develop, the systems they use to keep and share it, and the analyses they should undertake.

OMB has other authorities to improve, by providing guidance and other means, the financial, procurement, grant, and other management functions of the Executive Branch. OMB staff is expected to provide leadership for and to be catalysts within interagency groups, including the President's Management Council, the Chief Financial Officers Council, the Budget Officers Advisory Council, the Chief Information Officers (CIO) Council, and other professional and programmatic groups. (See illustrative list at Appendix 2.)

OMB works cooperatively with the Congress and with congressional agencies such as the Congressional Budget Office and the General Accounting Office (GAO). OMB also works continuously with the agencies on a wide variety of policy development, budget, coordination and management issues. This contact occurs through formal Councils, informal working groups and individual meetings and conversations.

OMB does not operate programs, make grants or transfers, extend credit or insurance, collect revenues, or benefit from tax expenditures. OMB issues very few regulations.

The OMB annual performance plan will provide more information linking annual performance goals to OMB's overall goals and objectives. This plan will be consistent with OMB's internal planning process and will reflect the information and analyses used in preparing the fiscal year 1999 Budget, including program, policy, and management initiatives that may emanate from agency strategic and performance plans.

D. External Factors

A number of external factors, several of which are similar to those identified by other Federal agencies, can affect OMB's ability to achieve its goals and objectives. These include: a significant change in future OMB funding amounts from the assumed levels; enacted legislation that changes the statutorily-prescribed scope of several of OMB's functions; or changes in the respective policy or analytic responsibilities of various offices within the Executive Office of the President (EXOP). Particular external factors that could affect specific OMB goals and objectives are described in Part II of this plan.

E. Program Evaluation

In the course of drafting the plan, OMB reviewed and considered several analyses or studies of OMB's organization, work environment and processes, and implementation of several statutes. These analyses or studies were prepared both by OMB and by other parties, such as GAO.

OMB does not operate programs and a future determination of whether the general goals and objectives in this strategic plan were achieved will not require a program evaluation as such, and no program evaluations are scheduled. However, OMB will continue to prepare specific analyses or studies of its operational processes, organizational structure, and workforce utilization and effectiveness. OMB expects that these studies will be complemented by reviews of particular facets of OMB operations by outside parties, such as GAO.

II. General Goals and Objectives

Four general goals and 16 objectives related to OMB's major management and policy responsibilities are presented in this part of the plan.

The first goal focuses on OMB's assistance to the President in developing policies that will contribute to the fiscal strength of the Federal Government and the economic health of the Nation. This is reflected every year in the annual budget process which promotes analysis of options, policy and program recommendations, and resource allocation decisions.

All OMB staff are involved in assuring effective: management of programs, execution of statutory responsibilities, and implementation of policies and regulations in Federal agencies. OMB provides leadership, guidance and coordination to agencies in developing and administering systems and processes that promote greater efficiency and enhance managerial performance. These activities are the subject of goal two.

OMB provides analyses, estimates, projections and advice on a wide array of longer- range demographic, fiscal, and economic trends, and on other significant issues that affect the entire government. Goal three describes these functions.

Finally, to carry out these goals, OMB must attract and retain a high quality, diverse staff and wisely use its human, financial, and technological resources. Goal four indicates what actions OMB proposes to take to provide an attractive and effective workplace environment.

Goal 1. Recommend to the President spending, regulatory, tax, and other policies that fulfill the President's policy goals and promote sustainable economic growth.

The annual budget process provides a structure for the analysis and prioritization of spending, tax and other policies. Much of the work done by OMB is longer range (see Goal 3) but the results of that work are continuously reflected in the President's Budget.

Objectives

- A. Implement the five-year budget agreement to reach balance by 2002.** Follow up in each succeeding year to obtain enactment of tax, appropriations, and mandatory spending program policies consistent with the balanced budget agreement.

Relationship to Annual Performance Goals

The ultimate achievement of a balanced budget is not controlled by OMB. However, OMB's contributions in developing policy to affect this outcome can be measured. In particular, OMB's role in achieving enactment of a budget that conforms to the agreement can be assessed. In addition, the President's Budget contains recommendations for reforming or, where necessary, eliminating less effective or lower priority programs; and for shifts in resource allocations or policy changes to meet Presidential priorities more effectively within a balanced budget framework. Goals based on these recommendations will be included in the OMB annual performance plan.

Means and Strategies

OMB will work with the Congress to follow up on the Balanced Budget Act and seek to assure that balance is achieved in 2002 and sustained thereafter. In particular, OMB will follow up to ensure that: (1) the discretionary caps and PAYGO limits are not breached; and (2) within those limits, the President's priorities and policies are protected to the maximum extent possible. OMB's work will include analyses of the effects of particular tax, appropriation, and mandatory spending policies, continued enforcement of sound budget concepts, and cross-cutting efforts to enhance fiscal discipline.

External Factors

Achievement of a balanced budget by 2002 is premised on spending and revenue projections that are based on economic assumptions for the next five years. A significant change in economic conditions could affect the ability to achieve this objective. In addition, Congressional cooperation, through the enactment of revenue and spending measures that achieve balance by 2002, is essential.

- B. Ensure that the budget documents are timely, accurate and of high quality. Provide prompt and accurate scoring for legislation that affects the budget.**

Relationship to Annual Performance Goals

This objective lends itself to clear, quantifiable measures of performance, such as the timeliness and accuracy of budgetary documents and of the scoring of legislation. OMB currently asks users to comment on the quality of the budget document.

Means and Strategies

Offices in OMB will continue their well-defined roles in reviewing and critiquing agency plans and budget requests, making resource allocation recommendations, producing the budget documents, supporting the budget during the Congressional budget process, and working to sustain budget concepts. OMB will propose policy options that meet overall budgetary objectives and shift resources away from programs which are less effective or important in order to fund programs which support economic growth or advance Presidential priorities. OMB will make recommendations to the President for budget requests to Congress based on critical review of agency planning and budget submissions. In this context, for example, a significant effort is underway to improve agency planning for capital projects.

External Factors

While OMB has overall control over the development of the annual budget documents, and over legislative scoring, its ability to develop the budget accurately and on time depends to a large extent on the accuracy and timeliness of agency submissions of technical budget information and the timeliness of Congressional action on yearly appropriation bills. While OMB should be expected to detect and correct serious errors in agency submissions, it would be impossible to prepare an accurate and timely budget if agency submissions were significantly delayed or of poor quality.

- C. **Ensure that policies developed and reviewed by OMB are consistent with the President's fiscal, economic and other policy priorities as reflected in the budget.**

Relationship to Annual Performance Goals

Each annual budget contains a series of new initiatives as well as descriptions of ongoing programs designed to achieve policy objectives. The extent to which these initiatives and objectives are achieved and lead to improved results can be described in both quantitative and qualitative terms. It will be important to properly characterize OMB's role in the results achieved.

Means and Strategies

OMB provides fiscal, economic, and other advice to the President on ways to shape his policy goals and on methods to achieve those goals, with emphasis on such issues as increasing economic growth by improving fiscal discipline, assessing whether the benefits of current and proposed government programs outweigh

costs, and increasing the efficiency of government operations. OMB also reviews current and proposed policies, including regulatory policies, to ensure that they are consistent with statutory principles and the fiscal, economic, regulatory and information policy priorities of the President. As appropriate, OMB staff will include the impact of policy decisions on growth in their budget, legislative, and regulatory review issue papers.

External Factors

OMB's ability to achieve this objective will depend to at least some extent on the other offices in the Executive Office of the President and other agencies that may have important roles in such policy development.

Goal 2: Provide management leadership to ensure the faithful execution of the enacted budget, programs, regulations and policies.

Management of the Federal government is a complex process that requires OMB to provide policy guidance, coordinate activities and assist with implementation within and across agencies. All organizational units within OMB are actively involved in the tasks of management: planning, analysis, organization and direction.

To leverage its own staff capacities, OMB provides leadership to groups of agency managers who share the work of policy development and identifying and implementing the means to better manage Federal resources. (For an illustrative list of these groups see Appendix 2.)

Linking budgetary resource decisions to the management of agency programs is critical. For example, implementation of new information technology initiatives requires both thoughtful guidance and proper allocation of budget resources over the expected development period.

To more effectively link resource allocations and program management, OMB undertook a major reorganization in 1994. This reorganization, called OMB2000, placed the responsibility for oversight of program management in OMB's Resource Management Offices. In their role, the Resource Management Offices receive support from OMB staff offices; and technical assistance from the three statutory offices (the Office of Federal Financial Management, the Office of Federal Procurement Policy, and the Office of Information and Regulatory Affairs). The statutory offices retain the responsibility for developing and issuing policy.

Objectives

- A. Work within and across agencies to identify solutions to mission critical problems.**

Relationship to Annual Performance Goals

OMB works continuously with the agencies on a range of management initiatives including identifying major management problems and, in cooperation with the agency or agencies affected, attempting to find ways of reducing or eliminating the problems. In each year's budget, major cross-cutting and agency specific management initiatives will be presented along with approaches to solving them. OMB's role will be clearly highlighted. These presentations will serve as one source of information for the OMB annual performance plan.

Means and Strategies

For cross-cutting issues such as credit policy, financial systems standards, the year 2000 and others, OMB will work closely with agency representatives, the Congress, the GAO, the National Performance Review and others inside and outside government to find the best resolution to these issues. For individual agency problems, general guidance is supplemented with the sharing of good practices and hands-on assistance in resolving specific problems.

External Factors

Responsibility for accomplishing this objective largely rests with agency managers, who must actively and effectively carry out both agency-specific and cross-cutting management initiatives.

- B. In carrying out the Government Performance and Results Act: ensure that agency performance plans are fully integrated into the budget process; prepare a government-wide performance plan that presents performance goals on a functional basis and includes performance information for program and policy initiatives in the budget; complete the performance budgeting pilot projects; and, ensure that agency program performance reports are coordinated with the agency accountability reports prepared under the Government Management Reform Act.**

Relationship to Annual Performance Goals

Prospective measures include: the extent that performance information was available to be used in making budget decisions; the extent that the government-

wide performance plan presentation is consistent with the format and content specification in the objective; the meeting of milestone dates for designating performance budget pilot projects, preparing the required alternative presentation in the President's budget, and transmittal of the OMB report to Congress; and the issuance of guidance covering preparation and submission of an integrated program performance and accountability report.

Means and Strategies

OMB will use its processes for budget formulation to promote integration of the performance plans with the budget process. A function-based presentation of performance goals will provide a context for cross-cutting analyses and presentations. OMB must consult with potential pilot project agencies to identify candidate pilots, and develop adequate selection criteria that will allow pilots to be designated and proceed. The evolving relationship of the program performance and accountability reports will be discussed with the agencies and Congress.

External Factors

None identified.

C. Achieve savings, improve quality and increase customer satisfaction in agency procurements.

Relationship to Annual Performance Goals

OMB's long term goal is a Federal procurement system comparable to those of high performing commercial enterprises. OMB will identify annual goals that gauge OMB's success in promoting establishment of a high performing procurement system in which agencies pay less for products and services, increase the value received for the dollars spent, and ultimately improve the support acquisition provides to government programs.

Means and Strategies

To achieve this goal, OMB will work with agencies to facilitate and promote agency use of commercial buying strategies and practices. In doing so, OMB will work with the National Performance Review in maximizing the use of discretion and business judgment by contracting officials and minimizing rule-based procedures to permit negotiation of the most advantageous agreements. OMB will also collaborate with the Federal Acquisition Regulation (FAR) Council, the Federal Procurement Council, and front-line contracting professionals to

accomplish these goals. Specifically, to increase agency use of commercial buying strategies and processes, OMB will work with these groups to secure the discretion under applicable laws and regulations necessary to employ commercial buying practices and will issue appropriate policy guidance. For example, in seeking to make consideration of past performance the norm in source selection, OMB will work with the FAR Council to complete necessary regulatory revisions and will publish a revised best practices document. In addition, OMB will encourage and monitor agency progress in adopting reforms with high potential for improving acquisition. For example, OMB will obtain, review, and conduct follow-up on agency plans to convert services contracts to performance-based ones. And to facilitate conversion, OMB will work with agencies to draft model contract documents.

External Factors

These efforts cannot succeed without the assistance of the agencies. In particular, the Department of Defense, the General Services Administration, and the National Aeronautics and Space Administration, as members of the FAR Council and the largest buying and procurement training entities, as well as other major procuring agencies, have a critical role in institutionalizing these reforms.

- D. Partner with agencies to achieve the goals set forth in each year's Federal Financial Management Status Report and Five Year Plan, emphasizing particularly the priority goals relating to financial systems, audited financial statements and GPRA implementation.**

Relationship to Annual Performance Goals

OMB will assist agencies in their efforts to obtain clean audit opinions on their financial statements (for the 24 agencies subject to the CFOs Act) and on the government-wide financial statement. As part of the fiscal year 1997 financial statement audits, OMB and the Congress will receive information on the extent to which agency financial systems comply with the Federal Financial Management Improvement Act of 1996. As part of the overall effort to integrate agency systems, OMB will work with the agencies to increase the use of the multi-purpose application card to make payments for travel, small purchase transactions and fleet management.

Means and Strategies

To accomplish this objective, OMB will issue policy and guidance to agencies; offer expert advice to solve problems; help agencies address cross-cutting issues; and help remove obstacles.

External Factors

Continued progress in systems development for both core and feeder financial systems in the agencies is essential to meet the objective. This progress will depend on timely joint development of new systems specifications and a new approach for procuring these systems. The number of clean audit opinions is contingent, in part, on OMB, GAO, Treasury, and the agencies resolving several crosscutting issues in audit policies and procedures both on an agency-specific and government-wide basis.

E. Maximize social benefits of regulation while minimizing the costs and burdens of regulation.

Relationship to Annual Performance Goals

OMB conducts comprehensive, timely and objective reviews of regulations, in particular to assess their benefits and costs, to assure that they accurately reflect Administration policy, and to assure that they appropriately carry out statutory requirements.

Means and Strategies

OMB will work to ensure that the quality of data and analyses used by agencies to make regulatory decisions improves. This will require more focussed use of agency resources and better planning to ensure adequate time and support for such data gathering and analysis. OMB will work with agencies to support further research to develop and improve techniques to measure benefits and costs. Using its role as central regulatory reviewer, OMB will support more uniform application of standardized assumptions and methodologies across regulatory programs and agencies. Similarly, OMB will work with agencies to develop data and methodologies to determine whether existing regulations need to be reformed and, if so, how resources should be devoted to such reform. OMB will develop a pilot baseline measure of net benefits for Federal regulations, and will work with agencies to increase quantitative measures of net benefits. OMB will work with agencies in seeking to maximize net benefits for all regulations reviewed by OMB.

External Factors

Performance depends to a great extent on agency capability, which in turn is affected by current program demands; by the need in some agencies to respond quickly to emergencies, such as health, safety or environmental crises; and Administration and legislative priorities. Also, potential regulatory reform legislation or oversight activities may affect OMB's ability to achieve this goal.

- F. Improve the performance of Federal programs and the quality of public access to information and services by promoting sound Federal and national information, information technology, and statistical policies and practices.**

Relationship to Annual Performance Goals

Although OMB does not control how agencies use information and technology, OMB can help agencies decrease the number of troubled IT systems, solve the year 2000 problem, eliminate unnecessary duplication, increase electronic dissemination of information, improve the Federal statistical system, and improve information security and privacy.

Means and Strategies

To achieve this objective, OMB creates policy and oversees its implementation by the agencies. OMB leverages the efforts of interagency groups such as the Chief Information Officers Council to improve the quality of policy, increase its adoption, share best practices, and reduce duplication of effort. For example, OMB developed reporting requirements to measure agency year 2000 progress in consultation with the CIO Council and the Congress. These reports are being used as a management tool by the agencies, OMB and the Congress to assure that all mission-critical Federal systems are year 2000 compliant by December 31, 1999.

External Factors

Performance depends to a great extent on agency capability. Policy changes in turn are subject to the astonishing speed with which technology is advancing in the information technology area.

- G. Conduct an effective interagency legislative and executive order coordination and clearance process.**

Relationship to Annual Performance Goals

Two traditional and long-standing OMB functions are to coordinate the interagency review and clearance for submission to Congress of agencies' legislative proposals, testimony, and views letters on legislation, and to coordinate the interagency review and clearance of draft executive orders for submission to the President.

Means and Strategies

OMB strives to ensure that the views of all concerned agencies are taken into account and addressed in communications to Congress on legislation and that these communications reflect Administration policies accurately. OMB also strives to ensure that the views of all concerned agencies are taken into account and addressed in draft executive orders that are submitted to the President for consideration. OMB will continue to work cooperatively with Executive branch agencies to manage effectively functioning interagency legislative and executive order coordination and clearance processes.

External Factors

The primary external factor is the cooperation of agencies in the interagency legislative and executive order coordination and clearance processes and allocation of appropriate resources by the agencies to these activities.

Goal 3: Assist the President by providing analysis and advice on critical longer-range demographic, fiscal and economic trends, and on other significant issues.

OMB provides the President with analysis and advice on long range demographic, fiscal and economic trends and other issues. OMB maintains expertise across a broad range of programs, policies and economic issues and uses a variety of analytical tools, including macroeconomic analysis and cost-benefit analysis.

Objectives

- A. Provide accurate and timely assessments of the financial condition of the Federal Government.**

Relationship to Annual Performance Goals

OMB will continue to publish with the President's Budget annual analyses of how the Government's and the Nation's financial condition have changed and may change in the future as a result of the Government's operations. These analyses may be judged by the comprehensiveness of the conceptual framework, the quality of the data, the clarity of the assumptions on which the projections depend, and the usefulness to decision-makers of the results.

Means and Strategies

Providing assessments of the financial condition of the Federal Government has both management and analytic components. In addition to its work on agency and

government-wide financial statements, OMB also provides analyses of aspects of the financial condition of the Government, and prepares and publishes long-range estimates that present the effects of various demographic, economic, and other assumptions on the Federal budget.

External Factors

Assessments of the financial condition of the Federal Government will depend greatly on data supplied by individual Federal agencies, and generally the assessment can only be as accurate as the data supplied. In addition, OMB depends on other outside information, and the accuracy of this information can influence the accuracy of the OMB assessment.

- B. Develop and present accurate long-range demographic, fiscal and economic trends each year in coordination with the Treasury and the Council of Economic Advisors (CEA).**

Relationship to Annual Performance Goals

The accuracy of economic and technical assumptions is measurable through comparison to actual economic data. A difficulty with such measurement is the time lag that occurs between the development of the assumption and the availability of data with which to measure its accuracy. For example, it may be a number of years before the accuracy of default rate assumptions for longer-term loans can be measured.

Means and Strategies

The "Troika" consultation with Treasury and CEA, which develops the major economic assumptions for the President's Budget, is based on analysis of the historical trends and relationships among economic indicators, assisted by a macroeconomic model. However, considerable judgement is required to assess incomplete data, and to identify changes and discontinuities in economic relationships. Technical assumptions for the programs are made by the responsible agencies, with OMB exercising some quality control. Because of the nature of government programs, many of these assumptions are extremely difficult to estimate; in these cases, the strategy is experimentation with alternative methods and specifications with a goal of improving the estimates over time.

External Factors

The economic and technical assumptions on which the Budget is based represent the Administration's estimates of what is most likely to occur if the President's

policies are enacted and implemented. Thus, they may not match the “actual” data if some of the President’s policies are not enacted and implemented, if understanding of the effects of policies or the underlying relationships is less than perfect, or if unexpected events occur. Economic assumptions are affected by the quality of economic statistics, such as the measurement of productivity and prices. Technical assumptions are affected by the quality of agencies’ program data, their accessibility, and the quality of analysis of the factors that influence them.

C. Complete objective and high-quality analyses on priority policy issues, and disseminate the results to the President and/or other appropriate policy officials in the Executive Office of the President.

Relationship to Annual Performance Goals

Neutral, dispassionate analysis of programs is among the most fundamental functions of OMB. Perhaps more than any other function, this is, and has been, the way OMB can best serve the President. While final recommendations will and must consider other factors as well, OMB has historically performed this type of analysis. Analysis can be essentially of two types: (1) analysis of programs in preparation for events (appropriating or authorizing legislation) that can be readily identified well in advance, or (2) analysis of fast breaking issues or problems (such as the desired response to a natural disaster). Providing judgments informed by analysis unfettered by biases others may bring to the matter is a goal to be sought consistently by OMB.

Means and Strategies

During annual planning processes and throughout each year, OMB identifies policy issues appropriate for analysis. Some of those issues will be for purely internal OMB consumption; some of those issues will be for consumption outside OMB, up to and including the President. Some of those issues will be prepared by individual OMB staff, and some will be prepared by OMB teams, possibly in combination with other agency staff or in consultation with other EXOP agencies. OMB involvement in policy analysis and advice may include participation in interagency meetings on Administration policy development, both short- and long-range, or other discussions among policy officials. In most cases, OMB analysis of issues will include discussions of the advantages and disadvantages of a variety of policy choices, and the implications and tradeoffs among policy choices.

External Factors

External factors that could affect achievement of this objective, in part, include: the need for cooperation of other participating agencies; and the extent to which

other key actors can provide the primary data and analyses necessary as inputs to OMB analyses. Also, longer range analysis of programs can be interrupted by shorter range, more immediate fiscal crises and/or "firefighting" assignments.

Goal 4: Improve OMB's means for accomplishing work, including development and use of its human resources and information systems.

Objectives

A. Recruit, develop, and retain a high quality and diverse staff.

Relationship to Annual Performance Goals

The following performance measures may be used for this objective: differences between current staff and recruited staff with respect to gender, ethnicity, and disability (reporting will be against a baseline, no quantitative goals will be set); turnover rate among entry level staff compared with their government cohort; and increase in opportunities for staff access to mentors.

Means and Strategies

To accomplish this objective, OMB will: develop and carry out a plan for improving the effectiveness of on-campus and mid level recruiting; explore options for creating a work place environment that recognizes individual needs within workload and resource constraints; and continue and enhance mentorship programs, encouraging highly qualified senior staff members to serve as mentors.

External Factors

The training and experience of OMB staff make them highly attractive in the job market. Despite the importance of the work done at OMB and the high value placed on it, a substantial upward change in the current private-public sector pay differential for OMB staff with highly valued analytic and knowledge-based skills in certain high-demand business areas, e.g., health care economics, could offset OMB's initiatives to improve retention.

B. Increase the opportunities for all staff to enhance their skills and capability.

Relationship to Annual Performance Goals

Among the performance goals OMB may use to record achievement of this objective are: the percentage of OMB staff during the fiscal year in rotational assignments (internal and external), or on temporary assignment or detail

elsewhere; each division develops and carries out a staff training and development plan; training and development opportunities are available to all staff; and the performance appraisal and awards process for all staff is strengthened and enhanced.

Means and Strategies

To accomplish this objective, OMB will: increase the number of staff participating in both internal and external rotational opportunities; continue to assign an "on the job" coach for the initial year of each new employee; encourage managers and staff to develop and fulfill individual development plans, especially for new hires.

External Factors

None identified.

C. Leverage information technology resources to aid OMB staff in fulfilling their mission requirements.

Relationship to Annual Performance Goals

Among the performance goals OMB may use to record achievement of this objective are: an increase in the number and types of information resources available to the OMB staff; improved methods of accessing information and information processes to make information more readily available; ensure that the computer systems used in support of OMB's responsibilities for budget decision making, preparation and execution keep pace with technological change and evolving budgeting requirements; and improved methods for communicating information internally and between OMB and other agencies.

Means and Strategies

Examples of activities that have been or will be undertaken to achieve this objective include: placing official statements of policy on the external Homepage; broadening the content and facilitating the use of OMB's internal Homepage; improving the tracking of controlled correspondence; automating routinely used forms; making legislation-related information and statistics and status reports on paperwork reviews and regulatory reviews available electronically to OMB staff; using electronic means to deliver to OMB staff current economic data, economic and technical assumptions, analytical databases and models, staff analyses of short- and long term economic and fiscal conditions, and other cross-cutting analyses; moving budget systems over the next few years from an outdated mainframe computer to distributed technology; improving electronic communications between

OMB and the agencies; and facilitating "Work from Home" via personal computers.

External Factors

Implementation of each of the above depends heavily on the availability of resources, not only in OMB but also in the Office of Administration (OA) in the Executive Office of the President. Progress is dependent not only on assistance from OA, but also on further refinements in the products which are available from vendors. Agency cooperation is needed to make progress in moving to the electronic transfer of information.

Plan Development

This section provides a brief description of the process used by OMB to develop its strategic plan.

Steering Group: In the early summer of 1995, a “Steering Group” (SG) was established within OMB to oversee the process of preparing an OMB strategic plan. Chaired by OMB’s Deputy Director for Management (DDM), the SG was composed of about a dozen staff from various units in OMB, and assured that all OMB staff had an opportunity to participate in the evolution of the plan.

First Phase: The first phase of the development of OMB’s plan lasted about a year -- from early in the summer of 1995 to the end of the summer in 1996. Initially the SG reviewed a broad range of information about the development of GPRA, strategic planning techniques, the historical context of OMB, and experiences with strategic planning in other countries and agencies.

After reviewing the information and holding a number of discussions, the SG concluded that a wide-ranging dialogue about OMB’s mission, organization, functions and priorities among senior OMB staff was required in order to establish the foundation for an effective OMB strategic plan. It was decided that a two-day, off-site meeting in August 1996 was the best forum for such a dialogue.

The SG developed the agenda and put together the background materials for the meeting. A series of four “brown bag” meetings, to which all OMB staff were invited, was held in July 1996 on “the strategic issues likely to confront OMB in the next decade” as part of the preparation for the August session. A summary of these discussions was included in the materials provided to those attending the off-site meeting.

The OMB Strategic Plan Working Session was held on August 15-16. The participants included almost all OMB policy officials and senior career staff but there were also a number of other career staff present including branch chiefs, support staff and examiners/analysts.

Second Phase: This phase lasted from August 1996 until July 1997. The objective was to produce a draft OMB strategic plan that could serve as the basis for Congressional consultations and review and comment by other stakeholders.

Several activities were the focus of this stage of the process:

- ◆ **Briefing the Director:** Franklin D. Raines, the Director of OMB, was confirmed by the Senate on September 6, 1996. In early fall, the SG briefed the new Director on the planning process to date and received his views and guidance on both process and

substance. He took an active role in preparing the Mission Statement and has carefully reviewed the entire plan.

- ◆ Producing a Draft Plan: The SG prepared a summary of the August Working Session, and subsequently produced outlines and then drafts of an OMB strategic plan. These documents were reviewed and commented on by OMB staff in an iterative process.
- ◆ Operating Plans: In order to meet the needs of the agency's internal planning process, each office in OMB was asked to prepare an operating plan covering its activities. The units were asked to prepare their plans in the context of the draft outline of the OMB strategic plan. The SG then reviewed the individual plans to assure that there was consistency between the OMB strategic plan and the operating plans and that they reinforced one another.
- ◆ "Standdown" Day: At the end of February 1997, all OMB units devoted an entire day to having their staffs discuss two subjects: (1) the unit's operating plan (then under development); and (2) the draft outline of the OMB strategic plan (each unit was asked to provide written comments on the draft).

The various reviews and multiple discussions described above culminated in a draft plan (dated July 23, 1997) that was used as the basis for Congressional consultation and stakeholder review. Copies of the draft strategic plan were provided to the House and Senate Appropriations Committees, the House Government Reform and Oversight Committee, and the Senate Governmental Affairs Committee. Copies of the draft plan were also made available to GAO and the Congressional Research Service (CRS) in the Library of Congress. Several Congressional consultation meetings were held on the plan.

Copies of the draft plan were also provided to all Cabinet departments, many independent agencies, and other offices within the Executive Office of the President. A specific distribution was made to all agency Chief Financial Officers, Inspectors General, Chief Information Officers and members of the President's Management Council. In addition, the draft plan was posted on OMB's website so that the general public could have access to it.

The draft strategic plan was revised significantly as a result of views expressed during the Congressional consultation meetings, written assessments prepared by GAO and CRS, and comments from several agencies and public individuals. The final plan reflects the salient comments received during the consultation process and a final internal review within OMB.

Third Phase: The operating plans referred to above are currently being reviewed in the context of the strategic plan to elicit from them key performance measures which will be used in the development of the OMB performance plan.

**Illustrative List:
Interagency Working Groups**

Accounting and Auditing Policy Committee
Budget Officers Advisory Council
Chief Financial Officers Council
Chief Information Officers Council
Electronic Processes Initiatives Committee
Encryption Task Force
Executive Council on Integrity and Efficiency
Federal Accounting Standards Advisory Board
Federal Acquisition Regulation Council
Federal Credit Policy Working Group
Federal Procurement Council
Government Information Technology Services Board
Information Technology Resources Board
Interagency Council on Administrative Management
Joint Financial Management Improvement Program
National Partnership Council
President's Council on Integrity and Efficiency
President's Management Council
Regulatory Working Group
SBREFA Small Business Panels



THE WHITE HOUSE
WASHINGTON

'97 OCT 8 AM 10:30

October 3, 1997

10-7-97

ACTION

MEMORANDUM FOR THE PRESIDENT

FROM: JOHN H. GIBBONS 

SUBJECT: Presidential Early Career Award for Scientists and Engineers

I. ACTION-FORCING EVENT: The second annual award of the Presidential Early Career Award for Scientists and Engineers.

II. BACKGROUND: The Presidential Early Career Award for Scientists and Engineers was established by Presidential directive February 1, 1996. The award was created to recognize and honor outstanding scientists and engineers at the outset of their independent research careers. The Presidential award recipients are expected to broadly advance science while contributing significantly to the missions of nine departments and agencies, namely the Departments of Agriculture, Commerce, Defense, Energy, Health and Human Services, and Veterans Affairs, the Environmental Protection Agency, National Aeronautics and Space Administration, and National Science Foundation. This award replaces the Presidential Faculty Fellows, which were nominated solely by the National Science Foundation.

Sixty awards, divided amongst the nine departments and agencies, will be given every year. The award nominations are chosen by the agencies and forwarded to the White House Office of Science and Technology Policy. The award recipients will receive substantial research support from their nominating agency over a five-year period.

I am forwarding the award nominees for your review and approval to receive the Presidential Early Career Award for Scientists and Engineers. The requisite name checks on the nominees have been completed.

III. RECOMMENDATION: Approve the following 60 nominees for the 1997 Presidential Early Career Award for Scientists and Engineers.

_____ Approve _____ Approve as Amended _____ Reject _____ No Action

National Science Foundation

Jill E. Bargonetti - "To recognize excellent scholarly work in cancer-related studies of cell growth and gene expression and involvement of undergraduate, graduate, and especially minority students in the discovery process."

Peter N. Belhumeur - "For developing innovative concepts and student laboratories in appearance-based modeling for computer applications and forging interdisciplinary links to physiology of human vision."

Geoffrey E. Hill - "For original contributions to understanding evolutionary biology, specifically avian sexual selection, and integrating a fundamental research program with public science education."

Daniel P. Lathrop - "For innovative contributions to research and education of undergraduates in non-linear properties of fluid interfaces relevant to understanding turbulence, optical fibers, and black holes."

Jon P. Longtin - "For outstanding research on laser-liquid interactions important in manufacturing, materials processing, and biological systems and outreach activities for high school students and prospective teachers."

Timothy A. McKay - "For excellent contributions to a major optical sky survey, particularly the interpretation of gravitational lensing, and for involving the public and students at all educational levels in research activities."

Steven W. McLaughlin - "For leadership in the development of optical recording systems capable of storing information in high-capacity non-binary formats and development of novel courses in communication theory."

Renee J. Miller - "To recognize excellent contributions to solving problems of schematic heterogeneity in database-management systems and retaining women and minorities in computer science."

David P. Morton - "For innovative research on computational methods for large-scale systems optimization and decision-making in the utilities industry, finance, and manufacturing and helping students gain industrial experience."

Linda K. Nozick - "To recognize development of innovative solutions to problems associated with transportation of hazardous waste and encouraging middle and high school students to pursue engineering careers."

Katherine Okikiolu - "To recognize innovative research in geometric analysis, particularly the determinant of the Laplacian under smooth perturbations, and developing student workshops and mathematics curricula for inner-city children."

Ann M. Sastry - "For outstanding research on predictive models for selection and repair of fibrous materials such as those used in structural design or human biology and introducing students to interdisciplinary team learning."

Lori A. Setton - "To recognize leadership in education and research in understanding and restoring biomechanical function to tissue degenerated by injury or aging, especially in the spine."

Jaswinder P. Singh - "For outstanding contributions to computer engineering education and research in the area of parallel architecture and software development, including results applicable to protein structure determination."

Eileen M. Spain - "For outstanding contributions to the synthesis of thin films essential to fabrication of reliable semiconductor materials and providing laser laboratory opportunities to high school students."

Florence I. Thomas - "For outstanding interdisciplinary research on the impact of organisms on nutrient and pollution flow in marine environments and development of an interactive display in a public aquarium."

Lonny L. Thompson - "To recognize excellent scholarly work on predictive models for structural acoustics applicable to noise suppression and sonar tracking and facilitates student involvement in real-world engineering problems."

Daniel W. van der Weide - "For pioneering research on nanoscale-dimension electric circuits and development of a web-based virtual laboratory that provides student access to advanced scientific instrumentation."

Patricia A. Van Zandt - "For outstanding contributions to cognitive research and education, especially in development of mathematical and computer models for perception, cognition and decision-making."

Miguel Velez-Reyes - "For original contributions to engineering education and research on power systems applicable to large systems that transfer power among multiple suppliers in the electric power industry."

National Aeronautics and Space Administration

Elfatih A. B. Eltahir - “For outstanding accomplishment in hydrology and hydroclimatology by combining theory and remote sensing observations to better understand the links between the biosphere and the atmosphere and their implications for regional water resources in the tropics.”

Jonathan A. Foley - “For his leadership and innovation in modeling the global biosphere yielding the first of a next generation of earth system models that dynamically link biological and ecological, hydrological and climatological processes in ways that are fully interactive.”

Cila Herman - “For innovative research in engineering science, and for establishing a creative synthesis of research and education in the undergraduate curriculum at The Johns Hopkins University.”

Mark V. Hurwitz - “An outstanding astronomer, instrument builder, and leader, Dr. Hurwitz has acquired critical data on interstellar gas that will dramatically improve our understanding of star formation processes.”

Todd T. Schlegel - “In acknowledgment of the unique contribution your research will make to the understanding of vestibular-autonomic interactions in response to altered gravitational forces.”

Eun-Suk Seo - “For her seminal work in demonstrating a practical approach to making fundamental measurements required for understanding cosmic-ray particles acceleration in shock waves from exploding stars.”

Veterans Administration

Michael Gaziano - “For major contributions to the understanding of mechanisms which underlie the associations of life style factors with the risk of coronary heart disease, and for research on the role of hyperlipidemia and lipid-lowering on the risk of coronary heart disease in the elderly.”

Martin Gluck - “For outstanding contributions to the field of neurobiology research focusing on the role of mitochondrial dysfunction and cell injury in neurodegenerative diseases, such as Parkinson’s Disease and stroke.”

National Institutes of Health

Russ B. Altman - “For outstanding leadership and accomplishment at the intersection of research in the medical computer sciences and biotechnology.”

Juan C. Izpisua-Belmonte - “For innovative studies defining genetic networks and signaling pathways which establish the pattern of the developing limb, providing insight into the etiology of birth defects.”

Anirvan Ghosh - "For significant contributions to understanding how the brain develops its complex organizational structure by constructing a cell culture system that mimics the developmental programming of early brains."

Macrae F. Linton - "For novel research approaches and creative strategies for possible treatment of atherosclerosis that lead to reducing death and disability from vascular diseases."

Peter Mombaerts - "For innovative genetic approaches to the field of sensory neurobiology which have furthered our understanding of the development of sensory systems."

Michael K. Rosen - "For research that will characterize a major regulatory pathway controlling cell division and motility, revealing the nature of defects in this pathway that lead to metastatic cancers."

Patrick J. Stover - "For the unique discovery of a new enzyme which metabolizes folate in mammals."

Michele Somes Swanson - "For incisive work on the genetic and biologic factors that contribute to the pathogenicity of the *Legionella pneumophila*."

Roland Michael Tisch - "For seminal work on the early stages of the disease processes for Type I Diabetes Mellitus demonstrating that diabetes can be prevented in an animal model."

Sharon Lynn Walsh - "For creativity and leadership in integrating clinical pharmacology and behavioral sciences in innovative studies for understanding and treating cocaine dependence."

David A. Wassarman - "For the development of a novel set of genetic screens that identify components of the complex mechanism that regulates gene expression."

Department of Energy

Bruno S. Bauer - "For contributions in high-energy science that allow the above-ground experiments essential for science based stockpile stewardship."

Andrew Brandt - "In recognition of his leading role in the study of diffraction phenomena and his contributions to the experimental study of proton-proton collisions at very high energies."

David J. Dean - "In recognition of his research in nuclear structure physics and critical contributions to the development of the Shell Model Monte Carlo methods, making possible the extension of shell model calculations to heavier nuclei."

Lori Ann Freitag Diachin - "In recognition for her pioneering work on the design of techniques for visualizing large data sets in interactive virtual reality environments."

Thomas J. Matula - "For experimental research into the fundamental mechanisms of sonoluminescence that provided theoretical, computational, and experimental benefits to Inertial Confinement Fusion studies."

David Newman - "In recognition of seminal contributions to the theoretical understanding of turbulence and transport in magnetic fusion devices."

John Shanklin - "In recognition of his internationally acclaimed research on the structure and function of a class of enzymes (desaturases and hydroxylases) that introduce double bonds or hydroxyl at specific sites between pairs of carbon atoms in long-chain fatty acids."

Department of Defense

Nicholas L. Abbott - "For research on protein partitioning and on micromachining and molecular self assembly, making possible fabrication of microelectrodes with chemically tailored surfaces for environmental sensors."

David S. Citrin - "For developing a comprehensive theory of excitation-polaritons in semiconductor nanostructures, making possible new ways of controlling high speed optical switching devices of greatly enhanced bandwidth."

Robert Lewis Clark, Jr. - "In recognition of outstanding research and development in the field of adaptive structures involving active noise and vibration control."

Elliot Douglas - "In recognition of exceptional chemistry research directed toward understanding how molecular parameters and processing affect material properties for liquid crystalline thermosets."

Joel T. Johnson - "For research on polarimetric passive remote sensing of three dimensional rough surfaces, including numerical methods for scattering calculations, applicable to remote sensing and target identification."

Ying-Cheng Lai - "For outstanding research innovation in theoretical studies of the effect of chaos in laser propagation."

Peter Schiffer - "In recognition of pioneering research on geometrically frustrated magnetic systems, which has rendered new insights on the complex behavior of highly degenerate ground-state systems."

United States Department of Agriculture

Eric J. Gustafson - "Pioneering the use of spatial models to assess the ecological impacts of alternative management practices on real and hypothetical landscapes."

Laura Lee McConnell - “For development and sustained research in the area of atmospheric deposition of pesticides to the Chesapeake Bay watershed.”

Sara L.F. Sunden - “For understanding research in the area of livestock genetics, particularly for work in generating comparative and physical maps associated with production traits important to agriculture.”

Department of Commerce

Gregory Thomas Linteris - “In recognition of his discoveries concerning the mechanisms of flame suppression and extinguishment and for being the first ever to conduct combustion science in a microgravity environment as a payload specialist on the two 1997 Microgravity Science Laboratory Space Shuttle missions.”

Christopher Roy Monroe - “In recognition of his scientific leadership in the new fields of quantum engineering and quantum computing, where he has demonstrated important, macroscopic quantum effects by controlling the internal and motional quantum states of individual atoms.”

Erik Nels Rasmussen - “In recognition for planning and directing Project VORTEX(Verifications of the Origins of Rotation in Tornadoes Experiment), a field experiment designed to greatly enhance our understanding of severe storms and increase the ability of the National Weather Service to predict and warn for them.”

Thomas Joseph Silva - “In recognition of nationally acclaimed research resulting in methods for imaging submicrometer to nanoscale magnetic structures, including subnanosecond studies of magnetic switching, thus addressing key metrology issues in the magnetic recording industry.”

WHITE HOUSE STAFFING MEMORANDUM

DATE: 10/7 ACTION/CONCURRENCE/COMMENT DUE BY: _____SUBJECT: Early Career Awards for Scientists + Engineers

	ACTION	FYI		ACTION	FYI
VICE PRESIDENT	☐	☒	McCURRY	☐	☒
BOWLES	☐	☒	McGINTY	☐	☐
McLARTY	☐	☐	NASH	☐	☐
PODESTA	☐	☒	RADD	☐	☐
MATHEWS	☐	☒	REED	☐	☐
RAINES	☐	☐	RUFF	☐	☐
BLUMENTHAL	☐	☐	SMITH	☐	☐
BERGER	☐	☐	SOSNIK	☐	☐
ECHAVESTE	☐	☐	SPERLING	☐	☐
EMANUEL	☐	☒	STREETT	☐	☐
GIBBONS	☐	☐	TARULLO	☐	☐
HILLEY	☐	☐	VERVEER	☐	☐
IBARRA	☐	☐	WALDMAN	☐	☐
KLAIN	☐	☐	YELLEN	☐	☐
LEWIS	☐	☐	BEGALA	☐	☐
LINDSEY	☐	☐	_____	☐	☐
MARSHALL	☐	☐	_____	☐	☐
			_____	☐	☐

REMARKS:

President will approve this today

RESPONSE:

Staff + send
to Oval
today

Staff Secretary
Ext. 6-2702

WHITE HOUSE STAFFING MEMORANDUM

DATE: 10/7 ACTION/CONCURRENCE/COMMENT DUE BY: _____SUBJECT: Early Career Awards for Scientists + Engineers

	ACTION	FYI		ACTION	FYI
VICE PRESIDENT	☐	☒	McCURRY	☐	☒
BOWLES	☐	☒	McGINTY	☐	☐
McLARTY	☐	☐	NASH	☐	☐
PODESTA	☐	☒	RADD	☐	☐
MATHEWS	☐	☒	REED	☐	☐
RAINES	☐	☐	RUFF	☐	☐
BLUMENTHAL	☐	☐	SMITH	☐	☐
BERGER	☐	☐	SOSNIK	☐	☐
ECHAVESTE	☐	☐	SPERLING	☐	☐
EMANUEL	☐	☒	STREETT	☐	☐
GIBBONS	☐	☐	TARULLO	☐	☐
HILLEY	☐	☐	VERVEER	☐	☐
IBARRA	☐	☐	WALDMAN	☐	☐
KLAIN	☐	☐	YELLEN	☐	☐
LEWIS	☐	☐	BEGALA	☐	☐
LINDSEY	☐	☐	_____	☐	☐
MARSHALL	☐	☐	_____	☐	☐
			_____	☐	☐

REMARKS:

President will approve this today

RESPONSE:

THE WHITE HOUSE
WASHINGTON

'97 OCT 3 AM 10:30

October 3, 1997

ACTION

MEMORANDUM FOR THE PRESIDENT

FROM: JOHN H. GIBBONS 

SUBJECT: Presidential Early Career Award for Scientists and Engineers

I. ACTION-FORCING EVENT: The second annual award of the Presidential Early Career Award for Scientists and Engineers.

II. BACKGROUND: The Presidential Early Career Award for Scientists and Engineers was established by Presidential directive February 1, 1996. The award was created to recognize and honor outstanding scientists and engineers at the outset of their independent research careers. The Presidential award recipients are expected to broadly advance science while contributing significantly to the missions of nine departments and agencies, namely the Departments of Agriculture, Commerce, Defense, Energy, Health and Human Services, and Veterans Affairs, the Environmental Protection Agency, National Aeronautics and Space Administration, and National Science Foundation. This award replaces the Presidential Faculty Fellows, which were nominated solely by the National Science Foundation.

Sixty awards, divided amongst the nine departments and agencies, will be given every year. The award nominations are chosen by the agencies and forwarded to the White House Office of Science and Technology Policy. The award recipients will receive substantial research support from their nominating agency over a five-year period.

I am forwarding the award nominees for your review and approval to receive the Presidential Early Career Award for Scientists and Engineers. The requisite name checks on the nominees have been completed.

III. RECOMMENDATION: Approve the following 60 nominees for the 1997 Presidential Early Career Award for Scientists and Engineers.

_____ Approve _____ Approve as Amended _____ Reject _____ No Action

National Science Foundation

Jill E. Bargonetti - "To recognize excellent scholarly work in cancer-related studies of cell growth and gene expression and involvement of undergraduate, graduate, and especially minority students in the discovery process."

Peter N. Belhumeur - "For developing innovative concepts and student laboratories in appearance-based modeling for computer applications and forging interdisciplinary links to physiology of human vision."

Geoffrey E. Hill - "For original contributions to understanding evolutionary biology, specifically avian sexual selection, and integrating a fundamental research program with public science education."

Daniel P. Lathrop - "For innovative contributions to research and education of undergraduates in non-linear properties of fluid interfaces relevant to understanding turbulence, optical fibers, and black holes."

Jon P. Longtin - "For outstanding research on laser-liquid interactions important in manufacturing, materials processing, and biological systems and outreach activities for high school students and prospective teachers."

Timothy A. McKay - "For excellent contributions to a major optical sky survey, particularly the interpretation of gravitational lensing, and for involving the public and students at all educational levels in research activities."

Steven W. McLaughlin - "For leadership in the development of optical recording systems capable of storing information in high-capacity non-binary formats and development of novel courses in communication theory."

Renee J. Miller - "To recognize excellent contributions to solving problems of schematic heterogeneity in database-management systems and retaining women and minorities in computer science."

David P. Morton - "For innovative research on computational methods for large-scale systems optimization and decision-making in the utilities industry, finance, and manufacturing and helping students gain industrial experience."

Linda K. Nozick - "To recognize development of innovative solutions to problems associated with transportation of hazardous waste and encouraging middle and high school students to pursue engineering careers."

Katherine Okikiolu - "To recognize innovative research in geometric analysis, particularly the determinant of the Laplacian under smooth perturbations, and developing student workshops and mathematics curricula for inner-city children."

Ann M. Sastry - "For outstanding research on predictive models for selection and repair of fibrous materials such as those used in structural design or human biology and introducing students to interdisciplinary team learning."

Lori A. Setton - "To recognize leadership in education and research in understanding and restoring biomechanical function to tissue degenerated by injury or aging, especially in the spine."

Jaswinder P. Singh - "For outstanding contributions to computer engineering education and research in the area of parallel architecture and software development, including results applicable to protein structure determination."

Eileen M. Spain - "For outstanding contributions to the synthesis of thin films essential to fabrication of reliable semiconductor materials and providing laser laboratory opportunities to high school students."

Florence I. Thomas - "For outstanding interdisciplinary research on the impact of organisms on nutrient and pollution flow in marine environments and development of an interactive display in a public aquarium."

Lonny L. Thompson - "To recognize excellent scholarly work on predictive models for structural acoustics applicable to noise suppression and sonar tracking and facilities student involvement in real-world engineering problems."

Daniel W. van der Weide - "For pioneering research on nanoscale-dimension electric circuits and development of a web-based virtual laboratory that provides student access to advanced scientific instrumentation."

Patricia A. Van Zandt - "For outstanding contributions to cognitive research and education, especially in development of mathematical and computer models for perception, cognition and decision-making."

Miguel Velez-Reyes - "For original contributions to engineering education and research on power systems applicable to large systems that transfer power among multiple suppliers in the electric power industry."

National Aeronautics and Space Administration

Elfatih A. B. Eltahir - "For outstanding accomplishment in hydrology and hydroclimatology by combining theory and remote sensing observations to better understand the links between the biosphere and the atmosphere and their implications for regional water resources in the tropics."

Jonathan A. Foley - "For his leadership and innovation in modeling the global biosphere yielding the first of a next generation of earth system models that dynamically link biological and ecological, hydrological and climatological processes in ways that are fully interactive."

Cila Herman - "For innovative research in engineering science, and for establishing a creative synthesis of research and education in the undergraduate curriculum at The Johns Hopkins University."

Mark V. Hurwitz - "An outstanding astronomer, instrument builder, and leader, Dr. Hurwitz has acquired critical data on interstellar gas that will dramatically improve our understanding of star formation processes."

Todd T. Schlegel - "In acknowledgment of the unique contribution your research will make to the understanding of vestibular-autonomic interactions in response to altered gravitational forces."

Eun-Suk Seo - "For her seminal work in demonstrating a practical approach to making fundamental measurements required for understanding cosmic-ray particles acceleration in shock waves from exploding stars."

Veterans Administration

Michael Gaziano - "For major contributions to the understanding of mechanisms which underlie the associations of life style factors with the risk of coronary heart disease, and for research on the role of hyperlipidemia and lipid-lowering on the risk of coronary heart disease in the elderly."

Martin Gluck - "For outstanding contributions to the field of neurobiology research focusing on the role of mitochondrial dysfunction and cell injury in neurodegenerative diseases, such as Parkinson's Disease and stroke."

National Institutes of Health

Russ B. Altman - "For outstanding leadership and accomplishment at the intersection of research in the medical computer sciences and biotechnology."

Juan C. Izpisua-Belmonte - "For innovative studies defining genetic networks and signaling pathways which establish the pattern of the developing limb, providing insight into the etiology of birth defects."

Anirvan Ghosh - "For significant contributions to understanding how the brain develops its complex organizational structure by constructing a cell culture system that mimics the developmental programming of early brains."

Macrae F. Linton - "For novel research approaches and creative strategies for possible treatment of atherosclerosis that lead to reducing death and disability from vascular diseases."

Peter Mombaerts - "For innovative genetic approaches to the field of sensory neurobiology which have furthered our understanding of the development of sensory systems."

Michael K. Rosen - "For research that will characterize a major regulatory pathway controlling cell division and motility, revealing the nature of defects in this pathway that lead to metastatic cancers."

Patrick J. Stover - "For the unique discovery of a new enzyme which metabolizes folate in mammals."

Michele Somes Swanson - "For incisive work on the genetic and biologic factors that contribute to the pathogenicity of the *Legionella pneumophila*."

Roland Michael Tisch - "For seminal work on the early stages of the disease processes for Type I Diabetes Mellitus demonstrating that diabetes can be prevented in an animal model."

Sharon Lynn Walsh - "For creativity and leadership in integrating clinical pharmacology and behavioral sciences in innovative studies for understanding and treating cocaine dependence."

David A. Wassarman - "For the development of a novel set of genetic screens that identify components of the complex mechanism that regulates gene expression."

Department of Energy

Bruno S. Bauer - "For contributions in high-energy science that allow the above-ground experiments essential for science based stockpile stewardship."

Andrew Brandt - "In recognition of his leading role in the study of diffraction phenomena and his contributions to the experimental study of proton-proton collisions at very high energies."

David J. Dean - "In recognition of his research in nuclear structure physics and critical contributions to the development of the Shell Model Monte Carlo methods, making possible the extension of shell model calculations to heavier nuclei."

Lori Ann Freitag Diachin - "In recognition for her pioneering work on the design of techniques for visualizing large data sets in interactive virtual reality environments."

Thomas J. Matula - “For experimental research into the fundamental mechanisms of sonoluminescence that provided theoretical, computational, and experimental benefits to Inertial Confinement Fusion studies.”

David Newman - “In recognition of seminal contributions to the theoretical understanding of turbulence and transport in magnetic fusion devices.”

John Shanklin - “In recognition of his internationally acclaimed research on the structure and function of a class of enzymes (desaturases and hydroxylases) that introduce double bonds or hydroxyl at specific sites between pairs of carbon atoms in long-chain fatty acids.”

Department of Defense

Nicholas L. Abbott - “For research on protein partitioning and on micromachining and molecular self assembly, making possible fabrication of microelectrodes with chemically tailored surfaces for environmental sensors.”

David S. Citrin - “For developing a comprehensive theory of excitation-polaritons in semiconductor nanostructures, making possible new ways of controlling high speed optical switching devices of greatly enhanced bandwidth.”

Robert Lewis Clark, Jr. - “In recognition of outstanding research and development in the field of adaptive structures involving active noise and vibration control.”

Elliot Douglas - “In recognition of exceptional chemistry research directed toward understanding how molecular parameters and processing affect material properties for liquid crystalline thermosets.”

Joel T. Johnson - “For research on polarimetric passive remote sensing of three dimensional rough surfaces, including numerical methods for scattering calculations, applicable to remote sensing and target identification.”

Ying-Cheng Lai - “For outstanding research innovation in theoretical studies of the effect of chaos in laser propagation.”

Peter Schiffer - “In recognition of pioneering research on geometrically frustrated magnetic systems, which has rendered new insights on the complex behavior of highly degenerate ground-state systems.”

United States Department of Agriculture

Eric J. Gustafson - “Pioneering the use of spatial models to assess the ecological impacts of alternative management practices on real and hypothetical landscapes.”

Laura Lee McConnell - "For development and sustained research in the area of atmospheric deposition of pesticides to the Chesapeake Bay watershed."

Sara L.F. Sunden - "For understanding research in the area of livestock genetics, particularly for work in generating comparative and physical maps associated with production traits important to agriculture."

Department of Commerce

Gregory Thomas Linteris - "In recognition of his discoveries concerning the mechanisms of flame suppression and extinguishment and for being the first ever to conduct combustion science in a microgravity environment as a payload specialist on the two 1997 Microgravity Science Laboratory Space Shuttle missions."

Christopher Roy Monroe - "In recognition of his scientific leadership in the new fields of quantum engineering and quantum computing, where he has demonstrated important, macroscopic quantum effects by controlling the internal and motional quantum states of individual atoms."

Erik Nels Rasmussen - "In recognition for planning and directing Project VORTEX(Verifications of the Origins of Rotation in Tornadoes Experiment), a field experiment designed to greatly enhance our understanding of severe storms and increase the ability of the National Weather Service to predict and warn for them."

Thomas Joseph Silva - "In recognition of nationally acclaimed research resulting in methods for imaging submicrometer to nanoscale magnetic structures, including subnanosecond studies of magnetic switching, thus addressing key metrology issues in the magnetic recording industry."

WHITE HOUSE STAFFING MEMORANDUM

DATE: 10/7 ACTION/CONCURRENCE/COMMENT DUE BY: _____SUBJECT: Early Career Awards for Scientists + Engineers

	ACTION	FYI		ACTION	FYI
VICE PRESIDENT	☐	☒	McCURRY	☐	☒
BOWLES	☐	☒	McGINTY	☐	☐
McLARTY	☐	☐	NASH	☐	☐
PODESTA	☐	☒	RADD	☐	☐
MATHEWS	☐	☒	REED	☐	☐
RAINES	☐	☐	RUFF	☐	☐
BLUMENTHAL	☐	☐	SMITH	☐	☐
BERGER	☐	☐	SOSNIK	☐	☐
ECHAVESTE	☐	☐	SPERLING	☐	☐
EMANUEL	☐	☒	STREETT	☐	☐
GIBBONS	☐	☐	TARULLO	☐	☐
HILLEY	☐	☐	VERVEER	☐	☐
IBARRA	☐	☐	WALDMAN	☐	☐
KLAIN	☐	☐	YELLEN	☐	☐
LEWIS	☐	☐	BEGALA	☐	☐
LINDSEY	☐	☐	_____	☐	☐
MARSHALL	☐	☐	_____	☐	☐
			_____	☐	☐

REMARKS:

President will approve this today

RESPONSE:

THE WHITE HOUSE
WASHINGTON

'97 OCT 3 AM 10:30

October 3, 1997

ACTION

MEMORANDUM FOR THE PRESIDENT

FROM: JOHN H. GIBBONS 

SUBJECT: Presidential Early Career Award for Scientists and Engineers

I. ACTION-FORCING EVENT: The second annual award of the Presidential Early Career Award for Scientists and Engineers.

II. BACKGROUND: The Presidential Early Career Award for Scientists and Engineers was established by Presidential directive February 1, 1996. The award was created to recognize and honor outstanding scientists and engineers at the outset of their independent research careers. The Presidential award recipients are expected to broadly advance science while contributing significantly to the missions of nine departments and agencies, namely the Departments of Agriculture, Commerce, Defense, Energy, Health and Human Services, and Veterans Affairs, the Environmental Protection Agency, National Aeronautics and Space Administration, and National Science Foundation. This award replaces the Presidential Faculty Fellows, which were nominated solely by the National Science Foundation.

Sixty awards, divided amongst the nine departments and agencies, will be given every year. The award nominations are chosen by the agencies and forwarded to the White House Office of Science and Technology Policy. The award recipients will receive substantial research support from their nominating agency over a five-year period.

I am forwarding the award nominees for your review and approval to receive the Presidential Early Career Award for Scientists and Engineers. The requisite name checks on the nominees have been completed.

III. RECOMMENDATION: Approve the following 60 nominees for the 1997 Presidential Early Career Award for Scientists and Engineers.

_____ Approve _____ Approve as Amended _____ Reject _____ No Action

National Science Foundation

Jill E. Bargonetti - "To recognize excellent scholarly work in cancer-related studies of cell growth and gene expression and involvement of undergraduate, graduate, and especially minority students in the discovery process."

Peter N. Belhumeur - "For developing innovative concepts and student laboratories in appearance-based modeling for computer applications and forging interdisciplinary links to physiology of human vision."

Geoffrey E. Hill - "For original contributions to understanding evolutionary biology, specifically avian sexual selection, and integrating a fundamental research program with public science education."

Daniel P. Lathrop - "For innovative contributions to research and education of undergraduates in non-linear properties of fluid interfaces relevant to understanding turbulence, optical fibers, and black holes."

Jon P. Longtin - "For outstanding research on laser-liquid interactions important in manufacturing, materials processing, and biological systems and outreach activities for high school students and prospective teachers."

Timothy A. McKay - "For excellent contributions to a major optical sky survey, particularly the interpretation of gravitational lensing, and for involving the public and students at all educational levels in research activities."

Steven W. McLaughlin - "For leadership in the development of optical recording systems capable of storing information in high-capacity non-binary formats and development of novel courses in communication theory."

Renee J. Miller - "To recognize excellent contributions to solving problems of schematic heterogeneity in database-management systems and retaining women and minorities in computer science."

David P. Morton - "For innovative research on computational methods for large-scale systems optimization and decision-making in the utilities industry, finance, and manufacturing and helping students gain industrial experience."

Linda K. Nozick - "To recognize development of innovative solutions to problems associated with transportation of hazardous waste and encouraging middle and high school students to pursue engineering careers."

Katherine Okikiolu - "To recognize innovative research in geometric analysis, particularly the determinant of the Laplacian under smooth perturbations, and developing student workshops and mathematics curricula for inner-city children."

Ann M. Sastry - "For outstanding research on predictive models for selection and repair of fibrous materials such as those used in structural design or human biology and introducing students to interdisciplinary team learning."

Lori A. Setton - "To recognize leadership in education and research in understanding and restoring biomechanical function to tissue degenerated by injury or aging, especially in the spine."

Jaswinder P. Singh - "For outstanding contributions to computer engineering education and research in the area of parallel architecture and software development, including results applicable to protein structure determination."

Eileen M. Spain - "For outstanding contributions to the synthesis of thin films essential to fabrication of reliable semiconductor materials and providing laser laboratory opportunities to high school students."

Florence I. Thomas - "For outstanding interdisciplinary research on the impact of organisms on nutrient and pollution flow in marine environments and development of an interactive display in a public aquarium."

Lonny L. Thompson - "To recognize excellent scholarly work on predictive models for structural acoustics applicable to noise suppression and sonar tracking and facilities student involvement in real-world engineering problems."

Daniel W. van der Weide - "For pioneering research on nanoscale-dimension electric circuits and development of a web-based virtual laboratory that provides student access to advanced scientific instrumentation."

Patricia A. Van Zandt - "For outstanding contributions to cognitive research and education, especially in development of mathematical and computer models for perception, cognition and decision-making."

Miguel Velez-Reyes - "For original contributions to engineering education and research on power systems applicable to large systems that transfer power among multiple suppliers in the electric power industry."

National Aeronautics and Space Administration

Elfatih A. B. Eltahir - “For outstanding accomplishment in hydrology and hydroclimatology by combining theory and remote sensing observations to better understand the links between the biosphere and the atmosphere and their implications for regional water resources in the tropics.”

Jonathan A. Foley - “For his leadership and innovation in modeling the global biosphere yielding the first of a next generation of earth system models that dynamically link biological and ecological, hydrological and climatological processes in ways that are fully interactive.”

Cila Herman - “For innovative research in engineering science, and for establishing a creative synthesis of research and education in the undergraduate curriculum at The Johns Hopkins University.”

Mark V. Hurwitz - “An outstanding astronomer, instrument builder, and leader, Dr. Hurwitz has acquired critical data on interstellar gas that will dramatically improve our understanding of star formation processes.”

Todd T. Schlegel - “In acknowledgment of the unique contribution your research will make to the understanding of vestibular-autonomic interactions in response to altered gravitational forces.”

Eun-Suk Seo - “For her seminal work in demonstrating a practical approach to making fundamental measurements required for understanding cosmic-ray particles acceleration in shock waves from exploding stars.”

Veterans Administration

Michael Gaziano - “For major contributions to the understanding of mechanisms which underlie the associations of life style factors with the risk of coronary heart disease, and for research on the role of hyperlipidemia and lipid-lowering on the risk of coronary heart disease in the elderly.”

Martin Gluck - “For outstanding contributions to the field of neurobiology research focusing on the role of mitochondrial dysfunction and cell injury in neurodegenerative diseases, such as Parkinson’s Disease and stroke.”

National Institutes of Health

Russ B. Altman - “For outstanding leadership and accomplishment at the intersection of research in the medical computer sciences and biotechnology.”

Juan C. Izpisua-Belmonte - “For innovative studies defining genetic networks and signaling pathways which establish the pattern of the developing limb, providing insight into the etiology of birth defects.”

Anirvan Ghosh - “For significant contributions to understanding how the brain develops its complex organizational structure by constructing a cell culture system that mimics the developmental programming of early brains.”

Macrae F. Linton - “For novel research approaches and creative strategies for possible treatment of atherosclerosis that lead to reducing death and disability from vascular diseases.”

Peter Mombaerts - “For innovative genetic approaches to the field of sensory neurobiology which have furthered our understanding of the development of sensory systems.”

Michael K. Rosen - “For research that will characterize a major regulatory pathway controlling cell division and motility, revealing the nature of defects in this pathway that lead to metastatic cancers.

Patrick J. Stover - “For the unique discovery of a new enzyme which metabolizes folate in mammals.”

Michele Somes Swanson - “For incisive work on the genetic and biologic factors that contribute to the pathogenicity of the *Legionella pneumophila*.”

Roland Michael Tisch - “For seminal work on the early stages of the disease processes for Type I Diabetes Mellitus demonstrating that diabetes can be prevented in an animal model.”

Sharon Lynn Walsh - “For creativity and leadership in integrating clinical pharmacology and behavioral sciences in innovative studies for understanding and treating cocaine dependence.”

David A. Wassarman - “For the development of a novel set of genetic screens that identify components of the complex mechanism that regulates gene expression.”

Department of Energy

Bruno S. Bauer - “For contributions in high-energy science that allow the above-ground experiments essential for science based stockpile stewardship.”

Andrew Brandt - “In recognition of his leading role in the study of diffraction phenomena and his contributions to the experimental study of proton-proton collisions at very high energies.”

David J. Dean - “In recognition of his research in nuclear structure physics and critical contributions to the development of the Shell Model Monte Carlo methods, making possible the extension of shell model calculations to heavier nuclei.”

Lori Ann Freitag Diachin - “In recognition for her pioneering work on the design of techniques for visualizing large data sets in interactive virtual reality environments.”

Thomas J. Matula - “For experimental research into the fundamental mechanisms of sonoluminescence that provided theoretical, computational, and experimental benefits to Inertial Confinement Fusion studies.”

David Newman - “In recognition of seminal contributions to the theoretical understanding of turbulence and transport in magnetic fusion devices.”

John Shanklin - “In recognition of his internationally acclaimed research on the structure and function of a class of enzymes (desaturases and hydroxylases) that introduce double bonds or hydroxyl at specific sites between pairs of carbon atoms in long-chain fatty acids.”

Department of Defense

Nicholas L. Abbott - “For research on protein partitioning and on micromachining and molecular self assembly, making possible fabrication of microelectrodes with chemically tailored surfaces for environmental sensors.”

David S. Citrin - “For developing a comprehensive theory of excitation-polaritons in semiconductor nanostructures, making possible new ways of controlling high speed optical switching devices of greatly enhanced bandwidth.”

Robert Lewis Clark, Jr. - “In recognition of outstanding research and development in the field of adaptive structures involving active noise and vibration control.”

Elliot Douglas - “In recognition of exceptional chemistry research directed toward understanding how molecular parameters and processing affect material properties for liquid crystalline thermosets.”

Joel T. Johnson - “For research on polarimetric passive remote sensing of three dimensional rough surfaces, including numerical methods for scattering calculations, applicable to remote sensing and target identification.”

Ying-Cheng Lai - “For outstanding research innovation in theoretical studies of the effect of chaos in laser propagation.”

Peter Schiffer - “In recognition of pioneering research on geometrically frustrated magnetic systems, which has rendered new insights on the complex behavior of highly degenerate ground-state systems.”

United States Department of Agriculture

Eric J. Gustafson - “Pioneering the use of spatial models to assess the ecological impacts of alternative management practices on real and hypothetical landscapes.”

Laura Lee McConnell - “For development and sustained research in the area of atmospheric deposition of pesticides to the Chesapeake Bay watershed.”

Sara L.F. Sunden - “For understanding research in the area of livestock genetics, particularly for work in generating comparative and physical maps associated with production traits important to agriculture.”

Department of Commerce

Gregory Thomas Linteris - “In recognition of his discoveries concerning the mechanisms of flame suppression and extinguishment and for being the first ever to conduct combustion science in a microgravity environment as a payload specialist on the two 1997 Microgravity Science Laboratory Space Shuttle missions.”

Christopher Roy Monroe - “In recognition of his scientific leadership in the new fields of quantum engineering and quantum computing, where he has demonstrated important, macroscopic quantum effects by controlling the internal and motional quantum states of individual atoms.”

Erik Nels Rasmussen - “In recognition for planning and directing Project VORTEX(Verifications of the Origins of Rotation in Tornadoes Experiment), a field experiment designed to greatly enhance our understanding of severe storms and increase the ability of the National Weather Service to predict and warn for them.”

Thomas Joseph Silva - “In recognition of nationally acclaimed research resulting in methods for imaging submicrometer to nanoscale magnetic structures, including subnanosecond studies of magnetic switching, thus addressing key metrology issues in the magnetic recording industry.”

WHITE HOUSE STAFFING MEMORANDUM

DATE: 10/7 ACTION/CONCURRENCE/COMMENT DUE BY: _____SUBJECT: Early Career Awards for Scientists + Engineers

	ACTION	FYI		ACTION	FYI
VICE PRESIDENT	☐	☒	McCURRY	☐	☒
BOWLES	☐	☒	McGINTY	☐	☐
McLARTY	☐	☐	NASH	☐	☐
PODESTA	☐	☒	RADD	☐	☐
MATHEWS	☐	☒	REED	☐	☐
RAINES	☐	☐	RUFF	☐	☐
BLUMENTHAL	☐	☐	SMITH	☐	☐
BERGER	☐	☐	SOSNIK	☐	☐
ECHAVESTE	☐	☐	SPERLING	☐	☐
EMANUEL	☐	☒	STRETT	☐	☐
GIBBONS	☐	☐	TARULLO	☐	☐
HILLEY	☐	☐	VERVEER	☐	☐
IBARRA	☐	☐	WALDMAN	☐	☐
KLAIN	☐	☐	YELLEN	☐	☐
LEWIS	☐	☐	BEGALA	☐	☐
LINDSEY	☐	☐	_____	☐	☐
MARSHALL	☐	☐	_____	☐	☐
			_____	☐	☐

REMARKS:

President will approve this today

RESPONSE:

THE WHITE HOUSE
WASHINGTON

'97 OCT 3 AM 10:30

October 3, 1997

ACTION

MEMORANDUM FOR THE PRESIDENT

FROM: JOHN H. GIBBONS 

SUBJECT: Presidential Early Career Award for Scientists and Engineers

I. ACTION-FORCING EVENT: The second annual award of the Presidential Early Career Award for Scientists and Engineers.

II. BACKGROUND: The Presidential Early Career Award for Scientists and Engineers was established by Presidential directive February 1, 1996. The award was created to recognize and honor outstanding scientists and engineers at the outset of their independent research careers. The Presidential award recipients are expected to broadly advance science while contributing significantly to the missions of nine departments and agencies, namely the Departments of Agriculture, Commerce, Defense, Energy, Health and Human Services, and Veterans Affairs, the Environmental Protection Agency, National Aeronautics and Space Administration, and National Science Foundation. This award replaces the Presidential Faculty Fellows, which were nominated solely by the National Science Foundation.

Sixty awards, divided amongst the nine departments and agencies, will be given every year. The award nominations are chosen by the agencies and forwarded to the White House Office of Science and Technology Policy. The award recipients will receive substantial research support from their nominating agency over a five-year period.

I am forwarding the award nominees for your review and approval to receive the Presidential Early Career Award for Scientists and Engineers. The requisite name checks on the nominees have been completed.

III. RECOMMENDATION: Approve the following 60 nominees for the 1997 Presidential Early Career Award for Scientists and Engineers.

_____ Approve _____ Approve as Amended _____ Reject _____ No Action

National Science Foundation

Jill E. Bargonetti - "To recognize excellent scholarly work in cancer-related studies of cell growth and gene expression and involvement of undergraduate, graduate, and especially minority students in the discovery process."

Peter N. Belhumeur - "For developing innovative concepts and student laboratories in appearance-based modeling for computer applications and forging interdisciplinary links to physiology of human vision."

Geoffrey E. Hill - "For original contributions to understanding evolutionary biology, specifically avian sexual selection, and integrating a fundamental research program with public science education."

Daniel P. Lathrop - "For innovative contributions to research and education of undergraduates in non-linear properties of fluid interfaces relevant to understanding turbulence, optical fibers, and black holes."

Jon P. Longtin - "For outstanding research on laser-liquid interactions important in manufacturing, materials processing, and biological systems and outreach activities for high school students and prospective teachers."

Timothy A. McKay - "For excellent contributions to a major optical sky survey, particularly the interpretation of gravitational lensing, and for involving the public and students at all educational levels in research activities."

Steven W. McLaughlin - "For leadership in the development of optical recording systems capable of storing information in high-capacity non-binary formats and development of novel courses in communication theory."

Renee J. Miller - "To recognize excellent contributions to solving problems of schematic heterogeneity in database-management systems and retaining women and minorities in computer science."

David P. Morton - "For innovative research on computational methods for large-scale systems optimization and decision-making in the utilities industry, finance, and manufacturing and helping students gain industrial experience."

Linda K. Nozick - "To recognize development of innovative solutions to problems associated with transportation of hazardous waste and encouraging middle and high school students to pursue engineering careers."

Katherine Okikiolu - "To recognize innovative research in geometric analysis, particularly the determinant of the Laplacian under smooth perturbations, and developing student workshops and mathematics curricula for inner-city children."

Ann M. Sastry - "For outstanding research on predictive models for selection and repair of fibrous materials such as those used in structural design or human biology and introducing students to interdisciplinary team learning."

Lori A. Setton - "To recognize leadership in education and research in understanding and restoring biomechanical function to tissue degenerated by injury or aging, especially in the spine."

Jaswinder P. Singh - "For outstanding contributions to computer engineering education and research in the area of parallel architecture and software development, including results applicable to protein structure determination."

Eileen M. Spain - "For outstanding contributions to the synthesis of thin films essential to fabrication of reliable semiconductor materials and providing laser laboratory opportunities to high school students."

Florence I. Thomas - "For outstanding interdisciplinary research on the impact of organisms on nutrient and pollution flow in marine environments and development of an interactive display in a public aquarium."

Lonny L. Thompson - "To recognize excellent scholarly work on predictive models for structural acoustics applicable to noise suppression and sonar tracking and facilities student involvement in real-world engineering problems."

Daniel W. van der Weide - "For pioneering research on nanoscale-dimension electric circuits and development of a web-based virtual laboratory that provides student access to advanced scientific instrumentation."

Patricia A. Van Zandt - "For outstanding contributions to cognitive research and education, especially in development of mathematical and computer models for perception, cognition and decision-making."

Miguel Velez-Reyes - "For original contributions to engineering education and research on power systems applicable to large systems that transfer power among multiple suppliers in the electric power industry."

National Aeronautics and Space Administration

Elfatih A. B. Eltahir - “For outstanding accomplishment in hydrology and hydroclimatology by combining theory and remote sensing observations to better understand the links between the biosphere and the atmosphere and their implications for regional water resources in the tropics.”

Jonathan A. Foley - “For his leadership and innovation in modeling the global biosphere yielding the first of a next generation of earth system models that dynamically link biological and ecological, hydrological and climatological processes in ways that are fully interactive.”

Cila Herman - “For innovative research in engineering science, and for establishing a creative synthesis of research and education in the undergraduate curriculum at The Johns Hopkins University.”

Mark V. Hurwitz - “An outstanding astronomer, instrument builder, and leader, Dr. Hurwitz has acquired critical data on interstellar gas that will dramatically improve our understanding of star formation processes.”

Todd T. Schlegel - “In acknowledgment of the unique contribution your research will make to the understanding of vestibular-autonomic interactions in response to altered gravitational forces.”

Eun-Suk Seo - “For her seminal work in demonstrating a practical approach to making fundamental measurements required for understanding cosmic-ray particles acceleration in shock waves from exploding stars.”

Veterans Administration

Michael Gaziano - “For major contributions to the understanding of mechanisms which underlie the associations of life style factors with the risk of coronary heart disease, and for research on the role of hyperlipidemia and lipid-lowering on the risk of coronary heart disease in the elderly.”

Martin Gluck - “For outstanding contributions to the field of neurobiology research focusing on the role of mitochondrial dysfunction and cell injury in neurodegenerative diseases, such as Parkinson’s Disease and stroke.”

National Institutes of Health

Russ B. Altman - “For outstanding leadership and accomplishment at the intersection of research in the medical computer sciences and biotechnology.”

Juan C. Izpisua-Belmonte - “For innovative studies defining genetic networks and signaling pathways which establish the pattern of the developing limb, providing insight into the etiology of birth defects.”

Anirvan Ghosh - “For significant contributions to understanding how the brain develops its complex organizational structure by constructing a cell culture system that mimics the developmental programming of early brains.”

Macrae F. Linton - “For novel research approaches and creative strategies for possible treatment of atherosclerosis that lead to reducing death and disability from vascular diseases.”

Peter Mombaerts - “For innovative genetic approaches to the field of sensory neurobiology which have furthered our understanding of the development of sensory systems.”

Michael K. Rosen - “For research that will characterize a major regulatory pathway controlling cell division and motility, revealing the nature of defects in this pathway that lead to metastatic cancers.

Patrick J. Stover - “For the unique discovery of a new enzyme which metabolizes folate in mammals.”

Michele Somes Swanson - “For incisive work on the genetic and biologic factors that contribute to the pathogenicity of the Legionella pneumophila.”

Roland Michael Tisch - “For seminal work on the early stages of the disease processes for Type I Diabetes Mellitus demonstrating that diabetes can be prevented in an animal model.”

Sharon Lynn Walsh - “For creativity and leadership in integrating clinical pharmacology and behavioral sciences in innovative studies for understanding and treating cocaine dependence.”

David A. Wassarman - “For the development of a novel set of genetic screens that identify components of the complex mechanism that regulates gene expression.”

Department of Energy

Bruno S. Bauer - “For contributions in high-energy science that allow the above-ground experiments essential for science based stockpile stewardship.”

Andrew Brandt - “In recognition of his leading role in the study of diffraction phenomena and his contributions to the experimental study of proton-proton collisions at very high energies.”

David J. Dean - “In recognition of his research in nuclear structure physics and critical contributions to the development of the Shell Model Monte Carlo methods, making possible the extension of shell model calculations to heavier nuclei.”

Lori Ann Freitag Diachin - “In recognition for her pioneering work on the design of techniques for visualizing large data sets in interactive virtual reality environments.”

Thomas J. Matula - “For experimental research into the fundamental mechanisms of sonoluminescence that provided theoretical, computational, and experimental benefits to Inertial Confinement Fusion studies.”

David Newman - “In recognition of seminal contributions to the theoretical understanding of turbulence and transport in magnetic fusion devices.”

John Shanklin - “In recognition of his internationally acclaimed research on the structure and function of a class of enzymes (desaturases and hydroxylases) that introduce double bonds or hydroxyl at specific sites between pairs of carbon atoms in long-chain fatty acids.”

Department of Defense

Nicholas L. Abbott - “For research on protein partitioning and on micromachining and molecular self assembly, making possible fabrication of microelectrodes with chemically tailored surfaces for environmental sensors.”

David S. Citrin - “For developing a comprehensive theory of excitation-polaritons in semiconductor nanostructures, making possible new ways of controlling high speed optical switching devices of greatly enhanced bandwidth.”

Robert Lewis Clark, Jr. - “In recognition of outstanding research and development in the field of adaptive structures involving active noise and vibration control.”

Elliot Douglas - “In recognition of exceptional chemistry research directed toward understanding how molecular parameters and processing affect material properties for liquid crystalline thermosets.”

Joel T. Johnson - “For research on polarimetric passive remote sensing of three dimensional rough surfaces, including numerical methods for scattering calculations, applicable to remote sensing and target identification.”

Ying-Cheng Lai - “For outstanding research innovation in theoretical studies of the effect of chaos in laser propagation.”

Peter Schiffer - “In recognition of pioneering research on geometrically frustrated magnetic systems, which has rendered new insights on the complex behavior of highly degenerate ground-state systems.”

United States Department of Agriculture

Eric J. Gustafson - “Pioneering the use of spatial models to assess the ecological impacts of alternative management practices on real and hypothetical landscapes.”

Laura Lee McConnell - “For development and sustained research in the area of atmospheric deposition of pesticides to the Chesapeake Bay watershed.”

Sara L.F. Sunden - “For understanding research in the area of livestock genetics, particularly for work in generating comparative and physical maps associated with production traits important to agriculture.”

Department of Commerce

Gregory Thomas Linteris - “In recognition of his discoveries concerning the mechanisms of flame suppression and extinguishment and for being the first ever to conduct combustion science in a microgravity environment as a payload specialist on the two 1997 Microgravity Science Laboratory Space Shuttle missions.”

Christopher Roy Monroe - “In recognition of his scientific leadership in the new fields of quantum engineering and quantum computing, where he has demonstrated important, macroscopic quantum effects by controlling the internal and motional quantum states of individual atoms.”

Erik Nels Rasmussen - “In recognition for planning and directing Project VORTEX(Verifications of the Origins of Rotation in Tornadoes Experiment), a field experiment designed to greatly enhance our understanding of severe storms and increase the ability of the National Weather Service to predict and warn for them.”

Thomas Joseph Silva - “In recognition of nationally acclaimed research resulting in methods for imaging submicrometer to nanoscale magnetic structures, including subnanosecond studies of magnetic switching, thus addressing key metrology issues in the magnetic recording industry.”



EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20502

October 3, 1997

MEMORANDUM FOR THE PRESIDENT

FROM: JOHN H. GIBBONS 
CC: ERSKINE BOWLES
SUBJECT: OSTP WEEKLY REPORT

PCAST MAKES RECOMMENDATIONS FOR ENERGY R&D

On September 30 PCAST chairman John Young sent you the Executive Summary of the PCAST report, *Federal Energy Research and Development for the Challenges of the 21st Century*. A PCAST panel chaired by John Holdren prepared the report in response to your January request for a review of the national energy R&D portfolio. The report is a consensus statement by the panel, which represented a cross-section of the energy industry, NGO community, and academia. PCAST fully endorsed the findings and recommendations.

The report recommends increased support for applied energy R&D budgets, beginning with \$500 million and reaching \$1 billion per year at the end of five years. The biggest increases are called for in efficiency and renewables research, which will help us reach climate protection goals for 2010, including:

- Constructing one million "zero-net-energy" buildings
- Reducing industrial energy intensity by 25 percent
- Developing a production prototype of a 100 mpg passenger car
- Producing ethanol from energy crops that is fully cost competitive with gasoline

PCAST urges you to communicate to the public the importance of energy and energy R&D to the nation's future. This message is integral to your outreach on climate change. As PCAST notes, it is also central to all efforts to ensure economic prosperity, environmental quality, and national security.

LAUNCH OF CASSINI MISSION TO SATURN APPROVED

Today I sent Dan Goldin a letter providing safety approval of the Cassini Mission to Saturn. The launch is currently scheduled for October 13.

DOD BASIC RESEARCH BUDGET REMAINS STAGNANT

The FY98 defense appropriations conference resulted in an overall increase of \$755 million in science and technology over your budget request. While overall this may appear to be good news, Congress cut your request for basic defense research by 7.2 percent, or \$83.5 million. Congress' action is particularly ironic given the views Senator Lott expressed in January in a well-reasoned letter to Senator Thurmond expressing his concern over erosion in DOD's basic research program: "Th[e] research investment is also our legacy to our country, children and grandchildren because it ensures this country's continued ability to field technologically superior forces. . . . I believe we do have the capability and must stop the slide in research and commit to a long-term stable and robust program." Unfortunately this trend may be continuing within the Pentagon. The Air Force has proposed cutting back its overall S&T effort by 20 percent in FY99 and 25 percent in FY00 from previously planned levels, while the Navy has proposed respective cuts of 6 and 8 percent. Neither the Army nor the Marines have proposed reductions. I have written Secretary Cohen of my concerns about this disturbing trend of losses in research support and am following it through the budget process.

OSTP PUBLISHES A PRIMER ON CLIMATE SCIENCE

Attached is a copy of OSTP's recent publication, *Climate Change: State of Knowledge*. This volume was prepared for your October 1 meeting with the meteorologists and for use at the White House Conference on Climate Change October 6.

Clinton Presidential Records Digital Records Marker

This is not a presidential record. This is used as an administrative marker by the William J. Clinton Presidential Library Staff.

This marker identifies the place of a publication.

Publications have not been scanned in their entirety for the purpose of digitization. To see the full publication please search online or visit the Clinton Presidential Library's Research Room.

CLIMATE CHANGE

State of Knowledge



File

THE WHITE HOUSE
WASHINGTON

October 4, 1997

MEMORANDUM FOR THE PRESIDENT:

FROM: PHIL CAPLAN *Ph*
SEAN MALONEY

SUBJECT: Recent Information Items

We are forwarding the following recent information items:

- 26-97*
- (A) **Reed/Kagan/Cohen update on national tests.** Memo updates you on status of the conference and other Congressional issues as well as communications and outreach efforts. *Please see memo for details.*
 - (B) **Rubin memo on IRS.** In response to two questions you had. *1) Does the IRS target low-income individuals for audit?* Individuals with the highest incomes are most likely to be audited (see chart in memo), but audit rates for low-income taxpayers have dramatically increased while audit rates for high-income have dramatically decreased over the last five years. Three causes: (i) IRS has attempted to reduce the error rate for EITC taxpayers in response to Congressional and Administration concerns; (ii) elimination of tax shelters for high-income taxpayers had reduced the need for aggressive audits; (iii) due to budget reductions, IRS has shifted resources to enforcement efforts with higher rates of return. *2) Was the Taxpayer Bill of Rights (TBOR) violated?* The hearings looked at four different taxpayer cases. Based upon the record of the hearings, IRS did not violate either the TBOR (first passed in 1988) or the '96 and '97 strengthening of the law, though the IRS admitted all four were mishandled. The Acting Commissioner is looking into each case.
 - (C) **Berger update on NATO Enlargement ratification.** Updates you on various efforts: a group called the New Atlantic Initiative released a pro-enlargement statement signed by over 130 prominent foreign policy figures, including all 8 living Secretaries of State and 14 other top national security officials; your letter-response to a group of 20 senators has been widely distributed to the press, think tanks and constituency groups; Congressional consultations are on-going; Senate hearings are imminent, with Albright testifying on Oct. 7; Senator Dole appears receptive to playing a positive role and may want to travel to three invited states; Sandy is working to expand the circle of supportive organizations.
 - (D) **Carl Sagan's views on launch of nuclear material into space.** From Jack Gibbons who forwards 1989 Sagan article in light of interest Cassini launch is generating. Sagan discusses safety issues associated with plutonium-powered launches. Jack notes, "I believe Sagan's views help put the benefits and potential risks into perspective."

- (E) **Letter from Charles Spencer, Princess Diana's brother.** He wrote to thank you for the condolence letter. Says it was Diana's wish to "set up a new life for herself" in the U.S. and believes she would have opted for the East Coast, although he was pushing her towards California. "Whatever, it is now just one of many unfulfilled dreams."
- (F) **Letter from David Kahn, NYT crossword puzzle author.** He sent you a note in July but you probably never got it, so he sent another through Mack. He says, "I was delighted to read that you enjoyed a puzzle I created, 'Technophobe's Delight,' which appeared in the *NYT Magazine* on June 29...I'm also technologically challenged...your comments on the puzzle were the ultimate and most gratifying feedback." His next *Sunday Magazine* puzzle is October 19.

We have also received the following items:

- **Raines memo and OMB Strategic Plan.** Frank forwards a copy of the Strategic Plan, which was sent to Congress on September 30 as required by statute. It's a product of two years of work and was a "challenging endeavor." Frank notes that the process "has led to a much better understanding of what OMB's goals are, and how we will go about achieving them." *We have the report in our office if you would like to see it.*
- **Berger note and clips on CTBT.** Almost every regional paper headlined on the front page your announcement at the UN that you were transmitting the CTBT to Congress for approval. Sandy notes, "this is reminiscent of the print coverage we received on other major CTBT campaign milestones, such as the zero-yield announcement in '95 and the signing ceremony at the UN last year, proving again that CTBT is an issue the media (and we believe, the public) will track." *We have the clips in our office if you would like to see them.*

THE WHITE HOUSE
WASHINGTON

October 10, 1997

MR. PRESIDENT:

Yesterday the White House received H.R. 1122, the "partial-birth" bill. The consensus among your advisors is to veto the bill today but issue only a written veto statement.

I have attached two veto messages. The first is shorter and is based on a letter you sent to the Hill this week urging Members to vote against the bill. It references the veto message you issued last year on H.R. 1833. The second is longer and is an almost identical restatement of last year's veto message -- only the introduction and a few words have been changed.

John Podesta, Elena Kagan and Todd Stern prefer the shorter version because it is crisp and to the point. *Chuck Ruff* prefers the longer version arguing that it is your most thoughtful statement on the subject and those interested in the issue will scrutinize your every word -- especially any variance from last year.

Maria Echaveste prefers the short version but is concerned that those interested in the issue will not remember last year's veto message. She suggests making last year's longer version available to interested groups and/or reporters. *Ann Lewis* is satisfied with either message, but leans toward the tone of the short version.

Please sign the version with which you are most comfortable.

Phil Caplan

THE WHITE HOUSE

Office of the Press Secretary

For Immediate Release

October 10, 1997

STATEMENT BY THE PRESS SECRETARY

The President today named Amy Weiss Tobe as Deputy Assistant to the President and Deputy Press Secretary for Operations, effective October 27.

Tobe currently serves as Communications Director at the Democratic National Committee, where she manages the communications and press staff; oversees strategic, long and short-term message planning; and serves as the chief spokesperson. From 1993-1995, she worked for U.S. Representative Mike Synar (D-OK), serving as press secretary and then managing his 1994 re-election campaign. She was a founder of and served as Director of Communications for the Campaign for America Project, a national media and grass roots campaign chaired by Synar to stimulate citizen action for campaign finance and lobbying reform. Tobe was the Oregon state press secretary for the Clinton/Gore 1992 campaign and served as Communications Director at the Center for National Policy from 1988-1993.

Tobe was raised in Ridgewood, New Jersey. She holds a B.A. in print journalism from American University and now lives in Alexandria, VA with her husband, John, and 13-month old son, Jack Michael.

-30-30-30-

Oval
body



THE WHITE HOUSE
WASHINGTON

'97 OCT 20 PM11:05

October 20, 1997

INFORMATION

MEMORANDUM FOR THE PRESIDENT

FROM: SAMUEL BERGER *SB*SUBJECT: Report of the President's Commission on Critical
Infrastructure ProtectionBackground

Last year you appointed a Commission to study the vulnerability of our critical infrastructure -- energy, finance, telecommunications, transportation and vital human services. The Commission, chaired by USAF Lieutenant General (Retired) Tom Marsh, had as its mandate to assess the scope and nature of the vulnerabilities of, and threats to, critical infrastructures; determine what legal and policy issues are raised by efforts to protect critical infrastructures and assess how these issues should be addressed; and recommend a comprehensive national policy and implementation strategy for protecting critical infrastructures from physical and cyber threats and assuring their continued operation.

The Commission's Report

The Commission has completed its work and will present its report to the Critical Infrastructure Steering Committee (Janet Reno, John Hamre, Donald Gips, General Marsh and General Kerrick) this week.

The key recommendations of the 269-page report include:

- the creation of an Office of National Infrastructure Assurance in the NSC to coordinate the security efforts of the agencies;

cc: Vice President
Chief of Staff

- the creation of an information and warning center in the Commerce Department to collect incidents of computer security breaches;
- a series of decisions by the Federal government to get its own information security house in order (including more stringent procurement requirements and the adoption of a model practices code);
- a public-private council of senior CEOs;
- and a major education and awareness effort (including several White House conferences).

The Report also proposes doubling the R&D budget for information security to \$500 million in 1999 and then re-doubling by 2004.

Next Steps

The Commission's report, along with other available information, will now be subjected to a governmental review concluding with final recommendations to you soon after the first of the year. The Steering Committee will guide this effort along with an Advisory Committee co-chaired by Jamie Gorelick and Sam Nunn.

Congressional Interest

Senator Jon Kyl has been the leading voice on this issue and had planned to hold hearings this month. We have consulted with him, and he has agreed to defer until early next year after our review of the Commission's report is completed. We will provide a copy of the report to the Congress and consult with them as the governmental review progresses.

We will also provide you a more detailed analysis of the Commission's recommendations after we have reviewed the report.

THE WHITE HOUSE

WASHINGTON

October 10, 1997

MEMORANDUM FOR THE PRESIDENT

FROM: PHIL CAPLAN *Phl*

SUBJECT: H.R. 2378 -- Treasury and General Government Appropriations Act, FY '98

Attached for your signature is H.R. 2378, which you will discuss later today in your weekly radio address. It provides funding for the Department of the Treasury, the Postal Service, GSA, OPM, the Executive Office of the President, the FEC and several other independent agencies.

The bill provides \$12.8 billion in discretionary budget authority for FY '98, \$0.3 billion below your overall request. Major provisions of the bill include:

Executive Office of the President - funds the WH, OMB and NSC at the requested level; your \$1 million request for "unanticipated needs" is included in the VA/HUD bill rather than this bill.

ONDCP - national media campaign is funded at \$195 million, \$20 million above your request (*you will highlight this effort in the radio address*); obligation of these funds is conditioned on "approval" by Senate Judiciary but OMB will interpret this provision as requiring "notification" only under INS v. Chadha.

Treasury - funded at \$0.3 billion below your request; IRS at \$0.2 billion below your request but 11% over the FY '97 level; includes \$138 million for EITC compliance initiative and maximum amount under Balanced Budget Agreement for EITC discretionary cap adjustment; Treasury law enforcement bureaus funded at \$84 million below request, but this is partially mitigated by a provision directing \$26 million from the Treasury Forfeiture Fund to law enforcement.

Federal Employees Health Benefits Program - bill restricts coverage for abortions except for life of mother, rape or incest; identical language as last year.

FEC - funded at \$2.6 million below your request but 12% over the FY '97 level; term limits FEC Commissioners nominated after December 31, 1997 to their current term and another six-year term.

Pay Raise - bill does not include language denying a pay raise to Members of Congress, Federal judges, Executive Schedule employees and the VP, thus allowing a 2.3% raise to take effect in January 1998.

The bill passed the House 220-207 and the Senate 55-45. It has received all necessary clearances and I recommend that you sign it. Line item veto options will be presented to you separately.

'97 OCT 17 PM 8:04



OFFICE OF THE VICE PRESIDENT
WASHINGTON

(X)

October 10, 1997

10-20-97

Copy
Frank
POTUS

MEMORANDUM FOR ERSKINE BOWLES

F.Y.S.

FROM:

LEON FUERTH

SUBJECT:

COMMITMENT TO U.S.-MEXICO SCIENCE FOUNDATION

The Vice President spoke to Congressman George Brown on October 8 and gave him his support for the U.S.-Mexico Science Foundation. As you may know, this Foundation is a NGO established in 1992 with strong support from Congressman Brown. Its mission is to enhance the scientific and technological strengths of both countries by fostering relevant research, training, and human resource development on our common problems.

Dr. Gibbons recommended support for this Foundation. The Vice President agreed to Congressman Brown's request that the Administration make a public statement on behalf of the Foundation. He also agreed to help the Foundation come up with \$5M per year over the next 5 years. This money would be matched by Mexico to endow the Foundation.



CHIEF OF STAFF TO THE PRESIDENT

① Send original to Phil Caplan for POTUS.

② Copy Frank.

③ Copy back to me — [Signature]

THE WHITE HOUSE
WASHINGTON

October 10, 1997

MR. PRESIDENT:

Attached for your signature is H.R. 394, which would release the U.S. government's reversionary interest in 1.92 acres of land in Iosco County, Michigan.

In 1960, the USDA conveyed 80 acres to Iosco County for the construction of an airport, but retained a reversionary interest in the land in the event the property was not used as intended. Due to a survey error that wasn't discovered until 1976, a private dwelling was built on 1.92 acres on the 80-acre parcel.

H.R. 394 would free Iosco County to swap its interest in the 1.92 acre parcel for an equivalent parcel of land furnished by the dwelling's owner. Iosco County will convey to the U.S. government an equivalent reversionary interest in an alternative property.

The bill has received all necessary clearances and passed both Houses by voice votes. ***Last day for action is Tuesday, October 14, 1997.***

Phil Caplan 
Sean Maloney

THE WHITE HOUSE
WASHINGTON

October 10, 1997

MR. PRESIDENT:

Attached for your signature is H.R. 1948, which authorizes a land swap to benefit the Admiralty Island National Monument in Alaska.

Background. The million-acre Monument is home to the world's densest population of Alaskan brown bears, large numbers of American bald eagles and other wildlife. The Forest Service has been trying to acquire the remaining 1,350 acres of privately-held land within the Monument's boundaries.

H.R. 1948. This bill would swap the government's interest in 144 acres near Sitka, Alaska in exchange for 54 acres of private land located within the Hood Bay area of the Monument. The acquired acreage would be managed as part of the Monument's wilderness areas. Of the 144 acres relinquished, 49 acres would be transferred to the City of Sitka, which currently depends on the land for its water and hydro-electric needs. The remaining portion would revert to a private company, which will bear certain surveying and environmental clean-up responsibilities.

The bill has received all necessary clearances and passed the House 420-0 and the Senate by voice vote. We recommend that you sign the bill. *Last day for action is Tuesday, October 14, 1997.*

Phil Caplan 
Sean Maloney

MEMORANDUM FOR THE PRESIDENT

SUBJECT: Enrolled Bill H.R. 1948 - Hood Bay Land Exchange Act of 1997
Sponsor - Rep. Young (R) AK

Last Day for Action

October 14, 1997 - Tuesday

Purpose

To authorize an exchange of land in the Alaskan areas of Admiralty Island National Monument and the City of Sitka.

Agency Recommendations

Office of Management and Budget	Approval
Department of Agriculture	Approval
Council on Environmental Quality	Approval
Department of Justice	No objection (Informally)
Department of the Interior	Defers to Agriculture (Informally)
Environmental Protection Agency	Defers to Agriculture (Informally)
Department of Energy	No comment (Informally)

Discussion

The Admiralty Island National Monument is home to the world's densest population of Alaskan brown bears as well as large populations of bald eagles and other wildlife. Since its establishment in 1978, nearly one million acres of the Monument have been designated as wilderness. Approximately 1,350 acres within the wilderness area are small, privately-owned parcels of land. The U.S. Forest Service has been actively trying to acquire this acreage from willing sellers to ensure the protection of the resources in the Monument.

The United States has an interest in 144 acres near Sitka, Alaska, as a result of a 1960 land patent granted to the Alaska Pulp Corporation (APC). The patent granted the APC ownership of the land for use as a pulp mill. The patent stipulated, however, that the land would revert to the United States if not used as a mill for a period of five years. The mill has not been in use since September 30, 1993.

Provisions of H.R. 1948

H.R. 1948 directs the Secretary of Agriculture to relinquish to the APC the Federal reversionary interest in the aforementioned 144 acres of land in exchange for approximately 54 acres of APC land located within the Hood Bay area of the Monument. The enrolled bill provides that the 54 acres acquired by the United States are to be managed as part of the Monument's Kootznoowoo Wilderness Area.

Upon relinquishment to APC of the Federal reversionary interest near Sitka, the enrolled bill directs the APC to transfer 49 of the 144 acres to the City of Sitka. The City currently has an easement to use this land for water supply and hydro-electric power purposes.

The enrolled bill specifies that its provisions do not alter APC's clean-up responsibilities under its 1995 Commitment Agreement with the State of Alaska. The Agreement specified that the site is to be restored to an industrial clean-up standard.

H.R. 1948 also authorizes the Secretary to conduct and approve all surveys necessary for the exchange and provides that the cost of any surveys are to be borne by APC. The enrolled bill deems the interests of the exchanged land to be of equal value.

Finally, H.R. 1948 authorizes the Secretary of Agriculture to negotiate with private property owners in Chaik Bay on Admiralty Island, with the objective of acquiring such property. Acquisition of the property could be accomplished through existing authority or by subsequent ratification by an Act of Congress.

Conclusion and Recommendations

The Department of Agriculture, in its views letter, advises that the Department "strongly supports acquiring the 54 acres of land at Hood Bay on Admiralty Island National Monument for inclusion in the Kootznoowoo Wilderness, as well as relinquishment of the reversionary interest in lands . . . that have been used as an industrial site."

We join Agriculture and the Council on Environmental Quality in recommending the approval of H.R. 1948, which passed the House by a vote of 420-0 and the Senate by voice vote.

BILLS RECEIVED AT THE WHITE HOUSE

Date received and
notification to OMB: 10/02/97

LAST DAY FOR ACTION: 10/14/97

: Comments	: Date
:	: APPROVED
:	:
:	:
:	:
:	:
:	:
:	:
:	:
:	:

H.R. 394,
An Act to provide for the release of the
reversionary interest held by the United
States in certain property located in the
County of Iosco, Michigan.

Bill Memo
is here

394

237350

238226

(X)

THE WHITE HOUSE
WASHINGTON

✓ 10-14-97

'97 OCT 10 PM 1:41

October 9, 1997

MEMORANDUM FOR THE PRESIDENT

FROM: MACK McLARTY *McL*
SUBJECT: CALL FROM OFFICE OF PRESIDENT BUSH

Jean Becker, President Bush's Chief of Staff, called today and conveyed that President Bush and Mrs. Bush would not be attending the China State Dinner due to a prior commitment. Jean could not have been more pleasant and she conveyed President Bush's genuine appreciation for your thoughtfulness in inviting him.

cc: Erskine Bowles
Sandy Berger

File

THE WHITE HOUSE
WASHINGTON

October 11, 1997

MEMORANDUM FOR THE PRESIDENT

FROM: PHIL CAPLAN
SEAN MALONEY *SM*

SUBJECT: Recent Information Items

We are forwarding the following recent information items:

- (A) **Rubin Update on S.E. Asia Financial Crisis** -- the four principal Southeast Asian nations have come under "sustained pressure in financial markets, with the average exchange rate falling by a third since the beginning of the crisis;" common vulnerabilities include: significant current account deficits, weak financial systems, large external debt burdens, and loss of investor confidence; "only effective" long-term solution is "stronger macroeconomic policies and financial systems;" leaders' commitment to open markets, "for the most part," remains firm, but more cautious; D'Amato-sponsored, post-Mexico legal restrictions prevented direct U.S. aid to Thailand support fund, causing "strong concerns" among Asian allies; Japanese are proposing "very counterproductive" Asian Monetary Fund, excluding U.S. and IMF; Rubin is exploring various proposals, including: creating a macroeconomic policy coordination forum, improving IMF adjustment program response, upgrading Asian financial and regulatory systems, and developing ways to reduce vulnerability among small open economies.
- (B) **Raines Memo on FY98 Appropriations** -- Answers two questions you asked: 1) *What is the Hyde Amendment on reimbursement of legal fees and why is there a senior advisor's veto threat on it?* Frank responds that the amendment, which has been attached to the Commerce/Justice/State bill, would require the government to pay a prevailing criminal defendant's legal fees unless the court found the prosecution was "substantially justified" or that "special circumstances" would make an award unjust; basis for the opposition is that amendment applies to all defendants, not just federal employees. Frank attaches Asst. AG Andrew Fois' letter to Hyde, which provides a fuller explanation. 2) *Why would we oppose partial privatization of DC's corrections funds (the Brownback Amendment)?* Frank says Brownback no longer plans to offer his amendment; would have set aside big part of \$169 million in DC corrections money to pay for privatization contracts; we objected because would have unwisely accelerated rate at which DC privatized housing of maximum security inmates, jeopardizing safety of public and corrections officers.
- (C) **Jerry Seib/WSJ Child Care Article from Rahm** -- Rahm says he's worked with Seib for two years; Seib's a "big proponent of what we are doing on work and family issues;"

10-10-97

Seib writes that while Washington is “obsessed” with campaign finances, these are “hardly the matters that consume” parents trying to find child care for their young children; discusses your plans for a White House conference later this month. *Please see article.*

- (D) **Weather Forecasters Event Summary from McCurry** -- 78 stations took live or taped stand-up reports from the White House; some did night-before and night-after reports as well; other stations did reports from ellipse or nearby rooftops; estimates total, cumulative coverage was equivalent to at least four hours of live White House broadcasts, perhaps eight to twelve hours because most forecasters did two or three segments.
- (E) **Yoni Dotan News Clippings from McCurry** -- collection of Israeli news reports on your Make-A-Wish meeting with Yoni Dotan.

We have also received the following information items:

- **President and Mrs. Bush China Dinner RSVP from Mack** -- Mack reports that they have declined your invitation, but that Bush’s COS “could not have been more pleasant and she conveyed President Bush’s genuine appreciation for your thoughtfulness in inviting him.”

237668

Millison, Cathy L.

From: Andreasen, Steven P.
Sent: Wednesday, October 15, 1997 12:35 PM
To: Millison, Cathy L.
Subject: Package 6522 -- Response to Gilman-Rogers [UNCLASSIFIED]

'97 OCT 16 PM 7:31

Importance:

High

Cathy --

You mentioned to me on Friday that package 6522 had been returned to you from staff Secretary. Story is as follows: Phil Caplan sent a zerox of the package to OMB (Gordon Adams) to make sure their people had cleared. Upon reflection, OMB proposed, and I agreed, to minor modifications in Paragraph 10 of the President's response to Gilman Rogers (see attached -- I've highlighted the changes for you). Coincidentally, ACDA provided me last Friday with an "update" to the "Annex 1" table of costs (which also required a change in Paragraph 2 of the President's response, which is also highlighted in the foregoing), which I have redone (also attached). None of these changes are substantive, and I understand the memo to the President has been signed by both Berger and Hilley. If you could "slip" the revised response (with the changes in paragraph 2 and 10), along with the revised "Annex I" into the package, return to Phil (and advise him that OMB has indeed cleared), and obtain a POTUS signature, I would greatly appreciate it.

Thanks.



6522Answers to
Gilman.doc



6522ANNEX I
redo.doc

10-20-97

10/20/97

Sent to RM for
signature per
Phil Caplan

1. The Arms Control Interagency Working Group (IWG) chaired by the NSC staff coordinates overall policy and implementation with respect to the CTBT. IWG members include the Departments of State, Defense (OSD and JCS) and Energy, ACDA, the Arms Control Intelligence Staff (ACIS) and the Office of Science and Technology Policy (OSTP). Working directly under and reporting to the IWG, an interagency "backstopping" group currently chaired by ACDA and including State, Defense, Energy, and ACIS is responsible for developing guidance on policy and technical issues for U.S. delegations. Backstopping is supported by the Verification and Monitoring Task Force (VMTF), co-chaired by ACDA and ACIS, which addresses technical issues in support of Treaty implementation.
2. The estimated cost of the construction of the complete International Monitoring System (IMS) is \$12738.5 million (see Appendix I for cost breakdown). IMS construction will be accomplished over the next several years, consistent with the pace established by the Preparatory Commission (Prepcom). Our goal (as stated in the Treaty) is for the verification regime to be capable of meeting the verification requirements of the CTBT at entry into force (EIF). Notwithstanding uncertainty about the date of EIF, it is in the United States' national interest to invest now in the IMS to strengthen our capability to monitor the current global testing moratorium, to ensure we have the benefit of the Treaty's monitoring capabilities at EIF and to facilitate EIF by maintaining the international community's commitment to the Treaty.
3. The sites of the sensors comprising the IMS are the results of negotiations at the Geneva Conference on Disarmament (CD). The actual sites were proposed by expert groups for each of the four IMS monitoring technologies. These groups were composed of representatives from the states negotiating the Treaty, in which U.S. technical experts played a leading role. The network as a whole was designed to provide global coverage for CTBT monitoring, and to the extent possible to take advantage of existing stations. In the case of seismic stations, this was considerable.
4. The CTBT was transmitted to the Senate for advice and consent on September 22, 1997.

5. Our expectation is that India, Pakistan and North Korea will conclude that their security interests are best served by joining the overwhelming international consensus in favor of the CTBT, although we cannot predict when each country will sign and ratify the Treaty. That said, the continued global moratorium on nuclear testing, the existence of an internationally supported and managed monitoring system for the CTBT and the ratification by the remaining 41 key states and others can be expected to be factors in their internal deliberations.
6. The Treaty provides that if three years after signature (September 1999), one or more of the 44 states required for EIF have not ratified, a conference of the states that have already ratified may be convened upon the request of a majority of those states, and annually thereafter (unless otherwise decided by the conference). The conference would consider what measures may be taken to accelerate the ratification process in order to facilitate the early entry into force of the Treaty. We cannot predict the exact date of EIF; however, the U.S. believes the IMS should be established as soon as feasible in order to ensure that at entry into force of the Treaty, the verification regime shall be capable of meeting the verification requirements of the Treaty.
7. No. There is no consideration being given to the DOD "taking over operation and funding" of the IMS. We are confident the Treaty will enter into force.
8. The U.S. currently has considerable capability to monitor nuclear explosions, and that capability will undergo significant improvement over the next several years. However, the U.S. needs both its national assets and those afforded by the Treaty to monitor compliance with the CTBT. Many U.S. installed and operated sensors will be operated in conjunction with the IMS, which will complement, not duplicate, U.S. national capabilities.
9. The IMS will provide detection capabilities that the U.S. would otherwise find difficult to obtain. The purpose of the IMS is to provide monitoring data for all Parties to the CTBT. However, the U.S., which played a large role in determining the composition of the IMS, throughout the negotiations sought a cost-effective IMS that complemented U.S. national means to the greatest extent possible. The resulting system satisfies this objective.

10. The U.S. ~~assessed~~ contribution to the CTBT Prepcom for calendar year 1997 is \$7 million. We expect the U.S. share assessment for CY98 to be \$15-17.5 million (the CY98 budget is being developed for approval will be approved at the Prepcom plenary December 15-19). We estimate our CY99 share of Prepcom costs assessment to be \$20-25 million. These funds are to be provided by the State/ACDA budgets. We do not have precise government-wide figures for CTBT-related costs at this time. However, we will be happy to provide this information once it is available. Additionally, many of our internal program and personnel costs associated with global nuclear test monitoring would require funding even if the CTBT did not enter into force.

11. The U.S. has provided and will continue to provide significant in-kind contributions to the development and effective functioning of the Treaty's verification regime. In addition to the considerable contributions made by U.S. government experts during the negotiations and currently working with the Prepcom on the development of the verification regime, the major in-kind contributions are the following: (a) The Department of Defense has funded the establishment and operation of the Prototype International Data Center (in Arlington, VA). This data center will gradually cease operations as the Provisional IDC in Vienna is progressively established. It has developed software, procedures and training for data management that represent an in-kind contribution to the CTBT Organization. (b) The Department of Defense has installed seismic stations and hydroacoustic sensors over the past 20 or so years that will become part of the IMS, and has budgeted funds to install a number of other sensors that will be part of the IMS. Of the 50 primary seismic stations, the U.S. installed 18 of them in the past and expects to install 14 more, pending agreement with host states. Of the 120 auxiliary stations, the U.S. installed 14 of them in the past and expects to install 8 more. Of the 11 hydroacoustic stations, the U.S. has installed two in the past and expects to install two more. Of the 80 radionuclide stations, the U.S. has installed three in the past and expects to install 10 more. (c) The Department of Energy is funding considerable research and development in verification technologies that will be used by the CTBT Organization as well as by our national monitoring agencies. In particular, the radionuclide and infrasound sensors being developed by the DOE are being made commercially available, so that both our U.S. NDC and CTBTO, on behalf of other countries, will have a long-term reliable source of high

quality monitoring equipment to draw on to meet the treaty monitoring requirements. The DOE has had an extensive seismic research program working in concert with the U.S. mining industry to characterize the seismic signals from legitimate mining activities, to minimize false alarms. In addition DOE has funded software development to help analysts conduct effective detection, location, identification and characterization analyses for all the technologies (i.e., hydroacoustic, seismic, infrasonic and radionuclide). Other DOE research has developed various on-site inspection technologies and capabilities.

12. The Treaty provides for states to receive a reduction in their annual assessments for some of the costs of installing and upgrading IMS sensors. The United States intends to seek reductions for expenditures on new IMS facilities. A precise amount for such reductions is not yet known; however, we will be happy to provide this information once it is available.

ANNEX I
CTBTO ESTIMATED CAPITAL COSTS
(in millions of U.S. dollars)

IMS CAPITAL COSTS	138.5
7 primary seismic arrays, 8 upgrades of 3-C to arrays, 4 new 3-C stations, and upgrades at 12 stations	47.9
20 new auxiliary seismic stations; communications & data storage equipment at all 120 stations	14.8
4 new hydrophone stations, upgrades at 2 stations	24.5
5 new T-phase stations	1.5
60 new infrasound stations	15.0
80 new radionuclide stations	32.0
Hardware for authentication	2.8
IDC CAPITAL COSTS	10.0
OSI CAPITAL COSTS	9.0
COMMUNICATIONS	7.0
TOTAL	164.5

'97 OCT 6 PM 5:19 522

THE WHITE HOUSE

WASHINGTON

October 6, 1997

ACTION

MEMORANDUM FOR THE PRESIDENT

FROM: SAMUEL BERGER *SB*
JOHN HILLEY *John Hilley*

SUBJECT: Letter from Representatives Gilman and Rogers on
CTBT Preparatory Commission

Purpose

To respond to a letter from Representatives Gilman and Rogers on funding for the CTBT Preparatory Commission (Prepcom).

Background

Representatives Gilman and Rogers have written you seeking additional information in connection with the budget amendment submitted by the Administration in July relating to funding for the CTBT Prepcom in FY98.

Earlier this week, Representative Gilman and Senator Helms objected to a reprogramming of FY97 funds for partial payment of the U.S. Prepcom assessment in calendar year 1997. Failure to win approval of the FY98 budget amendment in conference next week would mean we are left without even partial payment of the cumulative U.S. Prepcom assessment in calendar year 1997 and 1998, undermining our effort to set up the international monitoring system for the earliest possible entry into force of the Treaty.

The response from you transmits answers to the 12 questions posed by Gilman and Rogers, and urges the Representatives to approve funding for the CTBT Prepcom.

RECOMMENDATION

That you sign the letters to Representatives Gilman and Rogers.

Attachments

Tab A Letters to Representatives Gilman and Rogers
Tab B Letter from Representatives Gilman and Rogers

cc: Vice President
Chief of Staff

THE WHITE HOUSE

WASHINGTON

Dear Representative Rogers:

Thank you for your letter regarding the Administration's proposed budget amendment submitted July 17, 1997 relating to funding for the Comprehensive Test Ban Treaty Preparatory Commission (CTBT Prepcom).

I trust the attached response to the questions raised in your letter will facilitate Congressional support for the Administration's proposal to provide funding for the CTBT Prepcom. Your timely assistance in this important initiative would be greatly appreciated and would allow us to establish an international monitoring system for the earliest possible entry into force of the Treaty.

Sincerely,

The Honorable Harold Rogers
House of Representatives
Washington, D.C. 20515-1705

1. The Arms Control Interagency Working Group (IWG) chaired by the NSC staff coordinates overall policy and implementation with respect to the CTBT. IWG members include the Departments of State, Defense (OSD and JCS) and Energy, ACDA, the Arms Control Intelligence Staff (ACIS) and the Office of Science and Technology Policy (OSTP). Working directly under and reporting to the IWG, an interagency "backstopping" group currently chaired by ACDA and including State, Defense, Energy, and ACIS is responsible for developing guidance on policy and technical issues for U.S. delegations. Backstopping is supported by the Verification and Monitoring Task Force (VMTF), co-chaired by ACDA and ACIS, which addresses technical issues in support of Treaty implementation.
2. The estimated cost of the construction of the complete International Monitoring System (IMS) is \$138.5 million (see Appendix I for cost breakdown). IMS construction will be accomplished over the next several years, consistent with the pace established by the Preparatory Commission (Prepcom). Our goal (as stated in the Treaty) is for the verification regime to be capable of meeting the verification requirements of the CTBT at entry into force (EIF). Notwithstanding uncertainty about the date of EIF, it is in the United States' national interest to invest now in the IMS to strengthen our capability to monitor the current global testing moratorium, to ensure we have the benefit of the Treaty's monitoring capabilities at EIF and to facilitate EIF by maintaining the international community's commitment to the Treaty.
3. The sites of the sensors comprising the IMS are the results of negotiations at the Geneva Conference on Disarmament (CD). The actual sites were proposed by expert groups for each of the four IMS monitoring technologies. These groups were composed of representatives from the states negotiating the Treaty, in which U.S. technical experts played a leading role. The network as a whole was designed to provide global coverage for CTBT monitoring, and to the extent possible to take advantage of existing stations. In the case of seismic stations, this was considerable.
4. The CTBT was transmitted to the Senate for advice and consent on September 22, 1997.

5. Our expectation is that India, Pakistan and North Korea will conclude that their security interests are best served by joining the overwhelming international consensus in favor of the CTBT, although we cannot predict when each country will sign and ratify the Treaty. That said, the continued global moratorium on nuclear testing, the existence of an internationally supported and managed monitoring system for the CTBT and the ratification by the remaining 41 key states and others can be expected to be factors in their internal deliberations.
6. The Treaty provides that if three years after signature (September 1999), one or more of the 44 states required for EIF have not ratified, a conference of the states that have already ratified may be convened upon the request of a majority of those states, and annually thereafter (unless otherwise decided by the conference). The conference would consider what measures may be taken to accelerate the ratification process in order to facilitate the early entry into force of the Treaty. We cannot predict the exact date of EIF; however, the U.S. believes the IMS should be established as soon as feasible in order to ensure that at entry into force of the Treaty, the verification regime shall be capable of meeting the verification requirements of the Treaty.
7. No. There is no consideration being given to the DOD "taking over operation and funding" of the IMS. We are confident the Treaty will enter into force.
8. The U.S. currently has considerable capability to monitor nuclear explosions, and that capability will undergo significant improvement over the next several years. However, the U.S. needs both its national assets and those afforded by the Treaty to monitor compliance with the CTBT. Many U.S. installed and operated sensors will be operated in conjunction with the IMS, which will complement, not duplicate, U.S. national capabilities.
9. The IMS will provide detection capabilities that the U.S. would otherwise find difficult to obtain. The purpose of the IMS is to provide monitoring data for all Parties to the CTBT. However, the U.S., which played a large role in determining the composition of the IMS, throughout the negotiations sought a cost-effective IMS that complemented U.S. national means to the greatest extent possible. The resulting system satisfies this objective.

10. The U.S. contribution to the CTBT Prepcom for calendar year 1997 is \$7 million. We expect the U.S. share for CY98 to be \$15-17.5 million (the CY98 budget is being developed for approval at the Prepcom plenary December 15-19). We estimate our CY99 share of Prepcom costs to be \$20-25 million. These funds are to be provided by the State/ACDA budgets. We do not have precise government-wide figures for CTBT-related costs at this time. However, we will be happy to provide this information once it is available. Additionally, many of our internal program and personnel costs associated with global nuclear test monitoring would require funding even if the CTBT did not enter into force.
11. The U.S. has provided and will continue to provide significant in-kind contributions to the development and effective functioning of the Treaty's verification regime. In addition to the considerable contributions made by U.S. government experts during the negotiations and currently working with the Prepcom on the development of the verification regime, the major in-kind contributions are the following: (a) The Department of Defense has funded the establishment and operation of the Prototype International Data Center (in Arlington, VA). This data center will gradually cease operations as the Provisional IDC in Vienna is progressively established. It has developed software, procedures and training for data management that represent an in-kind contribution to the CTBT Organization. (b) The Department of Defense has installed seismic stations and hydroacoustic sensors over the past 20 or so years that will become part of the IMS, and has budgeted funds to install a number of other sensors that will be part of the IMS. Of the 50 primary seismic stations, the U.S. installed 18 of them in the past and expects to install 14 more, pending agreement with host states. Of the 120 auxiliary stations, the U.S. installed 14 of them in the past and expects to install 8 more. Of the 11 hydroacoustic stations, the U.S. has installed two in the past and expects to install two more. Of the 80 radionuclide stations, the U.S. has installed three in the past and expects to install 10 more. (c) The Department of Energy is funding considerable research and development in verification technologies that will be used by the CTBT Organization as well as by our national monitoring agencies. In particular, the radionuclide and infrasound sensors being developed by the DOE are being made commercially available, so that both our U.S. NDC and CTBTO, on behalf of other countries, will have a long-term reliable source of high quality monitoring equipment to draw on to meet the treaty

monitoring requirements. The DOE has had an extensive seismic research program working in concert with the U.S. mining industry to characterize the seismic signals from legitimate mining activities, to minimize false alarms. In addition DOE has funded software development to help analysts conduct effective detection, location, identification and characterization analyses for all the technologies (i.e., hydroacoustic, seismic, infrasonic and radionuclide). Other DOE research has developed various on-site inspection technologies and capabilities.

12. The Treaty provides for states to receive a reduction in their annual assessments for some of the costs of installing and upgrading IMS sensors. The United States intends to seek reductions for expenditures on new IMS facilities. A precise amount for such reductions is not yet known; however, we will be happy to provide this information once it is available.

ANNEX I
CTBTO ESTIMATED CAPITAL COSTS
(in millions of U.S. dollars)

IMS CAPITAL COSTS	138.5
7 primary seismic arrays, 8 upgrades of 3-C to arrays, 4 new 3-C stations, and upgrades at 12 stations	47.9
20 new auxiliary seismic stations; communications & data storage equipment at all 120 stations	14.8
4 new hydrophone stations, upgrades at 2 stations	24.5
5 new T-phase stations	1.5
60 new infrasound stations	15.0
80 new radionuclide stations	32.0
Hardware for authentication	2.8
IDC CAPITAL COSTS	10.0
OSI CAPITAL COSTS	9.0
COMMUNICATIONS	7.0
TOTAL	164.5

THE WHITE HOUSE
WASHINGTON

Dear Mr. Chairman:

Thank you for your letter regarding the Administration's proposed budget amendment submitted July 17, 1997 relating to funding for the Comprehensive Test Ban Treaty Preparatory Commission (CTBT Prepcom).

I trust the attached response to the questions raised in your letter will facilitate Congressional support for the Administration's proposal to provide funding for the CTBT Prepcom. Your timely assistance in this important initiative would be greatly appreciated and would allow us to establish an international monitoring system for the earliest possible entry into force of the Treaty.

Sincerely,

The Honorable Benjamin A. Gilman
Chairman
Committee on International Relations
House of Representatives
Washington, D.C. 20515-3220

1. The Arms Control Interagency Working Group (IWG) chaired by the NSC staff coordinates overall policy and implementation with respect to the CTBT. IWG members include the Departments of State, Defense (OSD and JCS) and Energy, ACDA, the Arms Control Intelligence Staff (ACIS) and the Office of Science and Technology Policy (OSTP). Working directly under and reporting to the IWG, an interagency "backstopping" group currently chaired by ACDA and including State, Defense, Energy, and ACIS is responsible for developing guidance on policy and technical issues for U.S. delegations. Backstopping is supported by the Verification and Monitoring Task Force (VMTF), co-chaired by ACDA and ACIS, which addresses technical issues in support of Treaty implementation.
2. The estimated cost of the construction of the complete International Monitoring System (IMS) is \$138.5 million (see Appendix I for cost breakdown). IMS construction will be accomplished over the next several years, consistent with the pace established by the Preparatory Commission (Prepcom). Our goal (as stated in the Treaty) is for the verification regime to be capable of meeting the verification requirements of the CTBT at entry into force (EIF). Notwithstanding uncertainty about the date of EIF, it is in the United States' national interest to invest now in the IMS to strengthen our capability to monitor the current global testing moratorium, to ensure we have the benefit of the Treaty's monitoring capabilities at EIF and to facilitate EIF by maintaining the international community's commitment to the Treaty.
3. The sites of the sensors comprising the IMS are the results of negotiations at the Geneva Conference on Disarmament (CD). The actual sites were proposed by expert groups for each of the four IMS monitoring technologies. These groups were composed of representatives from the states negotiating the Treaty, in which U.S. technical experts played a leading role. The network as a whole was designed to provide global coverage for CTBT monitoring, and to the extent possible to take advantage of existing stations. In the case of seismic stations, this was considerable.
4. The CTBT was transmitted to the Senate for advice and consent on September 22, 1997.

5. Our expectation is that India, Pakistan and North Korea will conclude that their security interests are best served by joining the overwhelming international consensus in favor of the CTBT, although we cannot predict when each country will sign and ratify the Treaty. That said, the continued global moratorium on nuclear testing, the existence of an internationally supported and managed monitoring system for the CTBT and the ratification by the remaining 41 key states and others can be expected to be factors in their internal deliberations.
6. The Treaty provides that if three years after signature (September 1999), one or more of the 44 states required for EIF have not ratified, a conference of the states that have already ratified may be convened upon the request of a majority of those states, and annually thereafter (unless otherwise decided by the conference). The conference would consider what measures may be taken to accelerate the ratification process in order to facilitate the early entry into force of the Treaty. We cannot predict the exact date of EIF; however, the U.S. believes the IMS should be established as soon as feasible in order to ensure that at entry into force of the Treaty, the verification regime shall be capable of meeting the verification requirements of the Treaty.
7. No. There is no consideration being given to the DOD "taking over operation and funding" of the IMS. We are confident the Treaty will enter into force.
8. The U.S. currently has considerable capability to monitor nuclear explosions, and that capability will undergo significant improvement over the next several years. However, the U.S. needs both its national assets and those afforded by the Treaty to monitor compliance with the CTBT. Many U.S. installed and operated sensors will be operated in conjunction with the IMS, which will complement, not duplicate, U.S. national capabilities.
9. The IMS will provide detection capabilities that the U.S. would otherwise find difficult to obtain. The purpose of the IMS is to provide monitoring data for all Parties to the CTBT. However, the U.S., which played a large role in determining the composition of the IMS, throughout the negotiations sought a cost-effective IMS that complemented U.S. national means to the greatest extent possible. The resulting system satisfies this objective.

10. The U.S. contribution to the CTBT Prepcom for calendar year 1997 is \$7 million. We expect the U.S. share for CY98 to be \$15-17.5 million (the CY98 budget is being developed for approval at the Prepcom plenary December 15-19). We estimate our CY99 share of Prepcom costs to be \$20-25 million. These funds are to be provided by the State/ACDA budgets. We do not have precise government-wide figures for CTBT-related costs at this time. However, we will be happy to provide this information once it is available. Additionally, many of our internal program and personnel costs associated with global nuclear test monitoring would require funding even if the CTBT did not enter into force.
11. The U.S. has provided and will continue to provide significant in-kind contributions to the development and effective functioning of the Treaty's verification regime. In addition to the considerable contributions made by U.S. government experts during the negotiations and currently working with the Prepcom on the development of the verification regime, the major in-kind contributions are the following: (a) The Department of Defense has funded the establishment and operation of the Prototype International Data Center (in Arlington, VA). This data center will gradually cease operations as the Provisional IDC in Vienna is progressively established. It has developed software, procedures and training for data management that represent an in-kind contribution to the CTBT Organization. (b) The Department of Defense has installed seismic stations and hydroacoustic sensors over the past 20 or so years that will become part of the IMS, and has budgeted funds to install a number of other sensors that will be part of the IMS. Of the 50 primary seismic stations, the U.S. installed 18 of them in the past and expects to install 14 more, pending agreement with host states. Of the 120 auxiliary stations, the U.S. installed 14 of them in the past and expects to install 8 more. Of the 11 hydroacoustic stations, the U.S. has installed two in the past and expects to install two more. Of the 80 radionuclide stations, the U.S. has installed three in the past and expects to install 10 more. (c) The Department of Energy is funding considerable research and development in verification technologies that will be used by the CTBT Organization as well as by our national monitoring agencies. In particular, the radionuclide and infrasound sensors being developed by the DOE are being made commercially available, so that both our U.S. NDC and CTBTO, on behalf of other countries, will have a long-term reliable source of high quality monitoring equipment to draw on to meet the treaty

monitoring requirements. The DOE has had an extensive seismic research program working in concert with the U.S. mining industry to characterize the seismic signals from legitimate mining activities, to minimize false alarms. In addition DOE has funded software development to help analysts conduct effective detection, location, identification and characterization analyses for all the technologies (i.e., hydroacoustic, seismic, infrasonic and radionuclide). Other DOE research has developed various on-site inspection technologies and capabilities.

12. The Treaty provides for states to receive a reduction in their annual assessments for some of the costs of installing and upgrading IMS sensors. The United States intends to seek reductions for expenditures on new IMS facilities. A precise amount for such reductions is not yet known; however, we will be happy to provide this information once it is available.

ANNEX I
CTBTO ESTIMATED CAPITAL COSTS
(in millions of U.S. dollars)

IMS CAPITAL COSTS	138.5
7 primary seismic arrays, 8 upgrades of 3-C to arrays, 4 new 3-C stations, and upgrades at 12 stations	47.9
20 new auxiliary seismic stations; communications & data storage equipment at all 120 stations	14.8
4 new hydrophone stations, upgrades at 2 stations	24.5
5 new T-phase stations	1.5
60 new infrasound stations	15.0
80 new radionuclide stations	32.0
Hardware for authentication	2.8
IDC CAPITAL COSTS	10.0
OSI CAPITAL COSTS	9.0
COMMUNICATIONS	7.0
TOTAL	164.5

65 22

Congress of the United States
House of Representatives
Washington, DC 20515

September 19, 1997

The Honorable William J. Clinton
The White House
1600 Pennsylvania Ave., N.W.
Washington, D.C.

SEP 24 PM 3:49

Dear Mr. President:

We are writing to seek additional information in connection with the budget amendment submitted on July 17, 1997 relating to funding for the Comprehensive Test Ban Treaty Preparatory Commission. Our Committees have been attempting to gather information as quickly as possible in response to the request. Based on what we have been able to obtain thus far, there are still important issues on which additional information is needed in order to be able to act on the request. In this regard, we would appreciate your assistance in obtaining responses to the following list of questions.

(1) The information provided to date indicates that there are significant policy issues and determinations which are not solely within the purview of the Arms Control and Disarmament Agency. Could you please provide us with a detailed explanation of the interagency process which is being and will be used to make CTBT implementation and policy related decisions, including the agencies that are participating and the structure of the process?

(2) The costs of the CTBT Preparatory Commission include the construction of an international monitoring system at a cost of at least \$165,000,000, of which the United States would be assessed 25 percent, in advance of ratification or entry into force of the Treaty. What is the rationale for undertaking such a large investment before it is known whether the United States will become a party to the Treaty or the Treaty will ever go into effect?

(3) With respect to the 170 seismic arrays, 11 hydroacoustic arrays, 60 infrasound sensors, and 80 radionuclide sensors, how were the sites chosen – and who was responsible for the choice of sites?

(4) With respect to the United States participation in the Treaty, when will the Treaty be submitted to the Senate for consideration?

SEP 25 11:30

(5) Under the terms of the Treaty, to enter into effect, 44 countries, including North Korea, India, and Pakistan, must ratify the CTBT. Thus far, those three countries have not even signed the agreement, let alone begun consideration of ratification. When are these countries expected to sign and ratify the Treaty?

(6) The Treaty anticipates entry into force in 1999, and construction of the monitoring system is apparently targeted to be complete by that date. If that date is not met, as even ACDA's experts appear to concede, then there will apparently be a conference to decide what to do. What will happen to the international monitoring network if the Treaty does not enter into force on the anticipated date?

(7) Is the Department of Defense prepared to take over operation and funding of the international monitoring system if the Treaty does not enter into force?

(8) Does the United States currently possess the capability on its own or in combination with its allies to detect nuclear testing? Does the Treaty require the United States to fund a CTBT monitoring regime which duplicates in whole or in part existing U.S. national capabilities?

(9) Is the purpose of the international monitoring system to provide detection capabilities to the United States that we do not currently possess?

(10) What is the total amount spent or expected to be spent by the federal government for the Comprehensive Test Ban Treaty, including the Preparatory Commission, in fiscal years 1997 and 1998, broken out by Department and agency, including the Department of Defense, the On-Site Inspection Agency, the Department of Energy, the Department of State and ACDA? What are the projections for annual costs in future fiscal years?

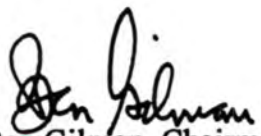
(11) What in-kind contributions are the Department of Defense, the Department of Energy, or any other agency providing or expected to provide?

(12) Which of these in-kind contributions is the Administration planning to request credits for against the U.S. contribution to the Preparatory Commission? Which of these in-kind contributions has the Administration agreed not to seek reimbursement or credit for?

Responses to these questions will assist our Committees as we continue our examination of the fiscal year 1998 budget amendment.

To the extent that any response contains classified information, it would be appreciated if that response would be provided under separate cover. For those questions involving inter-agency budget figures, it would be appreciated if those numbers could be verified by the Office of Management and Budget.

Thank you for your consideration of these questions.


Ben Gilman, Chairman
Committee on International
Relations

Sincerely yours,


Harold Rogers, Chairman
Subcommittee on the Departments of
Commerce, Justice, and State, the Judiciary,
and Related Agencies
Committee on Appropriations

RM: check 237198

THE WHITE HOUSE
WASHINGTON

'97 OCT 2 AM 9:34

October 2, 1997

RECOMMENDED TELEPHONE CALL

TO:

Senator Daniel Patrick Moynihan (D-NY)
Ranking Member, Senate Finance Committee

DATE:

October 2, 1997

RECOMMENDED BY:

Susan Brophy *SB*

PURPOSE:

To thank Senator Moynihan for his efforts in producing the bipartisan Fast Track bill that won overwhelming support in the Senate Finance Committee yesterday.

BACKGROUND:

It was a voice vote with the only reported 'no' from Senator Conrad (D-ND). The bill protects our overall trade objectives and promotes our labor and environment goals. The momentum from the Finance Committee's action will hopefully encourage the House leaders to produce a good bipartisan bill in the Ways and Means Committee.

ATTACHMENT:

Talking points.

CONTACT PERSON AND
PHONE NUMBER(S):

Tony Bullock
(202) 224-9557

DATE OF SUBMISSION:

October 2, 1997

ACTION: _____

Attachment #1

Talking points

- Thank you for your hard work in producing this good Fast Track bill.
- I know you worked long hours to produce this bill with bipartisan support, which we greatly appreciate.
- Clearly, the outcome reflects the fact that you went out of your way to craft a bill that balanced the interests and concerns of all of the members of the committee.
- Thank you again. We look forward to getting the bill to the floor and your help in final passage.

THE WHITE HOUSE
WASHINGTON

237148
99
Rh: check
'97 OCT 2 AM 9:50

October 2, 1997

RECOMMENDED TELEPHONE CALL

TO: X

Senator William V. Roth (R-DE)
Chairman, Senate Finance Committee

DATE:

October 2, 1997

RECOMMENDED BY:

Susan Brophy

PURPOSE:

To thank Chairman Roth for his efforts in producing the bipartisan Fast Track bill that won overwhelming support in the Senate Finance Committee yesterday.

BACKGROUND:

It was a voice vote with the only reported 'no' from Senator Conrad (D-ND). The bill protects our overall trade objectives and promotes our labor and environment goals. The momentum from the Finance Committee's action will hopefully encourage the House leaders to produce a good bipartisan bill in the Ways and Means Committee.

ATTACHMENT:

Talking points.

CONTACT PERSON AND
PHONE NUMBER(S):

John Duncan
(202) 224-3679

DATE OF SUBMISSION:

October 2, 1997

ACTION: _____

Attachment #1

Talking points

- Thank you for your hard work in producing this good Fast Track bill.
- I know you worked long hours to produce this bill with bipartisan support, which we greatly appreciate.
- Clearly, the outcome reflects the fact that you went out of your way to craft a bill that balanced the interests and concerns of all of the members of the committee.
- Thank you again. We look forward to getting the bill to the floor and your help in final passage.