

Originally Processed With FOIA(s):

1998-0004-F[1]; 2005-0336-F

FOIA Number:

S

FOIA MARKER

**This is not a textual record. This is used as an
administrative marker by the George Bush Presidential
Library Staff.**

Record Group/Collection: George H.W. Bush Presidential Records
Collection/Office of Origin: Chief of Staff, White House Office of
Series: Sununu, John, Files
Subseries: White House Offices Files

OA/ID Number: 29183
Folder ID Number: 29183-005

Folder Title:
Science and Technology (1989) [3]: Bromley

Stack:	Row:	Section:	Shelf:	Position:
G	15	25	5	7

Withdrawal/Redaction Sheet

(George Bush Library)

Doc. No. / Type	Subject/Title	Date	Restriction	Classification
01. Note	From D. Allan Bromley to John Sununu Re: NASP Funding (4 pp.)	9/13/89	P-5	
02. Memo	From D. Allan Bromley to John Sununu Re: Oceans and International Environmental and Scientific Affairs Nominee (1 pp.)	9/6/89	(b)(6)	
03. Memo	From D. Allan Bromley to POTUS Re: Your Forthcoming Meeting w/PM Brian Mulroney of Canada [2 copies] (2 pp.)	8/24/89	P-5	
04. Memo	From D. Allan Bromley to POTUS Re: Visit of Japanese PM [2 copies] (2 pp.)	8/24/89	P-5	
05. Memo	From D. Allan Bromley to POTUS Re: National Science Board Memberships [2 copies] (2 pp.)	8/24/89	(b)(6)	
06. Memo	From D. Allan Bromley to POTUS Re: Annual Science Counselor's Conference (1 pp.)	8/28/89	P-5	
07. Memo	From D. Allan Bromley to POTUS Re: Background Information on the Superconducting Super Collider [2 copies] (16 pp.)	8/31/89	P-5	

Page 1 of 2

Collection:

Record Group: Bush Presidential Records
Office: Chief of Staff to the President, Office of the
Series: Sununu, John, Files
Subseries: White House Offices File
WHORM Cat.:
File Location: Science and Technology (1989) [3]: Bromley

Pinksheet Number: KO0526
OA/ID Number: 29183-005
Date Closed: 12/1/2004
FOIA/Sys Case #: 1998-0004-F[1]
Re-review Case #: 2005-0426-S
P-2/P-5 Review Case #:

Withdrawal/Redaction Sheet

(George Bush Library)

Doc. No. / Type	Subject/Title	Date	Restriction	Classification
08. Memo	From William Roper to John Sununu Re: Status of the Americans with Disabilities Act (3 pp.)	9/1/89	P-5	

Page 2 of 2

Collection:

Record Group: Bush Presidential Records
Office: Chief of Staff to the President, Office of the
Series: Sununu, John, Files
Subseries: White House Offices File
WHORM Cat.:
File Location: Science and Technology (1989) [3]: Bromley

Pinksheet Number: KO0526
OA/ID Number: 29183-005
Date Closed: 12/1/2004
FOIA/Sys Case #: 1998-0004-F[1]
Re-review Case #: 2005-0426-S
P-2/P-5 Review Case #:

THE WHITE HOUSE
WASHINGTON

Sept. 3, 1989.
John Sumner:

Here with rough answers to
your questions re Exxon oil
spill in Alaska.

Summary answers are

- a) Will be low toxicity for
several years
- b) Spill will not be visible
after 2 to 3 years
- c) Small quantities of detectable
oil could remain in sheltered
bays for 20 years or more.

Alan

2

1. Of the oil now left on the shoreline, how long will it remain?

The persistence of oil on the shoreline of Prince William Sound, the Gulf of Alaska, and Kodiak will be governed by a variety of considerations. Small quantities of detectable oil could remain in sheltered, low-energy bays for a period of twenty years or more (Research Planning Institute 1979). This was evidenced by the METULA spill in Tierra Del Fuego and the ARROW spill in Chedabucto Bay, Nova Scotia. (Owens 1971; Hann 1975; Blount 1978). Oil deposited on high-energy, finer-grain beaches will be removed very quickly -- within 12 months. While there is a wide range of shoreline types between these two extremes, the majority of the shoreline affected by the EXXON VALDEZ spill would be classified as moderate to high energy with a relatively short persistence of surface oil.

2. How long will the oil be toxic to biota?

The toxicity of Prudhoe Bay Crude (PBC) is attributable to two broad categories of petroleum hydrocarbons: low molecular-weight aromatic compounds such as benzene and the middle-to-high molecular weight aromatics such as the naphthalene series and phenanthrenes. The low-molecular weight compounds volatilized very quickly and did not remain more than a few days after the spill. In fact, none of these very toxic, very volatile compounds have been detected in samples of oil from the contaminated shoreline. (Jim Payne, SAIC, personal communication.)

However, studies by Andersen et.al. (1985) have shown medium-term toxicity for Alaskan species (both juvenile and adult life stages) associated with the medium-weight aromatics. This study is quite appropriate for application in the Exxon Valdez spill because the investigators tested PBC that had been fractionated to represent fresh, moderately weathered, and heavily weathered oil. The moderately weathered oil showed chronic toxicities that would be of concern. But the heavily weathered fraction had essentially no toxicity.

In late August, samples were collected from a shoreline in Prince William Sound that had been heavily oiled but not yet treated. The samples were from the surface and subsurface. The surface samples showed a high degree of microbial degradation of the naphthalene series, but only a small amount of the C3 naphthalenes remained.

3

Therefore, the surface oil has very low toxicity; the only toxicity remaining would be due to the phenathrenes but we expect to see continued degradation, probably within the next year. We already see significant losses of C1 phenathrenes in the surface samples. We see evidence of the relatively low toxicity of the surface oil in that there are large numbers of living organisms in the lower intertidal zones of beaches that have not been washed.

However, the subsurface samples showed that most of the C3 naphthalenes remained, and the phenanthrenes showed almost no weathering. The subsurface oil still has a moderate level of toxicity, and the rates of weathering and detoxification by biodegradation will be much slower. The oil that is not removed by winter storms will probably take several years to be rendered non-toxic. But, the subsurface oil is not readily available to aquatic organisms so there is not much of a pathway of exposure or uptake. The subsurface oil is not very mobile and will become increasingly less mobile over time. The naphthalenes are known to leach out from beach sediments for a period of up to one-half year. (Jim Payne, SAIC, personal communication). But the high molecular weight aromatics have essentially no water solubility and so they cannot enter the biosphere if they remain buried in the beach sediments.

3. How long will the oil be visible?

Except in isolated conditions (for example, oil stranded above the high tide line or oil which has been covered with sediment and then re-exposed), visible oil should not be detectable after two to three years, as evidenced by the AMOCO CADIZ and URQUIOLA spills (Gundlach and Hayes 1977; Research Planning Institute 1978a; Research Planning Institute 1978b). There could be leaching from subsurface oil next summer, with a few scattered tarballs (Blumer et al. 1973) remaining on the ocean surface.

4. Is there a way to clean the oil or make it non-toxic?

Continued efforts to enhance natural biological processes appears to be the only effective method to deal with the oiling situation that will remain next spring. Increasing oil viscosity is rendering hot, high pressure water flushing increasingly less effective in dealing with the current oiling situation. By spring, oil that remains deeply

4

buried in the sediments will be unreachable unless heavy equipment is employed to uncover the surface sediments. We believe the disruption of biological activity on the surface by this approach would outway any benefit derived by removing buried oil.

5. How well do natural forces help cleanup the shoreline?

The extent to which natural processes effectively clean oil from the shoreline depends a great deal on the degree of exposure of the shoreline to wave activity. The more exposed sections of coast will be quickly and completely cleaned; high wave action that thoroughly tumbles shoreline sediments is clearly the most effective cleaning mechanism.

Oil deeply buried in the interstitial spaces between sediment particles will not be affected by continuous wave tumbling, but tidal and groundwater flushing, coupled with microbial weathering, will still be effective on a longer time scale. Studies to date have indicated that natural microbial degradation is actively degrading the oil at rates much greater than expected in the cold water environment. However is not known how well microbial degradation will be effective in dealing with the waxy and asphaltic fractions of the oil.

6. What are the natural forces that help cleanup the shoreline?

Natural mechanical and biological weathering processes serve to disperse and detoxify the oil on the shoreline over time. The primary mechanical process is wave action and the associated summer/winter cycle of sediment transport to and from the shoreline. The eventual fate of the oil, however, is primarily controlled by the rate that biological weathering results in the breakdown and oxidation of the oil by specific bacteria.

BIBLIOGRAPHY

Anderson, J., 1985, Toxicity of PBC Oil On Alaskan Species; Proc. 1985 Oil Spill Conference, Am. Petrol. Inst., Washington, DC.

Blount, A. 1978. Two years after the Metula oil spill, Strait of Magellan, Chile - oil interaction with coastal environments. Columbia,

5

South Carolina: Coastal Research Division, Dept. of Geology,
University of South Carolina. Tech. Rept. No. 16-CRD. 214pp.

Blumer, M., M. Ehrhardt, and J. H. Jones. 1973. The environmental
fate of stranded crude oil. Deep-Sea Research 20(3): 239-259.

Gundlach, E. R. and M. O. Hayes. 1977. The Urquiola oil spill, La
Coruna, Spain; case history and discussion of methods of control and
clean-up. Mar. Pollut. Bull. 8(6): 132-136.

Hann, R. W., Jr. 1975. Follow-up field survey of the oil pollution
from the tanker Metula. College Station, Texas: Civil Engineering
Department, Texas A&M University. Report to U.S. Coast Guard.

Keizer, P. D., T. P. Ahern, J. Dale, and J. H. Vandermeulen. 1978.
Residues of Bunker C in Chedabucto Bay, Nova Scotia, 6 years after
the Arrow spill. J. Fish. Res. Board Canada, vol. 35(5), pp. 528-535.

Owens, E. H. 1971. The restoration of beaches contaminated by oil in
Chedabucto Bay, Nova Scotia. Ottawa: Dept. of Energy, Mines and
Resources, Mar. Sci. Branch. Manuscr. Rept. Series No. 19. 78pp.

Research Planning Institute. 1978a. Investigations of beach
processes. In: The Amoco Cadiz Oil Spill, A Preliminary Scientific
Report (W. N. Hess, ed.). Boulder, Colorado: NOAA/EPA Special
Report. pp. 85-197.

Research Planning Institute. 1978b. The Amoco Cadiz spill, third
follow-up survey of oil impact on the shoreline, July, 1978. Boulder,
Colorado: NOAA Environmental Research Laboratories. 67pp.

Research Planning Institute. 1979. Coastal Processes Field Manual
for Oil Spill Assessment. Boulder, Colorado: NOAA Office of Marine
Pollution Assessment. 172pp.

for Dr. D.A. Bromley

6

Further Background Information on Oil Spill Cleanup

The effects of CLEANUP ACTIVITIES must also be considered in addition to the effects of the oil spill.

The following is a summary of the effects of different kinds of oil spill cleanup:

A work group on oil spill cleanup at a 1982 workshop³ divided cleanup methods into several generic types, among them: natural cleansing, mechanical removal, manual removal, sorbents, chemical dispersants, sinking agents, and burning. Four general categories of ecological impacts that may result from use of these cleanup methods were also identified:

1. Potential for substrate or habitat disruption.

Some cleanup methods disrupt the integrity or change the quality of a substrate, and, therefore, the associated organisms. Examples include the use of heavy equipment on certain beach types or high pressure flushing in marshes.

2. Potential for loss or disruption of community structure.

Some cleanup techniques remove organisms from the habitat that may have survived the initial oiling, e.g., removal of organisms from a rocky intertidal habitat through steam cleaning or high pressure flushing. ←

3. Potential for increased likelihood of oil uptake.

This occurs when the cleanup technique exposes organisms to additional oil; e.g., techniques which increase penetration of oil into sediments, or increase its availability to organisms. ←

4. Potential for increased oil re-entry to the environment.

This may occur with cleanup techniques which (a) reduce the viscosity of the oil (e.g., steam cleaning), (b) disturb an oiled substrate to remobilize oil, (e.g., flushing without proper recovery of free oil), or (c) incorporate oil into sediments where, as erosion occurs, oil will be reintroduced into the system. ←

from:

"Oil Spill Response and Ecological Impacts - 15 Years Beyond Santa Barbara"
Marine Technology Society Journal, 18 (3), 43 - 50. 1984

by Dr. June Lindstedt-Siva

7

More Background on effects of cleanup activities

Note the effects of steam cleaning on the environment

Steam Cleaning. Steam cleaning uses steam or high temperature water under pressure to remove oil from solid surfaces such as rocky shorelines, seawalls and jetties.¹⁴ This technique effectively removes even high viscosity oils, but it also removes any living organisms. Complete removal of organisms means that the successful process of establishing a rocky intertidal community must begin again, a process that may take 5-15 years.¹⁴ In addition, steam cleaning may increase penetration of oil into surrounding sediments.²⁰

High Pressure Flushing. This technique (also called hydroblasting) uses high pressure (greater than 100 psi) water streams to remove oil from the substrate. Flushed oil is then channeled to a recovery area.⁴ The method is applicable to jetties, sea walls, piers, pilings and rocky shores where it can effectively remove oil. However, high pressure flushing also removes organisms. It is particularly damaging to low energy, high productivity shorelines or other habitats where recovery is slow. Further impacts may result from increased oil penetration into sediments or from transport of equipment over the oiled and adjacent habitats. This method was used in a freshwater marsh with disastrous consequences.²⁰

THE WHITE HOUSE
WASHINGTON

Sept. 3, 1989.
John Sumner -

Herewith rough answers to
your questions re Exxon oil
spilled in Alaska -

- Summary answers are
- a) will be low toxicity for
several years
 - b) Spill will not be visible
after 2 to 3 years
 - c) Small quantities of detectable
oil could remain in sheltered
bays for 20 years or more.

Alan

1. Of the oil now left on the shoreline, how long will it remain?

The persistence of oil on the shoreline of Prince William Sound, the Gulf of Alaska, and Kodiak will be governed by a variety of considerations. Small quantities of detectable oil could remain in sheltered, low-energy bays for a period of twenty years or more (Research Planning Institute 1979). This was evidenced by the METULA spill in Tierra Del Fuego and the ARROW spill in Chedabucto Bay, Nova Scotia. (Owens 1971; Hann 1975; Blount 1978). Oil deposited on high-energy, finer-grain beaches will be removed very quickly -- within 12 months. While there is a wide range of shoreline types between these two extremes, the majority of the shoreline affected by the EXXON VALDEZ spill would be classified as moderate to high energy with a relatively short persistence of surface oil.

2. How long will the oil be toxic to biota?

The toxicity of Prudhoe Bay Crude (PBC) is attributable to two broad categories of petroleum hydrocarbons: low molecular-weight aromatic compounds such as benzene and the middle-to-high molecular weight aromatics such as the naphthalene series and phenanthrenes. The low-molecular weight compounds volatilized very quickly and did not remain more than a few days after the spill. In fact, none of these very toxic, very volatile compounds have been detected in samples of oil from the contaminated shoreline. (Jim Payne, SAIC, personal communication.)

However, studies by Andersen et.al. (1985) have shown medium-term toxicity for Alaskan species (both juvenile and adult life stages) associated with the medium-weight aromatics. This study is quite appropriate for application in the Exxon Valdez spill because the investigators tested PBC that had been fractionated to represent fresh, moderately weathered, and heavily weathered oil. The moderately weathered oil showed chronic toxicities that would be of concern. But the heavily weathered fraction had essentially no toxicity.

In late August, samples were collected from a shoreline in Prince William Sound that had been heavily oiled but not yet treated. The samples were from the surface and subsurface. The surface samples showed a high degree of microbial degradation of the naphthalene series, but only a small amount of the C3 naphthalenes remained.

3

Therefore, the surface oil has very low toxicity; the only toxicity remaining would be due to the phenathrenes but we expect to see continued degradation, probably within the next year. We already see significant losses of C1 phenathrenes in the surface samples. We see evidence of the relatively low toxicity of the surface oil in that there are large numbers of living organisms in the lower intertidal zones of beaches that have not been washed.

However, the subsurface samples showed that most of the C3 naphthalenes remained, and the phenanthrenes showed almost no weathering. The subsurface oil still has a moderate level of toxicity, and the rates of weathering and detoxification by biodegradation will be much slower. The oil that is not removed by winter storms will probably take several years to be rendered non-toxic. But, the subsurface oil is not readily available to aquatic organisms so there is not much of a pathway of exposure or uptake. The subsurface oil is not very mobile and will become increasingly less mobile over time. The naphthalenes are known to leach out from beach sediments for a period of up to one-half year. (Jim Payne, SAIC, personal communication). But the high molecular weight aromatics have essentially no water solubility and so they cannot enter the biosphere if they remain buried in the beach sediments.

3. How long will the oil be visible?

Except in isolated conditions (for example, oil stranded above the high tide line or oil which has been covered with sediment and then re-exposed), visible oil should not be detectable after two to three years, as evidenced by the AMOCO CADIZ and URQUIOLA spills (Gundlach and Hayes 1977; Research Planning Institute 1978a; Research Planning Institute 1978b). There could be leaching from subsurface oil next summer, with a few scattered tarballs (Blumer et al. 1973) remaining on the ocean surface.

4. Is there a way to clean the oil or make it non-toxic?

Continued efforts to enhance natural biological processes appears to be the only effective method to deal with the oiling situation that will remain next spring. Increasing oil viscosity is rendering hot, high pressure water flushing increasingly less effective in dealing with the current oiling situation. By spring, oil that remains deeply

4

buried in the sediments will be unreachable unless heavy equipment is employed to uncover the surface sediments. We believe the disruption of biological activity on the surface by this approach would outway any benefit derived by removing buried oil.

5. How well do natural forces help cleanup the shoreline?

The extent to which natural processes effectively clean oil from the shoreline depends a great deal on the degree of exposure of the shoreline to wave activity. The more exposed sections of coast will be quickly and completely cleaned; high wave action that thoroughly tumbles shoreline sediments is clearly the most effective cleaning mechanism.

Oil deeply buried in the interstitial spaces between sediment particles will not be affected by continuous wave tumbling, but tidal and groundwater flushing, coupled with microbial weathering, will still be effective on a longer time scale. Studies to date have indicated that natural microbial degradation is actively degrading the oil at rates much greater than expected in the cold water environment. However is not known how well microbial degradation will be effective in dealing with the waxy and asphaltic fractions of the oil.

6. What are the natural forces that help cleanup the shoreline?

Natural mechanical and biological weathering processes serve to disperse and detoxify the oil on the shoreline over time. The primary mechanical process is wave action and the associated summer/winter cycle of sediment transport to and from the shoreline. The eventual fate of the oil, however, is primarily controlled by the rate that biological weathering results in the breakdown and oxidation of the oil by specific bacteria.

BIBLIOGRAPHY

Anderson, J., 1985, Toxicity of PBC Oil On Alaskan Species; Proc. 1985 Oil Spill Conference, Am. Petrol. Inst., Washington, DC.

Blount, A. 1978. Two years after the Metula oil spill, Strait of Magellan, Chile - oil interaction with coastal environments. Columbia,

5

South Carolina: Coastal Research Division, Dept. of Geology,
University of South Carolina. Tech. Rept. No. 16-CRD. 214pp.

Blumer, M., M. Ehrhardt, and J. H. Jones. 1973. The environmental
fate of stranded crude oil. Deep-Sea Research 20(3): 239-259.

Gundlach, E. R. and M. O. Hayes. 1977. The Urquiola oil spill, La
Coruna, Spain; case history and discussion of methods of control and
clean-up. Mar. Pollut. Bull. 8(6): 132-136.

Hann, R. W., Jr. 1975. Follow-up field survey of the oil pollution
from the tanker Metula. College Station, Texas: Civil Engineering
Department, Texas A&M University. Report to U.S. Coast Guard.

Kelzer, P. D., T. P. Ahern, J. Dale, and J. H. Vandermeulen. 1978.
Residues of Bunker C in Chedabucto Bay, Nova Scotia, 6 years after
the Arrow spill. J. Fish. Res. Board Canada, vol. 35(5), pp. 528-535.

Owens, E. H. 1971. The restoration of beaches contaminated by oil in
Chedabucto Bay, Nova Scotia. Ottawa: Dept. of Energy, Mines and
Resources, Mar. Sci. Branch. Manusc. Rept. Series No. 19. 78pp.

Research Planning Institute. 1978a. Investigations of beach
processes. In: The Amoco Cadiz Oil Spill, A Preliminary Scientific
Report (W. N. Hess, ed.). Boulder, Colorado: NOAA/EPA Special
Report. pp. 85-197.

Research Planning Institute. 1978b. The Amoco Cadiz spill, third
follow-up survey of oil impact on the shoreline, July, 1978. Boulder,
Colorado: NOAA Environmental Research Laboratories. 67pp.

Research Planning Institute. 1979. Coastal Processes Field Manual
for Oil Spill Assessment. Boulder, Colorado: NOAA Office of Marine
Pollution Assessment. 172pp.

for Dr. D.A. Bromley

6

Further Background Information on Oil Spill Cleanup

The effects of CLEANUP ACTIVITIES must also be considered in addition to the effects of the oil spill.

The following is a summary of the effects of different kinds of oil spill cleanup:

A work group on oil spill cleanup at a 1982 workshop³ divided cleanup methods into several generic types, among them: natural cleansing, mechanical removal, manual removal, sorbents, chemical dispersants, sinking agents, and burning. Four general categories of ecological impacts that may result from use of these cleanup methods were also identified:

1. Potential for substrate or habitat disruption.

Some cleanup methods disrupt the integrity or change the quality of a substrate, and, therefore, the associated organisms. Examples include the use of heavy equipment on certain beach types or high pressure flushing in marshes.

2. Potential for loss or disruption of community structure.

Some cleanup techniques remove organisms from the habitat that may have survived the initial oiling, e.g., removal of organisms from a rocky intertidal habitat through steam cleaning or high pressure flushing. ←

3. Potential for increased likelihood of oil uptake.

This occurs when the cleanup technique exposes organisms to additional oil; e.g., techniques which increase penetration of oil into sediments, or increase its availability to organisms. ←

4. Potential for increased oil re-entry to the environment.

This may occur with cleanup techniques which (a) reduce the viscosity of the oil (e.g., steam cleaning), (b) disturb an oiled substrate to remobilize oil, (e.g., flushing without proper recovery of free oil), or (c) incorporate oil into sediments where, as erosion occurs, oil will be reintroduced into the system. ←

from:

"Oil Spill Response and Ecological Impacts - 15 Years Beyond Santa Barbara"
Marine Technology Society Journal, 18 (3), 43 - 50. 1984

by Dr. June Lindstedt-Siva

7

More Background on effects of cleanup activities

Note the effects of steam cleaning on the environment

Steam Cleaning. Steam cleaning uses steam or high temperature water under pressure to remove oil from solid surfaces such as rocky shorelines, seawalls and jetties.¹⁴ This technique effectively removes even high viscosity oils, but it also removes any living organisms. Complete removal of organisms means that the successful process of establishing a rocky intertidal community must begin again, a process that may take 5-15 years.¹⁴ In addition, steam cleaning may increase penetration of oil into surrounding sediments.²⁰

High Pressure Flushing. This technique (also called hydroblasting) uses high pressure (greater than 100 psi) water streams to remove oil from the substrate. Flushed oil is then channeled to a recovery area.⁴ The method is applicable to jetties, sea walls, piers, pilings and rocky shores where it can effectively remove oil. However, high pressure flushing also removes organisms. It is particularly damaging to low energy, high productivity shorelines or other habitats where recovery is slow. Further impacts may result from increased oil penetration into sediments or from transport of equipment over the oiled and adjacent habitats. This method was used in a freshwater marsh with disastrous consequences.²⁰

THE WHITE HOUSE

WASHINGTON

John Sumner

Sept 13. 1989.

Consider NASP an
important project for the U.S.
As the attached shows it is
perilously close to being
wiped out. Keep that there
is something we can do to
keep it alive at least along
The line recommended by
The Space Council.

-Alan

NASP FUNDINGBACKGROUND:

- Original Reagan Budget provided NASP funding at \$427M (\$300M AF, \$127M NASA)
- First Bush Revision called for \$227M (\$100M DoD to be transferred to NASA, \$127M NASA) and program transfer to NASA
- Bush Revised after National Space Council review called for \$254M (\$127M AF, \$127M NASA) and continued DoD participation

CURRENT STATUS:

<u>DoD</u>		<u>NASA</u>		<u>DoD</u>		<u>NASA</u>	
<u>HASC</u>	<u>HAC/D</u>	<u>HSSIC</u>	<u>HAC/V</u>	<u>SASC</u>	<u>SAC/D</u>	<u>SCOM</u>	<u>SAC/V</u>
285	285	127	98	100	(0)*	127	(0)*

* Preliminary staff mark positions prior to markup

TALKING POINTS:

- Program has had intense review. Everyone agrees it should be done and that \$254M in FY 90 is rock bottom (from \$320M in 89)
- National program with immense potential in terms of national competitiveness, pride and balance of trade
- Industry has nearly matched the government investment (\$808M) in NASP by providing approximately \$700M through FY 89
- The National Space Council's credibility is on the line. \$254M is needed to execute the rephased NASP program that the Council and the President approved
- The bottom line is \$254M - that's what is needed to execute the rephased program
- Program has made significant technical progress

IMPACT:

- Below \$254M the program is not NASP -- focus lost due to reduced level of effort, loss of experienced people and infrastructure
 - Only way to continue would be to stop work by five contractors and immediately down select to one engine and one airframe contractor (greater risk, lost competitiveness, etc)
 - All generic technology work (e.g. technology maturation) would be eliminated (again, greater risk, etc)
- Even at \$254M the program has already been rephased by an additional 2 1/2 years

NASP FY 89 ACCOMPLISHMENTS

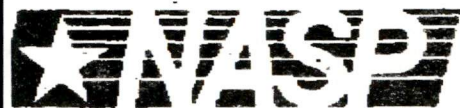
- Continued fabrication of major structural demonstration components including cryogenic tankage, wing/fuselage attachment structure and a large fuselage section
- Continued to develop and refine the three X-30 airframe contractor designs and their integration with engine designs
- Conducted major review of contractor scramjet engine designs and awarded two propulsion Phase IIC contracts
- Performed aerodynamic wind tunnel tests on the airframe and engine contractor designs
- Continued to make upgrades to computational fluid dynamics codes and to validate them with wind tunnel data
- Began scale-up of durable high-temperature materials
- Conducted successful testing of designs for leading edge, nose cap and actively cooled structures
- Completed upgrade of engine test facilities and continued to check them out
- Continued high-speed ramjet/scramjet testing (component and subscale engines)

11 Sep 89

SEP-12-89 TUE 09:15 ID:

TEL NO:

#832 P03



REVISED PROGRAM BUDGET

AREA	FY89	FY90	FY91	FY92	FY93 THRU 1/93
AIRFRAME	45	35	40	40	10
ENGINE	110	80	90	100	20
MATERIALS	70	60	60	60	20
TESTING	20	20	25	35	25
TECH MAT	55	30	47	55	20
FOCUSED TECHNOLOGY	5	14			
SUPPORT	15	15	15	15	5
TOTAL	320	254	277	305	100

Withdrawal/Redaction Sheet

(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
02. Memo	From D. Allan Bromley to John Sununu Re: Oceans and International Environmental and Scientific Affairs Nominee (1 pp.)	9/6/89	(b)(6)	

Collection:

Record Group: Bush Presidential Records
Office: Chief of Staff to the President, Office of the
Series: Sununu, John, Files
Subseries: White House Offices File
WHORM Cat.:
File Location: Science and Technology (1989) [3]: Bromley

Date Closed:	12/1/2004	OA/ID Number:	29183-005
FOIA/SYS Case #:	1998-0004-F[1]	Appeal Case #:	
Re-review Case #:	2005-0426-S	Appeal Disposition:	
P-2/P-5 Review Case #:		Disposition Date:	
AR Case #:		MR Case #:	
AR Disposition:		MR Disposition:	
AR Disposition Date:		MR Disposition Date:	

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

P-1 National Security Classified Information [(a)(1) of the PRA]
 P-2 Relating to the appointment to Federal office [(a)(2) of the PRA]
 P-3 Release would violate a Federal statute [(a)(3) of the PRA]
 P-4 Release would disclose trade secrets or confidential commercial or
 financial information [(a)(4) of the PRA]
 P-5 Release would disclose confidential advice between the President
 and his advisors, or between such advisors [(a)(5) of the PRA]
 P-6 Release would constitute a clearly unwarranted invasion of
 personal privacy [(a)(6) of the PRA]

C. Closed in accordance with restrictions contained in donor's deed of gift.

PRM. Removed as a personal record misfile.

Freedom of Information Act - [5 U.S.C. 552(b)]

(b)(1) National security classified information [(b)(1) of the FOIA]
 (b)(2) Release would disclose internal personnel rules and practices of an
 agency [(b)(2) of the FOIA]
 (b)(3) Release would violate a Federal statute [(b)(3) of the FOIA]
 (b)(4) Release would disclose trade secrets or confidential or financial
 information [(b)(4) of the FOIA]
 (b)(6) Release would constitute a clearly unwarranted invasion of
 personal privacy [(b)(6) of the FOIA]
 (b)(7) Release would disclose information compiled for law enforcement
 purposes [(b)(7) of the FOIA]
 (b)(8) Release would disclose information concerning the regulation of
 financial institutions [(b)(8) of the FOIA]
 (b)(9) Release would disclose geological or geophysical information

THE WHITE HOUSE

WASHINGTON

July 31, 1989

MEMORANDUM FOR JOHN H. SUNUNU

FROM: D. ALLAN BROMLEY *Am*

SUBJECT: Sea Level Raising

Herewith some input assumptions:

1. Earth's radius: 6378 km.
2. Earth's area: $5.10 \times 10^6 (\text{km})^2$
3. Antarctic Ice Volume: $(30 \pm 2.5) \times 10^6 (\text{km})^3$
4. Arctic Ice Volume: $(3 \pm 0.25) \times 10^6 (\text{km})^3$
5. Roughly 15% of the Antarctic and 7.5% of the Arctic ice is below current sea level.
6. We neglect totally isostatic rebound phenomena -- i.e., rebound of crust relieved of ice load and sinking of ocean floor under additional water load -- since it is difficult to get any reliable figures.

On these assumptions, total melting of both polar caps would result in a mean sea level rise of 60.5 meters with a rough uncertainty figure of ± 15 meters, i.e., 199 ± 49 , say 200 ± 50 feet.

The 20 foot figure comes from assuming that only one tenth of the polar ice melts.

Antarctica has an area of 5,100,000 square miles = $14.2 \times 10^6 (\text{km})^2$, so that the mean ice depth in Antarctica is 2.1 km.

If we take the Ross Ice Shelf, assume this same mean thickness for lack of more detailed information, we find that the volume in the shelf ice is some $3.3 \times 10^6 (\text{km})^3$, so that if it were to break off and melt we would get the approximately 20 foot rise that everyone talks about.

I was surprised to find that the Antarctic ice volume is ten times that in the Arctic. I had also forgotten that Antarctica at 5.1×10^6 square miles has more than half the area of North America (9.4×10^6 sq. mi.) and significantly larger area than Europe (3.8×10^6 sq. mi.)

THE WHITE HOUSE
WASHINGTON

August 28, 1989

MEMORANDUM FOR THE PRESIDENT

FROM: D. ALLAN BROMLEY

SUBJECT: THE KYOTO PRIZE



Beginning in 1983, President Reagan established the tradition of sending a brief note of congratulations to the winners of the Kyoto prize. Three such prizes (in the amount of \$350,000.00 each) are awarded annually to promote international scientific and literary cooperation and specifically to recognize outstanding performance by individuals.

In 1989 the three prizes will be awarded to Dr. Amos Joel, Jr. (AT&T Bell Laboratories) for his pioneering work on electronic switching in telecommunication networks; to Dr. John Cage (Harvard University and the New School) for his outstanding contributions to modern American music; and to Dr. Izrail M. Gelfand (Moscow University) for his fundamental work on functional analysis and generalized functions in modern mathematics.

I have attached a draft of a letter that you might wish to send.

Attachment

DRAFT LETTER FROM PRESIDENT BUSH TO WINNERS OF THE 1989
KYOTO PRIZE. WOULD BE READ BY APPROPRIATE PERSON FROM U.S.
EMBASSY, TOKYO AT THE AWARD CEREMONY IN KYOTO ON
NOVEMBER 10, 1989.

I am delighted to extend my warmest congratulations to the
1989 Kyoto Prize laureates -- Dr. Amos Joel, Jr. for his
pioneering contributions to telecommunications, Dr. Izrail
M. Gelfand for fundamental work in modern mathematics and
Dr. John Cage for his role in shaping much of modern
American music.

I would also congratulate the Imanori Foundation for its
establishment of the Kyoto Prize to recognize outstanding
creativity and ingenuity throughout the world.

The Kyoto Prize is particularly noteworthy because it
encompasses all of basic science, applied science, and the
expressive arts which, together, make such vital
contributions to the quality of all our lives. And, as a
truly international award it strengthens the essential bonds
of friendship and cooperation that link all the peoples of
the earth through their participation in, and contributions
to the pursuit of new knowledge and its application in
creative and innovative ways.

Today's winners of the Kyoto Prize add luster to an already
distinguished list of previous winners. I join their
communities, worldwide, in wishing them every success and
satisfaction in their continuing careers.

THE WHITE HOUSE
WASHINGTON

August 28, 1989

MEMORANDUM FOR THE PRESIDENT

FROM: D. ALLAN BROMLEY

SUBJECT: THE KYOTO PRIZE



Beginning in 1983, President Reagan established the tradition of sending a brief note of congratulations to the winners of the Kyoto prize. Three such prizes (in the amount of \$350,000.00 each) are awarded annually to promote international scientific and literary cooperation and specifically to recognize outstanding performance by individuals.

In 1989 the three prizes will be awarded to Dr. Amos Joel, Jr. (AT&T Bell Laboratories) for his pioneering work on electronic switching in telecommunication networks; to Dr. John Cage (Harvard University and the New School) for his outstanding contributions to modern American music; and to Dr. Izrail M. Gelfand (Moscow University) for his fundamental work on functional analysis and generalized functions in modern mathematics.

I have attached a draft of a letter that you might wish to send.

Attachment

DRAFT LETTER FROM PRESIDENT BUSH TO WINNERS OF THE 1989
KYOTO PRIZE. WOULD BE READ BY APPROPRIATE PERSON FROM U.S.
EMBASSY, TOKYO AT THE AWARD CEREMONY IN KYOTO ON
NOVEMBER 10, 1989.

I am delighted to extend my warmest congratulations to the
1989 Kyoto Prize laureates -- Dr. Amos Joel, Jr. for his
pioneering contributions to telecommunications, Dr. Izrail
M. Gelfand for fundamental work in modern mathematics and
Dr. John Cage for his role in shaping much of modern
American music.

I would also congratulate the Imanori Foundation for its
establishment of the Kyoto Prize to recognize outstanding
creativity and ingenuity throughout the world.

The Kyoto Prize is particularly noteworthy because it
encompasses all of basic science, applied science, and the
expressive arts which, together, make such vital
contributions to the quality of all our lives. And, as a
truly international award it strengthens the essential bonds
of friendship and cooperation that link all the peoples of
the earth through their participation in, and contributions
to the pursuit of new knowledge and its application in
creative and innovative ways.

Today's winners of the Kyoto Prize add luster to an already
distinguished list of previous winners. I join their
communities, worldwide, in wishing them every success and
satisfaction in their continuing careers.

WHITE HOUSE STAFFING MEMORANDUM

DATE: 08/30/89

ACTION/CONCURRENCE/COMMENT DUE BY:

C.O.B. Tuesday 9/5

SUBJECT: PROPOSED EXECUTIVE ORDER ENTITLED "PRESIDENT'S COUNCIL OF
ADVISORS ON SCIENCE AND TECHNOLOGY"

	ACTION FYI			ACTION FYI	
VICE PRESIDENT	☐	☒	MCCLURE	☒	☐
SUNUNU	☐	☒	NEWMAN	☐	☐
SCOWCROFT	☐	☐	PORTER	☒	☐
DARMAN	☐	☐	STUDDERT	☐	☐
BATES	☒	☐	UNTERMAYER	☒	☐
BREEDEN	☐	☐	OSTP	☐	☒
CARD	☐	☒	CLERK	☐	☒
CICCONI	☐	☒		☐	☐
DEMAREST	☒	☐		☐	☐
FITZWATER	☐	☒		☐	☐
GRAY	☒	☐		☐	☐
HAGIN	☐	☐		☐	☐

REMARKS:

Please provide any comments/recommendations directly to my
 office by C.O.B. on Tuesday, 09/05. Thanks.

RESPONSE:

James W. Cicconi
 Assistant to the President
 and Deputy to the Chief of Staff
 Ext. 2702



EXECUTIVE OFFICE OF THE PRESIDENT

OFFICE OF MANAGEMENT AND BUDGET

WASHINGTON, D.C. 20503

THE DIRECTOR

August 21, 1989

MEMORANDUM FOR THE PRESIDENT

FROM: Richard G. Darman
Director

SUBJECT: Proposed Executive Order Entitled
"President's Council of Advisors on
Science and Technology"

SUMMARY: This memorandum forwards for your consideration a proposed Executive order, prepared by the Office of Science and Technology Policy, that would establish a council to advise you on matters involving all areas of science and technology.

BACKGROUND: On February 9, 1989, you announced your intention to create, as soon as feasible, an advisory council of distinguished individuals to advise you on issues and topics involving science and technology. The proposed Executive order would implement your decision by establishing the "President's Council of Advisors on Science and Technology" ("Council").

The Council would be composed of not more than 15 members, 14 of whom would be distinguished individuals appointed by you from the private sector. The Director of the Office of Science and Technology Policy would serve as Chairman of the Council, and the Vice-Chairman would be appointed by you from among the 14 private sector members.

The Council would advise you on matters involving all areas of science and technology. It would conduct a continuing review and assessment of developments in science and technology and would invite panels of experts to investigate and report to the Council on specific issues of national consequence.

None of the affected agencies objects to the proposed Executive order.

RECOMMENDATION: I recommend that you sign the attached Executive order.

Attachment



U.S. Department of Justice

Office of Legal Counsel

Office of the
Assistant Attorney General

Washington, D.C. 20530

August 30, 1989

MEMORANDUM

Re: Proposed Executive Order entitled
"President's Council of Advisors
on Science and Technology

The attached proposed Executive Order has been submitted by the Office of Science and Technology Policy in the Executive Office of the President. The Office of Management and Budget, with the approval of the Director, has forwarded it to this Department for review of its form and legality.

The proposed Order will establish a council to advise the President on matters involving all areas of science and technology. The council, which would be composed of the Director of the Office of Science and Technology and no more than fourteen individuals from the private sector, would conduct a continuing review and assessment of developments in science and technology and would invite panels of experts to report to the council on specific issues of national consequence.

The proposed Order is acceptable with respect to its form and legality.

William P. Barr
Assistant Attorney General
Office of Legal Counsel



U.S. Department of Justice

Office of Legal Counsel

Office of the
Assistant Attorney General

Washington, D.C. 20530

August 30, 1989

The President,

The White House.

My dear Mr. President:

I am herewith transmitting a proposed Executive Order entitled "President's Council of Advisors on Science and Technology." This proposed Executive Order has been submitted by the Office of Science and Technology Policy in the Executive Office of the President. The Office of Management and Budget, with the approval of the Director, has forwarded it to this Department for review of its form and legality.

The proposed Executive Order is approved with respect to form and legality.

Respectfully,

A handwritten signature in cursive script, reading "WP Barr", is positioned above the typed name.

William P. Barr
Assistant Attorney General
Office of Legal Counsel



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

August 21, 1989

Honorable Dick Thornburgh
United States Attorney General
Washington, D.C. 20503

Dear Mr. Attorney General:

Enclosed, in accordance with the provisions of Executive Order No. 11030, as amended, is a proposed Executive order entitled "President's Council of Advisors on Science and Technology." The proposed Executive order, which was prepared by the Office of Science and Technology Policy in the Executive Office of the President, would establish a council to advise the President on matters involving all areas of science and technology.

On February 9, 1989, the President announced his intention to create, as soon as feasible, an advisory committee of distinguished individuals that would advise him on issues and topics involving science and technology. The proposed Executive order would implement his decision by establishing the "President's Council of Advisors on Science and Technology" ("Council").

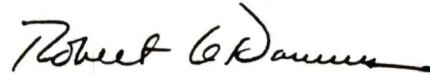
The Council would be composed of not more than 15 members, 14 of whom would be distinguished individuals appointed by the President from the private sector. The Director of the Office of Science and Technology Policy would serve as Chairman of the Council, and the Vice-Chairman would be appointed by the President from among the 14 private sector members.

The Council would advise the President on matters involving all areas of science and technology. It would conduct a continuing review and assessment of developments in science and technology and would invite panels of experts to investigate and report to the Council on specific issues of national consequence.

Your staff may direct any questions concerning this proposed Executive order to Mr. Mac Reed of this office (395-5600).

This proposed Executive order has the approval of the Director of the Office of Management and Budget.

Sincerely,

A handwritten signature in dark ink, appearing to read "Robert G. Damus", with a horizontal line extending from the end of the name.

Robert G. Damus
Acting General Counsel

Enclosures

EXECUTIVE ORDER

- - - - -

PRESIDENT'S COUNCIL OF ADVISORS ON SCIENCE AND TECHNOLOGY

By the authority vested in me as President by the Constitution and laws of the United States of America, and in order to establish, in accordance with the provisions of the Federal Advisory Committee Act, as amended (5 U.S.C. App. 2), an advisory committee on science and technology, it is hereby ordered as follows:

Section 1. Establishment. There is established the President's Council of Advisors on Science and Technology ("Council"). The Council shall be composed of not more than 15 members, 14 of whom shall be distinguished individuals from the private sector to be appointed by the President. The Director of the Office of Science and Technology Policy shall serve as Chairman of the Council. The Vice-Chairman shall be appointed by the President from among the 14 private sector members. The Chairman shall report directly to the President.

Sec. 2. Functions. (a) The Council shall advise the President on matters involving all areas of science and technology.

(b) In the performance of its advisory duties the Council shall conduct a continuing review and assessment of developments in science and technology, and shall, through the Chairman, report thereon to the President whenever requested.

(c) The Chairman may, from time to time, invite panels of experts to investigate and report to the Council on specific issues of national consequence.

Sec. 3. Administration. The heads of Executive agencies shall, to the extent permitted by law, provide the

Council and its panels such information with respect to scientific and technological matters as required for the purpose of carrying out its functions.

(b) Members of the Council shall serve without any compensation for their work on the Council. However, members appointed from among private citizens of the United States may be allowed travel expenses, including per diem in lieu of subsistence, as authorized by law for persons serving intermittently in the government service (5 U.S.C. 5701-5707).

(c) Any expenses of the Council shall be paid from the funds available for the expenses of the Office of Science and Technology Policy.

(d) The Office of Administration shall, on a reimbursable basis, provide such administrative services as may be required.

Sec. 4. General. Notwithstanding any other Executive order, the functions of the President under the Federal Advisory Committee Act, as amended, except that of reporting to the Congress, which are applicable to the Council, shall be performed by the Office of Administration in accord with the guidelines and procedures established by the Administrator of General Services.

(b) The Committee shall terminate on June 30, 1991, unless sooner extended.

THE WHITE HOUSE,

THE WHITE HOUSE
WASHINGTON

August 24, 1989

MEMORANDUM FOR JOHN H. SUNUNU

FROM: D. ALLAN BROMLEY



SUBJECT: MEMORANDA FOR PRESIDENT BUSH

Enclosed herewith are three memoranda that I would appreciate your bringing to the President's attention.

Two of them relate to Head of State meetings and when you get back I would like to discuss with you some appropriate tasking of NSC and OSTP to provide the necessary science and technology briefings for the President prior to such meetings in the future.

I hope the weather in Maine has been as glorious as it was in northern Canada!

Enclosures

THE WHITE HOUSE
WASHINGTON

August 24, 1989

MEMORANDUM FOR THE PRESIDENT

FROM: D. ALLAN BROMLEY 
SUBJECT: YOUR FORTHCOMING MEETING WITH
PRIME MINISTER BRIAN MULROONEY OF CANADA

I am told that Prime Minister Mulrooney has been briefed in depth about Canada's proposed major new accelerator complex in Vancouver and may well wish to discuss with you a hoped for U.S. contribution to its construction.

The Canadians propose to ask the United States to provide \$15 million per year over the next 5 years for a total of \$75 million; this represents roughly one-sixth of the total facility cost. Once constructed, the Canadian government is prepared to commit to providing the entire operating support while U.S. scientists will utilize 30 to 35 percent of the available research time.

This will be a unique facility in the international particle physics community. It has been reviewed in detail by high level committees reporting to NSF and DOE with the recommendation that the project represents a very cost-effective approach to giving the U.S. scientific community access to research fields characterized by the very high particle beam intensities that it will make available.

The prospect has the acronym KAON (K mesons, antiprotons and nucleons) and is projected as a truly international facility. It is anticipated that Japan, Germany and Italy will contribute \$50, 30 and 30 million, respectively, to the construction costs -- with additional contributions anticipated from Britain, France and others.

This Canadian initiative will make unnecessary the construction of an equivalent U.S. facility that had been under consideration for some time at the Los Alamos National Laboratory.

It has high visibility -- both scientifically and politically -- in Canada and I consider that U.S. participation at the level indicated would represent an excellent U.S. investment. DOE, will, I believe include it in the FY 1991 budget submission.

Again, I would welcome the opportunity to provide any more detailed information concerning this activity that you might find useful.

THE WHITE HOUSE
WASHINGTON

August 24, 1989

MEMORANDUM FOR THE PRESIDENT

FROM: D. ALLAN BROMLEY 
SUBJECT: YOUR FORTHCOMING MEETING WITH
PRIME MINISTER BRIAN MULROONEY OF CANADA

I am told that Prime Minister Mulrooney has been briefed in depth about Canada's proposed major new accelerator complex in Vancouver and may well wish to discuss with you a hoped for U.S. contribution to its construction.

The Canadians propose to ask the United States to provide \$15 million per year over the next 5 years for a total of \$75 million; this represents roughly one-sixth of the total facility cost. Once constructed, the Canadian government is prepared to commit to providing the entire operating support while U.S. scientists will utilize 30 to 35 percent of the available research time.

This will be a unique facility in the international particle physics community. It has been reviewed in detail by high level committees reporting to NSF and DOE with the recommendation that the project represents a very cost-effective approach to giving the U.S. scientific community access to research fields characterized by the very high particle beam intensities that it will make available.

The prospect has the acronym KAON (K mesons, antiprotons and nucleons) and is projected as a truly international facility. It is anticipated that Japan, Germany and Italy will contribute \$50, 30 and 30 million, respectively, to the construction costs -- with additional contributions anticipated from Britain, France and others.

This Canadian initiative will make unnecessary the construction of an equivalent U.S. facility that had been under consideration for some time at the Los Alamos National Laboratory.

It has high visibility -- both scientifically and politically -- in Canada and I consider that U.S. participation at the level indicated would represent an excellent U.S. investment. DOE, will, I believe include it in the FY 1991 budget submission.

Again, I would welcome the opportunity to provide any more detailed information concerning this activity that you might find useful.

THE WHITE HOUSE
WASHINGTON

August 24, 1989

MEMORANDUM FOR THE PRESIDENT

FROM: D. ALLAN BROMLEY



SUBJECT: VISIT OF JAPANESE PRIME MINISTER

Among the items that Prime Minister Toshiki Kaifu will wish to discuss with you during his forthcoming visit to Washington is the question of Japanese contribution to the cost of the Superconducting-Supercollider. He has been extensively briefed by a relative who happens to be a physicist and by the director of Japan's major accelerator facility (KEK).

The amounts that have been mentioned in earlier discussions range from \$500 million to \$1 billion and my informal channels tell me that the Japanese are prepared to go for the upper end of this range -- but with conditions that may be difficult to sell to the Congress, although potentially of value to the successful completion of the project.

I would welcome an opportunity to brief you on this question at whatever level of detail you might find interesting and/or useful.

cc: Governor Sununu

THE WHITE HOUSE
WASHINGTON

August 24, 1989

MEMORANDUM FOR THE PRESIDENT

FROM: D. ALLAN BROMLEY 
SUBJECT: VISIT OF JAPANESE PRIME MINISTER

Among the items that Prime Minister Toshiki Kaifu will wish to discuss with you during his forthcoming visit to Washington is the question of Japanese contribution to the cost of the Superconducting-Supercollider. He has been extensively briefed by a relative who happens to be a physicist and by the director of Japan's major accelerator facility (KEK).

The amounts that have been mentioned in earlier discussions range from \$500 million to \$1 billion and my informal channels tell me that the Japanese are prepared to go for the upper end of this range -- but with conditions that may be difficult to sell to the Congress, although potentially of value to the successful completion of the project.

I would welcome an opportunity to brief you on this question at whatever level of detail you might find interesting and/or useful.

cc: Governor Sununu

Withdrawal/Redaction Sheet

(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
05. Memo	From D. Allan Bromley to POTUS Re: National Science Board Memberships [2 copies] (2 pp.)	8/24/89	(b)(6)	

Collection:

Record Group: Bush Presidential Records
Office: Chief of Staff to the President, Office of the
Series: Sununu, John, Files
Subseries: White House Offices File
WHORM Cat.:
File Location: Science and Technology (1989) [3]: Bromley

Date Closed:	12/1/2004	OA/ID Number:	29183-005
FOIA/SYS Case #:	1998-0004-F[1]	Appeal Case #:	
Re-review Case #:	2005-0426-S	Appeal Disposition:	
P-2/P-5 Review Case #:		Disposition Date:	
AR Case #:		MR Case #:	
AR Disposition:		MR Disposition:	
AR Disposition Date:		MR Disposition Date:	

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

P-1 National Security Classified Information [(a)(1) of the PRA]
P-2 Relating to the appointment to Federal office [(a)(2) of the PRA]
P-3 Release would violate a Federal statute [(a)(3) of the PRA]
P-4 Release would disclose trade secrets or confidential commercial or financial information [(a)(4) of the PRA]
P-5 Release would disclose confidential advice between the President and his advisors, or between such advisors [(a)(5) of the PRA]
P-6 Release would constitute a clearly unwarranted invasion of personal privacy [(a)(6) of the PRA]

C. Closed in accordance with restrictions contained in donor's deed of gift.

PRM. Removed as a personal record misfile.

Freedom of Information Act - [5 U.S.C. 552(b)]

(b)(1) National security classified information [(b)(1) of the FOIA]
(b)(2) Release would disclose internal personnel rules and practices of an agency [(b)(2) of the FOIA]
(b)(3) Release would violate a Federal statute [(b)(3) of the FOIA]
(b)(4) Release would disclose trade secrets or confidential or financial information [(b)(4) of the FOIA]
(b)(6) Release would constitute a clearly unwarranted invasion of personal privacy [(b)(6) of the FOIA]
(b)(7) Release would disclose information compiled for law enforcement purposes [(b)(7) of the FOIA]
(b)(8) Release would disclose information concerning the regulation of financial institutions [(b)(8) of the FOIA]
(b)(9) Release would disclose geological or geophysical information

THE WHITE HOUSE
WASHINGTON

August 24, 1989

MEMORANDUM FOR JOHN H. SUNUNU

FROM: D. ALLAN BROMLEY



SUBJECT: MEMORANDA FOR PRESIDENT BUSH

Enclosed herewith are three memoranda that I would appreciate your bringing to the President's attention.

Two of them relate to Head of State meetings and when you get back I would like to discuss with you some appropriate tasking of NSC and OSTP to provide the necessary science and technology briefings for the President prior to such meetings in the future.

I hope the weather in Maine has been as glorious as it was in northern Canada!

Enclosures

THE WHITE HOUSE
WASHINGTON
August 28, 1989

MEMORANDUM FOR THE PRESIDENT

FROM: D. ALLAN BROMLEY *daB*
SUBJECT: ANNUAL SCIENCE COUNSELOR'S CONFERENCE

Each year the Department of State sponsors a conference in Washington on current science, technology and environment (STE) issues for the benefit of its 24 embassy-based STE officers worldwide. The conference is an opportunity for the officers to hear presentations from senior U.S. officials, to raise questions, and to offer views on these issues from the overseas perspective.

This year's conference is scheduled for September 25-27, 1989. I will be presenting some of your Administration's views on science and technology policy at a luncheon on the 26th. Other invited speakers include DOE Secretary James Watkins, NASA Administrator Richard Truly, EPA Administrator William Reilly, NSF Director Erich Bloch, Nobel Laureate James Watson, and presidents of the National Academies of Science and Engineering.

The conference has been endorsed by the Committee on Science, Space and Technology, which in 1988 submitted a Congressional Resolution commending these officers for their outstanding performance. The officers will meet with the committee during this year's conference.

I believe that this conference offers an excellent opportunity for you to make a few remarks about the value of international scientific and technological cooperation and in particular U.S. commitment to management of the global environment. I hope that you will consider speaking to these counselors if your schedule permits; they can play key roles in transmitting your thoughts and plans in the foreign capitals where they serve.

cc: Governor Sununu

THE WHITE HOUSE
WASHINGTON

August 31, 1989

INFORMATION

MEMORANDUM FOR THE PRESIDENT

FROM: D. Allan Bromley 

SUBJECT: Background Information on the Superconducting Super Collider (SSC)

I. SUMMARY

The SSC is a large, expensive, accelerator construction project requiring over \$1 billion in funds from other nations for completion. It is the single largest research instrument ever proposed. A complete background on what the SSC is, how it fits within the spectrum of currently designed or in-use high energy physics particle accelerators, and a sketch of present plans for international cost-sharing is presented.

II. DISCUSSION

Attached is a fairly long paper on high energy physics and the SSC construction project; the key aspects are covered in a one page summary. The major reason for providing you with this information at this time is that, as noted in my recent memorandum, OSTP staff have been informed of the possibility that the Japanese Prime Minister will bring up with you the issue of his country's financial participation in the SSC. Several recent developments make this likely:

- o Both Houses of Congress have finally declared support for SSC construction.
- o The SSC Laboratory in Texas has been established and has begun the real design and development work of the project.
- o The leadership in the Japanese Government has changed to one interested in excellent relations with the United States.
- o Several other countries -- including Canada and the European nations supporting The European Center for Nuclear Research (CERN) in Switzerland -- are asking the Japanese for substantial contributions to their own high energy physics accelerator facilities.

International support for the SSC has been, from the outset, an integral part of this Administration's proposal to build this high energy physics facility. Visible Presidential support for this concept of international cooperation is essential in such high level meetings as the upcoming one with the Japanese Prime Minister if the necessary cooperation and participation are to be obtained. The Prime Minister needs to be aware of how important you believe such an agreement would be to both nations: that this cooperation will benefit both nations not only through people-to-people exchanges and consequent mutual cultural understanding but also through the mutual expansion of mankind's scientific knowledge and horizons.

The SSC promises to take its researchers back to the conditions existing only tiny fractions of a second after the initial "Bang of Creation", it promises to resolve one of the greatest mysteries left in the study of our universe -- why and how does matter acquire mass? -- and it promises to take us ever closer to, if not indeed to the realization of Einstein's dream of a complete understanding of the structure of all matter and of the forces through which it acts. This is truly a great adventure and one of the triumphs of the human intellect.

I would welcome the opportunity to provide you with any further information regarding SSC and its planned utilization that you might find of interest.

The Superconducting Super Collider: A High Energy Physics Facility

Summary

The Superconducting Super Collider (SSC) will be the largest basic research facility ever built. It will collide two beams of hydrogen nuclei (protons) together by accelerating them through nearly 10,000 superconducting magnets in a tunnel 53 miles in circumference. It will take eleven years to build and cost almost \$6 billion.

Your Administration is committed to the construction of the SSC. The commitment was made with the understanding that funding the SSC would not be at the expense of other ongoing science programs and that one-third of the total project funding should be provided by non-Federal sources such as the host state and foreign countries that will share in the scientific and technological benefits accruing from the SSC. Cost-sharing in a project of this size is entirely appropriate since other nations as well as the U.S. will have access to, and benefit from, the facility.

The SSC will be a facility operating within the well developed traditions of international scientific collaboration in high energy physics experiments. The SSC will be operated by DOE for the benefit of all qualified scientific users, foreign and domestic. As currently envisaged, the SSC will be a truly international facility, with mutual and equitable contributions and benefits shared by the participating nations. Depending upon the nature and extent of their financial commitments, the participating nations will be allocated an appropriate share either in the development or management structure of the SSC.

The SSC should provide many incentives for participation by foreign countries. In addition to the prestige associated with involvement in the world's largest frontier science facility, collaboration on the SSC will provide unique educational opportunities for young scientists and valuable engineering experience on challenging, state-of-the-art systems.

The major potential contributing foreign countries include Japan, Canada, Italy, France, the Federal Republic of Germany, South Korea, India, and Switzerland. These same countries are also expected to contribute detectors for specialized experiments and, perhaps, operating funds once the SSC facility has been completed and is in operation.

BACKGROUND

Experimental research in high energy physics involves accelerating beams of elementary particles - protons and electrons - essentially to the speed of light, aiming the beams at various targets, and then studying the new forms of matter resulting from the collisions. That these new forms of matter result can be seen by applying Einstein's equation $E=mc^2$. This relationship implies that the energy of a particle (E) and its mass (m) are alternate characteristics. The "trick" in high energy physics is to deliver ever more energy into ever smaller volumes so that some at least of this energy materializes in the form of new, previously unknown particles or states of matter. Thus, in this field there is a continual push to accelerate the beams of protons or electrons to ever higher energies -- to probe ever deeper into matter.

To perform such studies, the structure of physicists continuously push the state of the art of technology. They have developed advanced detectors, high speed electronics, new concepts in particle accelerators and new approaches in which beams of protons (or electrons) are aimed at each other and collide with twice the energy of either beam.

Federal funding programs supporting such research continually face the problem of bringing large accelerators and expensive state-of-the-art detector systems on-line to enable this field to continue to make progress. Currently our high energy physics programs support three major U.S. facilities used to accelerate elementary particles:

- o Stanford Linear Accelerator Center in California (SLAC) managed by Stanford University,
- o Fermi National Laboratory (Fermilab) Batavia, Illinois, managed by the University Research Associates (URA), and
- o Alternating Gradient Synchrotron (AGS) at Brookhaven on Long Island managed by Associated Universities Incorporated (AUI).

These facilities are available to all qualified experimenters from national laboratories and universities and to similarly qualified foreign scientists. In this country alone, these basic research programs provide support and operating expenses for 148 experimental groups from 72 universities and laboratories to use these facilities. (The total American community is about 2,000 to 2,500 professional physicists.)

Fermilab, just outside of Chicago, is currently the most powerful high energy physics accelerator in the world. It holds the world's record for accelerator energies at one trillion electron volts (TeV). Its projected lifetime is ten years or longer, depending on the wealth of physics it will uncover from proton-proton collisions.

SLAC, an electron accelerating facility, is also competitive with the other most powerful electron accelerator in Europe, the Large Electron Positron (LEP) Ring at CERN in Geneva, Switzerland. The AGS at Brookhaven, a currently operating joint high energy and nuclear physics facility, will be the "front-end" for a unique future new accelerator, called RHIC (Relativistic Heavy Ion Collider), designed to investigate collisions of large atomic nuclei. Operating together, the AGS and RHIC will give the U.S. a nuclear physics capability unmatched in today's world.

The Superconducting Super Collider

The Superconducting Super Collider (SSC) is the name given to the "next generation" high energy physics accelerator facility. The main accelerator will have a beam energy of 20 TeV. This is 20 times more than the world's currently most-energetic accelerator located at Fermilab. The Collider itself will consist of two rings of superconducting magnets (nearly 10,000 in all) and associated electrical systems in a common tunnel. The magnets will channel a beam of protons around the tunnel. The tunnel is 53 miles in circumference. The project also includes the associated office and laboratory facilities (buildings, structures, and utilities) required to support the technical systems.

The total project cost is currently estimated to be \$5.9 billion over 11 years with the facility becoming available to researchers in FY 1998. This estimate is based on a conceptual design report that does not take into account, for example, site-specific features nor the actual difficulty of mass producing superconducting magnets and thus the cost estimate is acknowledged to be very approximate.

The Reagan Administration committed to the project in January 1987. The commitment was made with the understanding that funding for the SSC would not be at the expense of other ongoing science programs and that one-third of the total project funding should be provided by non-Federal sources such as the host State and foreign countries that will share in the scientific and technological benefits accruing from the SSC. (See attached.) Cost-sharing in a project of this size is entirely appropriate since other nations as well as the U.S. will have access to and benefit from the facility.

In January of this year, the site for the project was chosen to be Waxahachie, Texas, thirty miles from Dallas.

It can be argued that the spin-offs from SSC-related research should be of considerable value to American industry. For example, U.S. industry does not currently have the capability to produce superconducting magnets in large quantities. These magnets can be useful to the "computer chip" industry and the nuclear medicine instrumentation industry. Currently, only Japan has this capability but the Europeans are now attempting to develop it.

Planned Spending on SSC as presented to Congress for FY 1990
(BA \$ in Millions)

	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>Totals</u>
Total Project Funding	\$33	\$99	\$278	\$593	\$694	\$750	\$760	\$832	\$882	\$833	\$140	\$5,894
Est. non-Federal Share	<u>0</u>	<u>0</u>	<u>\$28</u>	<u>\$200</u>	<u>\$200</u>	<u>\$300</u>	<u>\$300</u>	<u>\$300</u>	<u>\$300</u>	<u>\$172</u>	<u>0</u>	<u>\$1,800</u>
Federal Share	\$33	\$99	\$250	\$393	\$494	\$450	\$460	\$532	\$582	\$661	\$140	\$4,094

The detectors necessary for the facility are another example. They will require both new materials for high radiation environments and new signal processing techniques and software. Such electronics will have a myriad of other uses particularly in defense systems such as are envisioned in current Strategic Defense Initiative projects. In the past, many if not most, of the breakthroughs in the signal processing area have come from basic research projects in the physical sciences.

The SSC, it can also be argued, would be of considerable benefit to education. Such a facility would inspire young people to pursue careers in science and technology because of the unique challenge it would provide both to build and to use in the pursuit of new fundamental knowledge. Over 100 U.S. universities are currently projected to utilize this facility.

Congress, State and local governments, leaders of major academic institutions and some business leaders have expressed strong support for the SSC and have encouraged the timely construction of this unique scientific facility.

Finally, several countries including Japan and Italy, after visits from Department of Energy over the past 18 months, seem likely to support the project with financial or in-kind contributions and through participation during construction, operation, or in the particular experiments carried out in the facility by highly qualified physicists from these nations.

In short, there will be many supporters for this project both inside and outside the community it will serve.

International Cost Sharing

Your Administration has proposed that the SSC be located in the U.S. and built mainly with Federal funds. Of the one-third non-Federal funding for the project, the State of Texas has raised \$1 billion and offered as much as \$700 million to defray the cost of the construction project. That leaves at least \$1 billion to be obtained through international participation in the project. The high energy physics community has traditionally been international and cooperative. The increasing costs of high energy physics accelerators and the number of smaller machines that have been or will be decommissioned because they are no longer competitive, will reinforce this tradition.

The SSC is not the only possibility for the "next generation" high energy physics machine. An upgrade to a European accelerator -- the so called LEP machine (Large Electron Positron Ring) at CERN -- to be called the Large Hadron Collider (LHC), is considered to be a less powerful alternative to the SSC, if the U.S. would not go forward with current SSC construction plans. Because LHC would be based upon the existing LEP facility, it could be built much faster and more cheaply than the SSC.

It would, however, have an energy of only one-third that of the SSC (i.e., 5-8 TeV) and would have only one-tenth of the possible collisions thus making very rare forms of matter undiscoverable. Although the LHC would not be competitive with the SSC, if it were the only "next generation" facility, it would enable the Europeans to retake the lead in high energy physics research.

In addition to the LHC, the Soviets, Japanese and Chinese have large particle accelerators under construction, all of which will be very expensive. Of these, only the Soviet accelerator at Serpukhov would be a competitor for the LHC.

Recognizing the cooperative character of research in high energy physics, the SSC has been designed to be a facility operating within the traditions of international scientific collaboration in high energy physics experiments. The SSC will be operated by DOE for the benefit of all qualified scientific users, foreign and domestic.

As currently envisaged the SSC will be a truly international facility, with mutual and equitable contributions and benefits shared by the participating nations. Depending upon the nature and extent of their financial commitments, the participating nations will be allocated an appropriate share either in the development or management structure of the SSC.

The SSC should provide many incentives for participation by foreign countries. In addition to the prestige associated with involvement in the world's largest frontier science facility, collaboration on the SSC will provide unique educational opportunities for young scientists and valuable engineering experience on challenging, state-of-the-art systems.

In addition, options currently under consideration in the organization of the SSC Laboratory which could help stimulate greater foreign investment may include a seat on the Board of Overseers, special recognition of country contributions, seats on advisory committees, management positions, appointment of distinguished fellows/professors, and direct hire of foreign professional nationals.

The major potential contributing foreign countries include Japan, Canada, Italy, France, Federal Republic of Germany, South Korea, India, and Switzerland. These same countries are also expected to contribute detectors for specialized experiments and, perhaps, operating funds once the SSC facility has been completed and is in operation. Formal international cooperative agreements will be pursued in the immediate future through diplomatic channels once the current interagency plan for **International Cooperation on the Superconducting Super Collider** has been cleared.

THE WHITE HOUSE
WASHINGTON

August 31, 1989

INFORMATION

MEMORANDUM FOR THE PRESIDENT

FROM: D. Allan Bromley 

SUBJECT: Background Information on the Superconducting Super Collider (SSC)

I. SUMMARY

The SSC is a large, expensive, accelerator construction project requiring over \$1 billion in funds from other nations for completion. It is the single largest research instrument ever proposed. A complete background on what the SSC is, how it fits within the spectrum of currently designed or in-use high energy physics particle accelerators, and a sketch of present plans for international cost-sharing is presented.

II. DISCUSSION

Attached is a fairly long paper on high energy physics and the SSC construction project; the key aspects are covered in a one page summary. The major reason for providing you with this information at this time is that, as noted in my recent memorandum, OSTP staff have been informed of the possibility that the Japanese Prime Minister will bring up with you the issue of his country's financial participation in the SSC. Several recent developments make this likely:

- o Both Houses of Congress have finally declared support for SSC construction.
- o The SSC Laboratory in Texas has been established and has begun the real design and development work of the project.
- o The leadership in the Japanese Government has changed to one interested in excellent relations with the United States.
- o Several other countries -- including Canada and the European nations supporting The European Center for Nuclear Research (CERN) in Switzerland -- are asking the Japanese for substantial contributions to their own high energy physics accelerator facilities.

International support for the SSC has been, from the outset, an integral part of this Administration's proposal to build this high energy physics facility. Visible Presidential support for this concept of international cooperation is essential in such high level meetings as the upcoming one with the Japanese Prime Minister if the necessary cooperation and participation are to be obtained. The Prime Minister needs to be aware of how important you believe such an agreement would be to both nations: that this cooperation will benefit both nations not only through people-to-people exchanges and consequent mutual cultural understanding but also through the mutual expansion of mankind's scientific knowledge and horizons.

The SSC promises to take its researchers back to the conditions existing only tiny fractions of a second after the initial "Bang of Creation", it promises to resolve one of the greatest mysteries left in the study of our universe -- why and how does matter acquire mass? -- and it promises to take us ever closer to, if not indeed to the realization of Einstein's dream of a complete understanding of the structure of all matter and of the forces through which it acts. This is truly a great adventure and one of the triumphs of the human intellect.

I would welcome the opportunity to provide you with any further information regarding SSC and its planned utilization that you might find of interest.

The Superconducting Super Collider: A High Energy Physics Facility

Summary

The Superconducting Super Collider (SSC) will be the largest basic research facility ever built. It will collide two beams of hydrogen nuclei (protons) together by accelerating them through nearly 10,000 superconducting magnets in a tunnel 53 miles in circumference. It will take eleven years to build and cost almost \$6 billion.

Your Administration is committed to the construction of the SSC. The commitment was made with the understanding that funding the SSC would not be at the expense of other ongoing science programs and that one-third of the total project funding should be provided by non-Federal sources such as the host state and foreign countries that will share in the scientific and technological benefits accruing from the SSC. Cost-sharing in a project of this size is entirely appropriate since other nations as well as the U.S. will have access to, and benefit from, the facility.

The SSC will be a facility operating within the well developed traditions of international scientific collaboration in high energy physics experiments. The SSC will be operated by DOE for the benefit of all qualified scientific users, foreign and domestic. As currently envisaged, the SSC will be a truly international facility, with mutual and equitable contributions and benefits shared by the participating nations. Depending upon the nature and extent of their financial commitments, the participating nations will be allocated an appropriate share either in the development or management structure of the SSC.

The SSC should provide many incentives for participation by foreign countries. In addition to the prestige associated with involvement in the world's largest frontier science facility, collaboration on the SSC will provide unique educational opportunities for young scientists and valuable engineering experience on challenging, state-of-the-art systems.

The major potential contributing foreign countries include Japan, Canada, Italy, France, the Federal Republic of Germany, South Korea, India, and Switzerland. These same countries are also expected to contribute detectors for specialized experiments and, perhaps, operating funds once the SSC facility has been completed and is in operation.

BACKGROUND

Experimental research in high energy physics involves accelerating beams of elementary particles - protons and electrons - essentially to the speed of light, aiming the beams at various targets, and then studying the new forms of matter resulting from the collisions. That these new forms of matter result can be seen by applying Einstein's equation $E=mc^2$. This relationship implies that the energy of a particle (E) and its mass (m) are alternate characteristics. The "trick" in high energy physics is to deliver ever more energy into ever smaller volumes so that some at least of this energy materializes in the form of new, previously unknown particles or states of matter. Thus, in this field there is a continual push to accelerate the beams of protons or electrons to ever higher energies -- to probe ever deeper into matter.

To perform such studies, the structure of physicists continuously push the state of the art of technology. They have developed advanced detectors, high speed electronics, new concepts in particle accelerators and new approaches in which beams of protons (or electrons) are aimed at each other and collide with twice the energy of either beam.

Federal funding programs supporting such research continually face the problem of bringing large accelerators and expensive state-of-the-art detector systems on-line to enable this field to continue to make progress. Currently our high energy physics programs support three major U.S. facilities used to accelerate elementary particles:

- o Stanford Linear Accelerator Center in California (SLAC) managed by Stanford University,
- o Fermi National Laboratory (Fermilab) Batavia, Illinois, managed by the University Research Associates (URA), and
- o Alternating Gradient Synchrotron (AGS) at Brookhaven on Long Island managed by Associated Universities Incorporated (AUI).

These facilities are available to all qualified experimenters from national laboratories and universities and to similarly qualified foreign scientists. In this country alone, these basic research programs provide support and operating expenses for 148 experimental groups from 72 universities and laboratories to use these facilities. (The total American community is about 2,000 to 2,500 professional physicists.)

Fermilab, just outside of Chicago, is currently the most powerful high energy physics accelerator in the world. It holds the world's record for accelerator energies at one trillion electron volts (TeV). Its projected lifetime is ten years or longer, depending on the wealth of physics it will uncover from proton-proton collisions.

SLAC, an electron accelerating facility, is also competitive with the other most powerful electron accelerator in Europe, the Large Electron Positron (LEP) Ring at CERN in Geneva, Switzerland. The AGS at Brookhaven, a currently operating joint high energy and nuclear physics facility, will be the "front-end" for a unique future new accelerator, called RHIC (Relativistic Heavy Ion Collider), designed to investigate collisions of large atomic nuclei. Operating together, the AGS and RHIC will give the U.S. a nuclear physics capability unmatched in today's world.

The Superconducting Super Collider

The Superconducting Super Collider (SSC) is the name given to the "next generation" high energy physics accelerator facility. The main accelerator will have a beam energy of 20 TeV. This is 20 times more than the world's currently most-energetic accelerator located at Fermilab. The Collider itself will consist of two rings of superconducting magnets (nearly 10,000 in all) and associated electrical systems in a common tunnel. The magnets will channel a beam of protons around the tunnel. The tunnel is 53 miles in circumference. The project also includes the associated office and laboratory facilities (buildings, structures, and utilities) required to support the technical systems.

The total project cost is currently estimated to be \$5.9 billion over 11 years with the facility becoming available to researchers in FY 1998. This estimate is based on a conceptual design report that does not take into account, for example, site-specific features nor the actual difficulty of mass producing superconducting magnets and thus the cost estimate is acknowledged to be very approximate.

The Reagan Administration committed to the project in January 1987. The commitment was made with the understanding that funding for the SSC would not be at the expense of other ongoing science programs and that one-third of the total project funding should be provided by non-Federal sources such as the host State and foreign countries that will share in the scientific and technological benefits accruing from the SSC. (See attached.) Cost-sharing in a project of this size is entirely appropriate since other nations as well as the U.S. will have access to and benefit from the facility.

In January of this year, the site for the project was chosen to be Waxahachie, Texas, thirty miles from Dallas.

It can be argued that the spin-offs from SSC-related research should be of considerable value to American industry. For example, U.S. industry does not currently have the capability to produce superconducting magnets in large quantities. These magnets can be useful to the "computer chip" industry and the nuclear medicine instrumentation industry. Currently, only Japan has this capability but the Europeans are now attempting to develop it.

Planned Spending on SSC as presented to Congress for FY 1990
(BA \$ in Millions)

	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>Totals</u>
Total Project Funding	\$33	\$99	\$278	\$593	\$694	\$750	\$760	\$832	\$882	\$833	\$140	\$5,894
Est. non-Federal Share	<u>0</u>	<u>0</u>	<u>\$28</u>	<u>\$200</u>	<u>\$200</u>	<u>\$300</u>	<u>\$300</u>	<u>\$300</u>	<u>\$300</u>	<u>\$172</u>	<u>0</u>	<u>\$1,800</u>
Federal Share	\$33	\$99	\$250	\$393	\$494	\$450	\$460	\$532	\$582	\$661	\$140	\$4,094

The detectors necessary for the facility are another example. They will require both new materials for high radiation environments and new signal processing techniques and software. Such electronics will have a myriad of other uses particularly in defense systems such as are envisioned in current Strategic Defense Initiative projects. In the past, many if not most, of the breakthroughs in the signal processing area have come from basic research projects in the physical sciences.

The SSC, it can also be argued, would be of considerable benefit to education. Such a facility would inspire young people to pursue careers in science and technology because of the unique challenge it would provide both to build and to use in the pursuit of new fundamental knowledge. Over 100 U.S. universities are currently projected to utilize this facility.

Congress, State and local governments, leaders of major academic institutions and some business leaders have expressed strong support for the SSC and have encouraged the timely construction of this unique scientific facility.

Finally, several countries including Japan and Italy, after visits from Department of Energy over the past 18 months, seem likely to support the project with financial or in-kind contributions and through participation during construction, operation, or in the particular experiments carried out in the facility by highly qualified physicists from these nations.

In short, there will be many supporters for this project both inside and outside the community it will serve.

International Cost Sharing

Your Administration has proposed that the SSC be located in the U.S. and built mainly with Federal funds. Of the one-third non-Federal funding for the project, the State of Texas has raised \$1 billion and offered as much as \$700 million to defray the cost of the construction project. That leaves at least \$1 billion to be obtained through international participation in the project. The high energy physics community has traditionally been international and cooperative. The increasing costs of high energy physics accelerators and the number of smaller machines that have been or will be decommissioned because they are no longer competitive, will reinforce this tradition.

The SSC is not the only possibility for the "next generation" high energy physics machine. An upgrade to a European accelerator -- the so called LEP machine (Large Electron Positron Ring) at CERN -- to be called the Large Hadron Collider (LHC), is considered to be a less powerful alternative to the SSC, if the U.S. would not go forward with current SSC construction plans. Because LHC would be based upon the existing LEP facility, it could be built much faster and more cheaply than the SSC.

It would, however, have an energy of only one-third that of the SSC (i.e., 5-8 TeV) and would have only one-tenth of the possible collisions thus making very rare forms of matter undiscoverable. Although the LHC would not be competitive with the SSC, if it were the only "next generation" facility, it would enable the Europeans to retake the lead in high energy physics research.

In addition to the LHC, the Soviets, Japanese and Chinese have large particle accelerators under construction, all of which will be very expensive. Of these, only the Soviet accelerator at Serpukhov would be a competitor for the LHC.

Recognizing the cooperative character of research in high energy physics, the SSC has been designed to be a facility operating within the traditions of international scientific collaboration in high energy physics experiments. The SSC will be operated by DOE for the benefit of all qualified scientific users, foreign and domestic.

As currently envisaged the SSC will be a truly international facility, with mutual and equitable contributions and benefits shared by the participating nations. Depending upon the nature and extent of their financial commitments, the participating nations will be allocated an appropriate share either in the development or management structure of the SSC.

The SSC should provide many incentives for participation by foreign countries. In addition to the prestige associated with involvement in the world's largest frontier science facility, collaboration on the SSC will provide unique educational opportunities for young scientists and valuable engineering experience on challenging, state-of-the-art systems.

In addition, options currently under consideration in the organization of the SSC Laboratory which could help stimulate greater foreign investment may include a seat on the Board of Overseers, special recognition of country contributions, seats on advisory committees, management positions, appointment of distinguished fellows/professors, and direct hire of foreign professional nationals.

The major potential contributing foreign countries include Japan, Canada, Italy, France, Federal Republic of Germany, South Korea, India, and Switzerland. These same countries are also expected to contribute detectors for specialized experiments and, perhaps, operating funds once the SSC facility has been completed and is in operation. Formal international cooperative agreements will be pursued in the immediate future through diplomatic channels once the current interagency plan for **International Cooperation on the Superconducting Super Collider** has been cleared.

THE WHITE HOUSE

WASHINGTON

August 31, 1989

MEMORANDUM FOR JOHN R. SIMPSON
Director, United States Secret Service
Department of Treasury

SUBJECT: Secure Telephones for Former Presidents

In my discussions with former Presidents Reagan, Ford, and Carter each expressed a desire to talk with President Bush via a secure telephone. A secure communications network will facilitate the timely exchange of information on fast-breaking, sensitive situations, and ensure the privacy of Presidential conversations.

To assure network compatibility request USSS install a STU-III in each of the above former Presidents' offices. The Director, White House Situation Room is the focal point for this initiative.


Brent Scowcroft

cc: Chief of Staff
Director, White House Military Office

THE WHITE HOUSE

WASHINGTON

September 1, 1989

MEMORANDUM FOR GOVERNOR SUNUNU

FROM: WILLIAM L. ROPER *WR*

SUBJECT: Status of Americans with Disabilities Act

The Americans with Disabilities Act (ADA) will be the second order of business when the Senate reconvenes on Wednesday, September 6. Senator Kennedy's staff hopes the Senate will finish the bill on Thursday or Friday. The Kennedy staff and the civil rights community expect our cooperation in ushering the bill through the Senate in a smooth manner, and may ask that you or the President contact recalcitrant Senators.

Committee Report

The Kennedy and Harkin staff were most accommodating in the development of the committee report. After meeting with the business community and reviewing comments from within the federal government, we offered 73 changes to a 90 page document. The Kennedy-Harkin staff accepted 68 of the changes. In sum, it was a smooth process that produced a document that should alleviate some of the uneasiness in the business community about what the legislation requires.

Resolved and Unresolved Issues

One of the issues identified as "open" at the conclusion of our negotiations with the Senators, intrastate regulation of telecommunications, has been resolved. It appears that the FCC, OMB, and the Senate will reach agreement that enforcement would be through the FCC with a three year implementation period, rather than the two years allowed in the current draft. The agreement will be reflected in a floor amendment. We now believe this issue likely will be resolved early next week.

One remaining issue emerged in our discussions with the business community about the meaning of the statutory language and the report -- the business community's uneasiness about whether self-confessed drug addicts whose addiction does not harm their workplace performance are within the scope of those protected by the ADA. It is clear that both addicts whose current use is determined by a drug test and those whose use impairs performance are not protected by the ADA.

While we expressed the view that the ADA cannot be read to cover the self-confessed addict, the Kennedy-Harkin staff believes the self-confessed addict is covered. Because we could not reach consensus, we agreed to disagree.

The business community may seek to amend the ADA to include language which explicitly allows complete discretion to fire addicts. We met this week with business groups to explain the drug-related provisions, including the fact that the business community's highest priority -- preserving drug testing -- had been achieved. At the close of the meeting the business representatives concluded that they needed to consult beyond Washington before reaching a conclusion. We have not yet heard their conclusion. This is a most delicate situation, and I will keep you apprised of its status.

The Kennedy/Harkin staff put together the attached proposed colloquy on the meaning of the bill language with respect to drugs. We have shared this colloquy with the business community and are awaiting their response.

Summary

Next week will be the key time for the ADA bill in the Senate. It appears that it is set for quick passage. The one possible problem is the drug provisions in the bill.

In general, the Administration is satisfied with the ADA on the drug issue. In particular, Bill Bennett's staff is also satisfied. Given that next week is both ADA week and drugs week, it will be important that ADA and the Drug Strategy be consistent. On Tuesday, we hope to determine (1) the current state of the business community's thinking on this subject, and (2) Bill Bennett's personal views on ADA's treatment of drug issues.

cc: Roger Porter

Attachment

Colloquy

Senator (): I would appreciate it, Mr. Chairman, if I could have clarification of an issue of particular concern to many business owners. As you know, there is currently an effort underway to establish drug-free workplaces in our nation. Will anything in the ADA inhibit such efforts? In particular, if an employer administers a test of illegal drugs, and refuses to hire all applicants who test positive and fires all employees who test positive, would such individuals have a claim of discrimination under the ADA? That is, can we assure employers that they will not face litigation under the ADA by current users of illegal drugs and alcohol?

Senator Harkin/Kennedy: Yes, we can assure them of that fact, because applicants or employees who test positive on a test for illegal drugs would not have a claim under the ADA. In fact, the bill deals directly with this issue of concern.

The ADA explicitly states that nothing in the Act prohibits or restricts either drug testing or employment decisions taken on the basis of such drug tests. Therefore, an applicant who is tested and not hired because of a positive test result for illegal drugs, or an employee who is tested and is fired because of a positive test result for illegal drugs, does not have a cause of action under the ADA. The mere fact that an employer performed a test which actually measured the current use of illegal drugs, and that the test was positive for use of illegal drugs, is sufficient to end any alleged claim. Of course, people who use controlled substances *under medical supervision* ~~pursuant to a valid medical prescription~~, would be unaffected by this provision of the Act.

So, I think we can assure employers, without hesitation, that they will not face litigation under the ADA on the part of current users of illegal drugs and alcohol who test positive on drug tests administered by the employer.