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"Document Control"

TYPE: ACTION DOCUMENT NUMBER: 9203651
ORIGINATOR: 02 STATUS I DIRECTORATE STATUS

FROM: PETSCHKE, Albert: NEW MEXICO INSTITUTE OF MINING AND TECHNOLOGY

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 12/17/92

SUBJECT: HE IS WRITING REGARDING EXCESS MUNITIONS.

DIRECTORATE STAFF
ASSIGNED: NATIONAL SECURITY ASSIGNED:

ACTION STAFF
REQUIRED: AS/IF NECESSARY ACTION:

SENDER'S DUE DATE:
OSTP DUE DATE: 01/08/93 STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT:

COPIES TO: D. Allan Bromley

WHITE HOUSE TRACKING #: CONTACT PERSON:
REMARKS: PHONE: EXT:

No response necessary. 1/6/93

OSTP RECEIVED: 12/28/92 DEPT RECEIVED:
FILE: P-NATIONAL SECURITY

CENTRAL FILES:



New Mexico Institute
of Mining and Technology

Department of Physics

Socorro, NM 87801

(505) 835-5328
FAX: (505) 835-5707

17 December 1992

Mr. Alan Bromley
Presidential Science Advisor
Executive Offices of the President
Washington, DC 20506

Dear Alan:

I suppose the waning days of administration is the wrong time to be sending anything like this paper, but on the other hand, the paper deals with a national problem and should be seen by someone of your rank, so here it is.

I suppose you are looking forward to getting back to Yale or retiring entirely.

Season's Greetings.

Sincerely,

Albert G. Petschek

SURPLUS MUNITIONS

A National Asset or a Problem?

A New National Challenge

The U.S. faces several new challenges which influence the size and assortment of weapons in its arsenal. The collapse of the Soviet Union led to reduced requirements for conventional munitions and called for a new kind of technical and economic leadership. The challenge from the economically strong nations in the Pacific rim and Europe has led to a need to utilize our national resources and assets more efficiently. The reduced requirements for conventional weapons and the development of smart munitions have produced a stockpile of obsolete or surplus munitions, explosives, and propellants. A further challenge is the need to reduce the stockpile within acceptable environmental constraints.

A Large Stockpile?

According to one source, the quantity of stockpiled munitions to be demilitarized in the U.S. is 340,000 short tons, increasing annually by at least 20,000 tons. Much of this mass is steel, such as in artillery projectiles and bomb casings, but 15 to 20 percent (50,000 to 70,000 tons) is high explosives and another 10 percent (34,000 tons) is propellants. To put these quantities in perspective, during the recent Iraq-Kuwait conflict, the total weight of air bombs delivered in one day was about 10,000 tons. Seen from another perspective, the quantities are not overwhelmingly large. The U.S. commercial explosives consumption for mining and minerals recovery in 1991 was about 2,000,000 short tons. Crudely put, less than one month's rock blasting in the U.S. would consume all of the high explosives and propellants in the surplus munitions stockpile, if it could be used for that purpose.

If the surplus materials could be recycled into commercial explosives and blasting agents, they would become an asset rather than a problem. However, the stockpile consists of a variety of munitions containing many different explosives and propellants, not all of which can be safely recycled. Developments are underway to destroy these materials in environmentally acceptable ways.

Why Not Do Something Useful With It?

It is also necessary to develop environmentally acceptable methods to recycle and reuse, rather than destroy these assets.

Large quantities of TNT and TNT-based explosives can safely be recovered from the stockpiled projectiles and some bombs, and equally large quantities of single- and double-base gun propellants are also available. In the past, much of this surplus would have been destroyed by burning or mass detonation in the open air, at a cost of between \$800 and \$1,500 per ton. Not only are these methods of destruction wasteful, but they may soon be deemed unacceptable because of the toxic fumes and soot they produce. Destruction by other, more acceptable means, such as dissolution and oxidation in high pressure steam, is estimated to cost as much as \$3,000 per ton.

Rock Blasting Provides a Clean Burn Alternative

In the past, large quantities of TNT and double-base propellants were used to great advantage as fuel and sensitizing ingredients in commercial slurry explosives. Although present-day commercial explosives do not require explosive sensitizers, the inclusion of surplus TNT and propellant in rock blasting explosives can be used to great environmental advantage.

The main ingredient in present-day commercial explosives is ammonium nitrate (AN), and the most common blasting agent is ANFO, an oxygen-balanced mix of 94 weight percent AN with 6 percent fuel oil (FO). Because it is oxygen-balanced, ANFO produces no soot and much cleaner reaction products than modern cars — mainly nitrogen, water, and carbon dioxide. Table 1 compares the emission produced by blasting and by automobiles. Detonated by itself in the open air, TNT, which is greatly deficient in oxygen and has a large excess of carbon, produces a great deal of soot and large quantities of carbon monoxide and other compounds, some of which may cause cancer if inhaled at sufficient concentration.

However, AN mixed with about 21 percent TNT is oxygen-balanced, just as ANFO is, and the mix, when detonated in a large diameter drillhole in rock, will produce much cleaner reaction products, again mainly nitrogen, water, and carbon dioxide. Similarly, oxygen-balanced commercial explosives can be formulated with smokeless powder as an ingredient.

Table 1. Fumes emission data from oxygen-balanced rock blasting explosives compared to those from automobile and truck fuels. Explosives fumes data from G. Persson (1983)*; gasoline and diesel fumes are the maximum allowed limit values given in the 1990 Code of Federal Regulations, vol 40, part 86.

Fume Component	Rock Blasting		Autos & trucks	
	low g/kg	high g/kg	Gasoline g/kg	Diesel g/kg
CO	0.5	9.5	19.9	22.8
NOx	0.1	1.9	5.9	8.7
Hydrocarbons	0.5	1.0	2.4	1.8
Particles (soot)	0	0	1.2	0.9

*G. Persson, 1983. "Methods to Reduce the Emission of Air Pollution in Underground Rock Blasting." Final Report, ASF Project 79/3270, Swedish Detonic Research Foundation, Report D51983:18, 108 p., Stockholm, Sweden.

ANFO, which contains only two components — the safe oxidizer ammonium nitrate and a non-flammable fuel oil — is probably by far the safest of all commercial explosives. It is most often mixed on site as the two ingredients are auger-fed into drillholes from a bulk-delivery truck. ANFO presently sells for about \$180 per ton. Although TNT is among the safest of military explosives, it requires a more sophisticated feed and transportation system than fuel oil, and it also poses safety and health problems different from those of fuel oil. It is unlikely that recovered TNT can be used competitively as an ingredient in commercial explosives if it costs more than AN, which presently sells for about \$140 per ton. However, for the tax-payer there is a clear gain if recovered TNT could be sold to produce an income, even one as low as \$100 per ton, as opposed to the added expenditure of \$3,000 per ton or more to destroy it.

TNT is only one example of a valuable asset that can be derived from surplus ammunition, and its recycling and reuse for commercial rock blasting is only one example of how such assets can effectively increase our nation's competitiveness.

What Can Be Done to Accelerate Recycling?

Several individuals in the defense sector are working to find such novel uses for surplus materials. Funds are available for research and development through programs such as the Federal Defense Conversion Program. An example is contracts for developing technology for disposal of unexploded ordnance, such as the land mines on the battlefield in Iraq and Kuwait. However, the emphasis of such efforts has been to destroy or recycle materials for their original applications. Their commercial potential appears not to have been sufficiently realized. It is time for the Department of Defense and the Environmental Protection Agency to direct leadership away from the

present emphasis that treats the surplus ammunition as a bothersome destruction problem or an immense depot of hazardous waste. Instead, private industry, universities, and federal laboratories, using their available resources, both technical and commercial, should be tasked to increase reuse and recycling for commercial applications. In this way, a major part of the problem now under discussion would be transformed into a sizeable asset of benefit to the taxpayers. Such an approach could help the U.S. take the lead, provide U.S. industry with a new market, and provide help in maintaining a defense industrial base for future emergencies.

A Global Problem Waiting to be Solved

The cost of demilitarization of munitions is a global problem. It is estimated that in East Germany alone there are 400,000 tons of superfluous ammunition, and in the former Soviet Union, there are even greater volumes. In addition, the former Soviet Union and the U.S. both have strategic stockpiles in many places around the world.

The U.S. commercial explosives industry is aware of the technical possibilities for recycling and reuse in commercial rock blasting, and could help process major parts of the stockpiled munitions if its potential were challenged in a positive way. Commercial application is preferable to destruction.

November 20, 1992

Per-Anders Persson
Professor of Mining Engineering
Director, Research Center for Energetic Materials
New Mexico Tech, Socorro, NM 87801
Tel: (505) 835-5818, Fax: (505) 835-5680

"Document Control"

TYPE: INFORMATION DOCUMENT NUMBER: 9203431
ORIGINATOR: 02 STATUS C DIRECTORATE STATUS

FROM: ATWOOD, DONALD: DEPUTY SECRETARY OF DEFENSE

TO: D. ALLAN BROMLEY

DATE OF
CORRESPONDENCE: 10/20/92

SUBJECT: COPY OF LETTER TO DR. CHARLES H. TOWNES RESPONDING
TO SEPT 27 LETTER RE: LONG RANGE RESEARCH WITHIN DoD

DIRECTORATE STAFF
ASSIGNED: ASSIGNED:

ACTION STAFF
REQUIRED: ACTION:

SENDER'S DUE DATE:
OSTP DUE DATE: STAFF DUE DATE
DATE COMPLETED: 11/19/92 DATE COMPLETED/DEPT:

COPIES TO: D. Allan Bromley
Karl Erb
Dr. Wong

WHITE HOUSE TRACKING #: CONTACT PERSON:
REMARKS: PHONE: EXT:

OSTP RECEIVED: 10/22/92 DEPT RECEIVED:
FILE: NATIONAL SECURITY-DEFENSE
CENTRAL FILES:



THE DEPUTY SECRETARY OF DEFENSE
WASHINGTON, D.C. 20301-1000



20 OCT 1992

Dr. Charles H. Townes
Department of Physics
University of California, Berkeley
Berkeley, California 94720

Dear Dr. *Charlie* Townes:

Thank you for your letter of September 27, 1992 regarding long-range research within the Department of Defense. I share your concern that the Department continue to maintain a robust and productive long-range research program. We are always looking to improve our programs and research is no exception.

Dr. Berlincourt and his staff were tasked to explore management options aimed at improving defense research. On July 27, 1992 he presented a briefing to the DoD Science and Technology Study Group Offsite meeting which did address some centralization options. However, no decisions were reached and the topic continues to be studied.

The points that you raise in your letter are valid and closely parallel many of our own concerns. The issues you mention are all being carefully considered. You can be assured that we will make no decisions on long-range research without detailed analysis and deliberation.

Thanks again for writing and giving such serious thought to an important issue.

Sincerely,

Donald J. Atwood

cc: Dr. D. Allan Bromley

"Document Control"

TYPE: INFORMATION

DOCUMENT NUMBER: 9202470

ORIGINATOR: 02

STATUS C

DIRECTORATE STATUS

FROM: ANDREWS, DUANE: ASSISTANT SECRETARY OF DEFENSE

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 08/26/92

SUBJECT: LETTER THANKING DR. BROMLEY FOR HIS LETTER TO
SECRETARY CHENEY REGARDING HOUSE APPROPRIATIONS
COMMITTEE ACTION TO REDUCE FUNDING OF NCS.

DIRECTORATE STAFF
ASSIGNED: ASSIGNED:

ACTION STAFF
REQUIRED: ACTION:

SENDER'S DUE DATE:
OSTP DUE DATE: STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT:

COPIES TO: NATIONAL SECURITY
D. Allan Bromley

WHITE HOUSE TRACKING #: CONTACT PERSON:
PHONE: EXT:
REMARKS:

OSTP RECEIVED: 08/26/92 DEPT RECEIVED:
FILE: P-NATIONAL SECURITY-DEFENSE

CENTRAL FILES:

2470



ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, D.C. 20301-3040

August 17, 1992

COMMAND, CONTROL,
COMMUNICATIONS
AND
INTELLIGENCE

Dr. D. Allan Bromley
The Assistant to the President
for Science and Technology
The White House
Washington, DC 20500

Dear Dr. Bromley:

Thank you for your letter to Secretary Cheney regarding the House Appropriations Committee (HAC) action to reduce the funding request of the National Communications System (NCS). I share your concerns on this matter and have endorsed reclaims to the HAC reductions to be considered by the Senate Appropriations Committee (SAC). Additionally, members of my staff and the Office of the Manager, NCS, will be working with the SAC staff to urge restoration of the NCS National Level Plan program funding.

Sincerely,

A handwritten signature in black ink, appearing to read "Duane", is written over the typed name.

Duane P. Andrews

RECEIVED
92 AUG 26 11:50
OST
MAIL ROOM

AUG 3 1992

THE WHITE HOUSE

WASHINGTON

July 27, 1992

52 AUG -4 PM 3:26

Dick
Dear Mr. Secretary:

As you are aware, recent House Appropriations Committee actions reduce the Defense Information Systems Agency O&M funding request for the National Communications System's (NCS) by \$20 million out of a requested \$65.6 million. This reduction would have a disproportionate effect on the National Level Program which is slated to begin systems integration next fiscal year. As the designated authority to exercise the President's emergency telecommunications powers, I am concerned about the impact this reduction would have on NCS efforts to enhance the nation's commercial telecommunications infrastructure to be responsive to critical users through the spectrum of crises.

The President's request for funding is reasonable and the minimum necessary to ensure a reliable telecommunications infrastructure to support the government in time of crisis. I know that you have many programmatic concerns to address as the Department of Defense appropriations bill proceeds through Congress. But I wanted to call this matter to your attention to urge you to work to seek restoration of the reduction in funding of NCS programs.

Sincerely yours,



D. Allan Bromley
The Assistant to the President
for
Science and Technology

The Honorable Richard B. Cheney
Secretary of Defense
The Pentagon
Washington, D.C. 20301

cc: The Honorable Duane P. Andrews (ASD-C³I)
The Honorable Dave Gribben (ASD-LA)

W 34 968

Charlie B.

"Document Control"

TYPE: ACTION

DOCUMENT NUMBER: 9202399

ORIGINATOR: 02

STATUS I

DIRECTORATE STATUS

FROM: TURGEON, Charles F.: CENTRAL INTELLIGENCE AGENCY

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 08/13/92

SUBJECT: HE IS FORWARDING TESTIMONY THAT DIRECTOR GATES IS
PREPARING TO GIVE AT A PUBLIC HEARING REGARDING
ENVIRONMENTAL THREATS FROM PAST SOVIET NUCLEAR
ACTIVITIES.

DIRECTORATE

ASSIGNED: NATIONAL SECURITY

STAFF

ASSIGNED: Dana Sotherland.

ACTION

REQUIRED: IF NECESSARY

STAFF

ACTION: No action necessary.

SENDER'S DUE DATE:

OSTP DUE DATE:

09/01/92

STAFF DUE DATE

DATE COMPLETED:

8/21/92

DATE COMPLETED/DEPT:

COPIES TO: D. Allan Bromley
Nancy Maynard

WHITE HOUSE TRACKING #:

CONTACT PERSON:

PHONE:

EXT:

REMARKS: ASSIGNED TO DANA SOTHERLAND PER DAMAR.

*Testimony arrived after the hearing had
taken place.*

OSTP RECEIVED: 08/18/92
FILE: P-NATIONAL SECURITY

DEPT RECEIVED:

CENTRAL FILES:



Central Intelligence Agency



Washington, D.C. 20505

2399
RECEIVED

92 AUG 18 PM 2:36

OSTP
MAIL ROOM

13 August 1992

NOTE FOR: Dr. D. Allan Bromley
Assistant to the President for
Science and Technology

FROM: Charles F. Turgeon,
CIA Office of Congressional Affairs

SUBJECT: DCI Testimony on Environmental Issues

As you may already know, Mr. Gates has accepted the invitation of Senators Boren and Murkowski to testify at a public hearing to be held at the University of Alaska on 15 August 1992. The DCI has been asked to discuss possible environmental threats resulting from past Soviet nuclear activities; and the role of the Intelligence Community in addressing environmental problems.

An advance copy of the Director's prepared remarks is attached for your review. Should you have any questions on this matter, please contact me at 703/482-8800.

Charles F. Turgeon
Charles F. Turgeon
Senate Liaison

Attachment

Draft Testimony for the DCI at University of Alaska Hearing

I am here today at the request of Senators Boren and Murkowski and Senate Select Committee on Intelligence, to address two issues: possible environmental threats resulting from past Soviet nuclear activities; and the role of the Intelligence Community in addressing environmental problems.

Let me first discuss the role of the Intelligence Community with regard to environmental problems.

As you know, on November 15th last year, the President signed the most far reaching directive to assess future intelligence priorities since CIA and the Intelligence Community were created in 1947. The directive required some 20 policy agencies and departments to identify their intelligence needs to the year 2005. Their responses highlight the increased importance of environmental concerns as an intelligence issue. The National Security Council has integrated all the expressed priorities into one overall list and the Intelligence Community is using this list as a guide for allocating resources.

Policymakers and members of Congress are asking CIA to increase its study of environmental issues because we have special skills, resources, and unique insights. For example:

- o At the request of Senator Murkowski, a team of analysts has been working to assess the potential environmental consequences of long-term nuclear testing and waste disposal practices of the former Soviet Union.
- o Earlier this year I was asked by the President's Science Advisor, Dr. D. Allan Bromley, and Senator Albert Gore, to assist NASA in its effort to collect and analyze satellite data on the environment. The project--called the Earth Observation System--will help scientists to answer some of today's most pressing environmental questions such as "How do the oceans, forests, desert and atmosphere interact as an integrated system?" and "Is the earth's climate changing?" The CIA will provide guidance to NASA concerning the most efficient means for processing the large quantities of data that it is collecting for this project--because we have vast expertise in this area.
- o At Dr. Bromley's suggestion, the Intelligence Community recently assumed membership on the Committee on Earth and Environmental Research, which has become the primary coordinating body for national environmental programs.

Membership on the Committee will provide the Intelligence Community a better understanding of the Committee's activities and requirements and will improve intelligence support to our environmental policymakers.

- o Senators Gore and Murkowski have asked whether CIA data could be released to environmental scientists who are studying global change--and I have agreed to form a team of cleared scientists who will examine our data and determine what would be useful to environmental science.
 - o Under the Congressionally directed Dual Use Technology Initiative, technology developed under the auspices of the Intelligence Community will be transferred to the private sector where appropriate--technology especially useful in answering questions in areas like the environment, law enforcement, and medicine. Twelve projects--costing \$30 million--have been selected.
- Roughly half of the funds are for environmental projects.

Intelligence is applying its special capabilities to nontraditional areas--such as the environment and related foreign nuclear safety issues. For several years the CIA has brought a value-added to the work done on these problems--in our analysis,

our use of unique collection assets, and in our ability to collect and assimilate vast quantities of information.

For example, CIA analysts assessed the scope of the unprecedented environmental damage which occurred when Iraqi forces sabotaged Kuwaiti oil fields last year. Agency specialists used enhanced commercial weather satellite imagery to track daily oil slick movements in the gulf and they used unique collection systems and commercially-available Landsat imagery to verify the number, location, and status of the burning oil wells in Kuwait. The data used by CENTCOM in the bombing that stopped the flow of oil into the Gulf was provided by intelligence. The CIA worked with private experts to develop and build a computer model capable of projecting concentrations of key pollutants--primarily sulfur dioxide and particulates--and their impact on human health and crops.

Since the late 1980s, the Intelligence Community has been contributing to US government efforts to work with other countries to protect the global environment from a host of threats:

- o Ozone depletion, which poses risks of increased skin cancer, blindness, declining agricultural yields, and

fisheries losses, will only be stopped by a worldwide effort--laid out in the Montreal Protocol--to stop using chlorofluorocarbons (CFCs). The Intelligence Community has been following this problem for several years and is starting work on a program to determine whether we can monitor emissions of CFCs.

- o Tropical deforestation is a phenomenon that jeopardizes the world's climate, causes local problems such as flooding and mudslides, and leads to the extinction of plant and animal species needed for biomedical research. CIA analysts have done work on these issues, using satellite imagery and other tools, to support US policymakers in their multi-year efforts to secure an international treaty on forest protection.
- o Possible climate change, and measures adopted by governments to reduce greenhouse gas emissions in an effort to avert it, have potentially far-reaching consequences. As US negotiators worked at length to forge the international agreement on this important issue that opened for signature two months ago in Rio, CIA analysts provided them, over the course of a three-year

period, with a comprehensive series of reports on this multi-faceted problem.

Other similar issues that are the subject of ongoing analytic work include: ocean dumping of hazardous substances; water scarcity and degradation; the environmental consequences of narcotics cultivation; the impact of earthquakes and other natural disasters; food shortages and agricultural resource decline; and the pressures faced by developing and industrialized countries alike as they grapple with the costs of environmental protection. While some of these projects have been started within the past several years, many go back a long way. Our work on agriculture, for example, has been ongoing for decades.

A related subject for intelligence is monitoring the nuclear power programs in countries of concern. This is not a new issue for intelligence. For instance, CIA has kept an eye on the Soviet nuclear power program since the startup of their first small prototype power reactor in 1954. In the years that followed, we compiled an extensive collection of technical literature on the program and on the reactors themselves. CIA integrates this data with information acquired from our

satellites to assess the national security, economic, and safety implications of the program.

Since the Chernobyl disaster in 1986, CIA experts have worked closely with other US government agencies to prepare detailed studies of Soviet-designed power reactors. We are now working with these agencies to determine the most effective way to improve the safety of these reactors. At the same time, we continue to collect information on reactor problems such as the recent accident at the Chernobyl-type reactor located near St. Petersburg, Russia.

CIA has monitored Soviet handling of nuclear waste since 1948, when the reactor that produced the plutonium for the first Soviet nuclear weapon began operation. We now look at environmental contamination due to a variety of nuclear activities--most of which supported nuclear weapons production--and questions about the safety of stored but radioactive liquid and solid waste. This includes reprocessing of fuel from civilian and naval reactors, and naval nuclear activities.

The former Soviet Union's attitude toward safety in handling radioactive waste materials was lackadaisical from the very beginning of its nuclear program. Radioactive wastes resulting

from the extraction of plutonium for the USSR's first nuclear weapons at Chelyabinsk-65 were discharged directly into the Techa River, resulting in severe contamination of the watershed for thousands of kilometers downstream. Subsequent practices were hardly better--highly radioactive waste was dumped into Lake Karachay at the plant beginning in 1951. Today, despite ongoing cleanup efforts, 120 million curies of radioactive materials are in the lake, and as little as one hour's exposure to the radiation at the shoreline could be fatal. Radioactive contamination in the groundwater has spread 2 to 3 kilometers from the lake. Additionally, an explosion in a waste tank at the site in 1957 contaminated over 23,000 square kilometers, and much of the land remains unusable today.

The situation in Chelyabinsk--though perhaps the most severe--is hardly unique. Similar plants in Tomsk-7 and Krasnoyarsk-26 also contaminated the local environment. Open pools of water at Tomsk reportedly contain elevated levels of plutonium and other radioisotopes, resulting in considerable wildlife contamination, including elk, hare, duck, and fish, which are consumed by the local populace. Reactors at the Krasnoyarsk plutonium production plant use water directly from

the Yenisey River for cooling, and have contaminated the river with cesium, strontium, and other radioisotopes for hundreds of kilometers downstream. One of these reactors remains operational today.

Even though these facilities are not in the Arctic, their impact has been observed in the region. All watersheds from these sites flow to the Arctic Ocean, and waste from the polluted Techa River reportedly was discovered in the Arctic as early as 1951. Moreover, the waste handling practices at these sites were all too typical of Soviet attitudes toward nuclear safety and the environment.

The greatest single source of radioactive contamination of the Arctic environment has been from nuclear weapons testing, especially atmospheric testing at the Novaya Zemlya test site in the Arctic from 1955 to 1962. About half of the USSR's approximately 200 atmospheric tests were conducted at Novaya Zemlya. Virtually all of their highest yield explosions were conducted there, with a total yield of over 300 megatons. Among these was the world's largest explosion in 1961--approximately 55 megatons, over 3,000 times the yield of the Hiroshima explosion. In addition to sometimes severe local contamination from fallout,

Soviet atmospheric testing also was the greatest contributor to radioactive contamination of Alaska and northern Canada.

The severity of the contamination decreased dramatically after the 1963 Limited Test Ban Treaty--especially in Alaska and Canada--but Soviet underground nuclear weapons testing and peaceful nuclear explosions continued. Russian statements indicate over 130 peaceful nuclear explosions for mining, seismic sounding, or creation of underground storage cavities were conducted throughout the Soviet Union. A few of these explosions were part of a program to develop the capability to excavate canals using nuclear explosions. These crater-producing explosions produced widespread contamination. In an August 1987 test, for example, the concrete plug placed to contain the explosion was blown out of the tunnel, and radioactive material spewed into the atmosphere. Some of the other explosions may have contaminated the local groundwater, and a few may have leaked radioactive materials. Except for tests at Novaya Zemlya, which sometimes spread contamination into the broader Arctic environment, these leaks probably produce only limited local contamination.

Soviet nuclear reactor accidents also have contributed to contamination of the Arctic. Numerous studies have documented the disproportionately heavy fallout in northern Norway, Sweden, and Finland from the Chernobyl' accident in April 1986. Fifteen of the unsafe Chernobyl'-type nuclear reactors remain in operation in the former Soviet Union, and together with other types of old, unsafe Soviet-designed reactors, comprise over half of the power reactors now operating in the CIS and Eastern Europe. In the Arctic, four small reactors using similar technology to the Chernobyl' reactors are at the remote settlement of Bilibino in the Russian Far East, and a power plant on the Kola peninsula has four aging pressurized-water reactors. The demise of the USSR and its East European client governments has left all of the reactors largely bereft of material support and regulatory guidance. The situation is made worse by the region's severe economic problems, which are undermining efforts to maintain and improve safe operations.

In addition to power reactors, hundreds of reactors are aboard CIS submarines and naval vessels, the majority of which are based in or near Arctic waters. A September 1985 explosion during refuelling of a Soviet nuclear submarine near Vladivostok

illustrates the potential for serious accidents in these reactors. The explosion scattered radioactive material onshore and into the bay, which reportedly was only haphazardly and incompletely cleaned up. In addition, comments by former Soviet navy personnel and two well-publicized sinkings of Soviet submarines since 1986 illustrate the danger fire and accidents pose to CIS submarine reactors. The large number and advancing age of these reactors will increase safety risks, particularly as the CIS begins to dismantle many of the vessels.

Deliberate dumping of radioactive waste materials into Arctic waters, or improper land-based storage is another source of radiological pollution. The USSR dumped substantial quantities of radioactive waste in Arctic waters, including the three damaged original nuclear reactors of the icebreaker Lenin, and reportedly reactors from several submarines--including some with nuclear fuel aboard. Radioactive wastes, mostly from naval reactors, also are buried on Arctic shores. Only Soviet records, if any, or detailed scientific surveys can determine the amount, type, and potential hazards from the material which has been dumped. I expect that we will learn more about these and other concerns in light of the new scientific cooperation, such as the

joint Russian-Norwegian expedition to survey nuclear waste disposal sites in the Kara Sea planned for this month, and information-sharing made possible by the collapse of Communism.

The newly free republics of the former Soviet Union and Eastern Europe face enormous environmental challenges. The deteriorating industrial infrastructure presents a high risk of disasters. The chemical and energy sectors--where much of the equipment is old and in need of replacement--appear to face the highest risk, but serious breakdowns could occur in railroads, civil aviation, and nuclear power plants. In some cases, accidents have already occurred. For example, an oil well in Uzbekistan drilled with inadequate equipment ruptured in March, contaminating farmland and threatening to pollute a vital river. Only through intensive round-the-clock efforts, aided by US experts who in turn were supported by intelligence reports, were workers able to cap the well and protect the river.

Environmental destruction caused by Soviet troops in Eastern Europe is adding substantially to the already heavy cleanup burdens new governments face as the result of four decades of environmental neglect by the region's former communist rulers.

The destruction being revealed by the pullout of Soviet forces clearly will take many years and billions of dollars to repair. Corroded petroleum, oil, lubricants, pipelines and storage tanks as well as poor fuel-handling practices make contamination of soil and groundwater the most ubiquitous pollution problem at former Soviet facilities. Lax safety standards combined with poor storage and accounting practices at ammunition depots have led to soil and water contamination with a variety of heavy metal, acids, and other toxic--and often explosive--wastes. Solvents, paints, coatings, and plating materials have been poorly stored and carelessly dumped. Troop maneuvers involving heavy tracked vehicles and live-firing exercises have destroyed terrain, worsened erosion and water pollution, and contaminated the soil with lead and other substances. Unexploded ordnance presents a safety hazard in and around training areas. East European governments are assessing the dimensions of the pollution problem they have inherited from the Soviet military, but it probably will be many years before these areas can be cleaned up and returned to productive use.

Another Region struggling with the residue of Soviet actions is Central Asia's Aral Sea basin. Over the past 30 years, Soviet

efforts to expand Central Asian cotton production--which required diverting large quantities of water from the rivers that feed the Aral--has reduced the sea by over 40 percent of its volume and 60 percent of its surface area. The leaking and dumping of pesticides into water supplies, the absence of water pricing policies, and fierce competition for water--particularly among the Uzbeks and Turkmen--have significantly worsened Central Asia's critical water situation. Existing political, economic, and ethnic tensions in the region are being further strained by Aral "refugees" moving to cities in search of guaranteed medical care, secure employment, a stable source of drinking water, and essential foodstuffs. Central Asian leaders--faced with serious economic and political difficulties--have discussed cooperation on environmental issues, but have yet to formulate, much less implement, a concrete plan to halt the Aral's desiccation. Even under the best possible circumstances, with effective regional cooperation and massive foreign assistance, it will take at least five to tens years of consistent effort before any progress in halting the Aral's destruction can be realized. Without such cooperation, the Aral basin is likely to become an environmental dead zone.

Although the CIS is faced with a daunting legacy of environmental problems, it is making progress in some areas. For example, for several years they have been converting highly radioactive civilian and military waste to glass--in order to immobilize it and make it more manageable. In other areas, key data on existing and potential environmental problems does not exist because Soviet authorities feared collecting the data might compromise secret activities.

The CIS countries will be unable to meet the costs of clean up--estimated at billions of dollars. Russia took the lead in launching an environmental protection plan based on economic incentives in 1991, but lack of revenues as industrial output declines has resulted in a negative balance that is getting worse. Although CIS environmental ministers have agreed to cooperate on some environmental issues--such as joining with the EC on funds to help with costs incurred from Chernobyl'--each country has turned to the West for aid, including technology and expertise, and will continue to do so. But they have yet to prioritize needs, or to resolve such issues as ownership of land and industrial assets and liability for damages.

For its part, the CIA is helping US agencies working with the CIS to identify the most pressing problems so that our government leaders can ensure that US assistance is used effectively.

The issues that I've talked about today are all considered "nontraditional" intelligence issues. They do not constitute the bulk of CIA's work, but they are important areas of interest to the President and other leaders in our government. In an era of diminishing resources, it will be a special challenge for the Intelligence Community to enhance its capabilities in some of these newer areas, while continuing to monitor more traditional concerns such as proliferation, terrorism, regional disputes, the former Soviet Union and some aspects of international economic affairs.

for its part, the CIA is helping US agencies working with
the CIA to identify the most pressing problems in that area.
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effectively.

The issues that I've talked about today are all considered
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diminishing resources, it will be a special effort.
Intelligence Community to enhance its capabilities.

NSC
EPA
Va Lamprey

the new areas, while continuing to monitor more traditional
areas such as terrorism, narcotics, regional disputes,
the East-West Union and some aspects of international economics
etc.

"Document Control"

TYPE: MEETING REQUEST

DOCUMENT NUMBER: 9202587

ORIGINATOR: 02

STATUS I

DIRECTORATE STATUS

FROM: O'TOOLE, James F., PERRY, Edmund F. and TISDALE, Eben S.:AT&T,
IBM, HEWLETT-PACKARD

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 07/22/92

SUBJECT: THEY ARE REQUESTING DR. BROMLEY'S INPUT FOR THEIR
PROJECT TO MEASURE THE EFFECTIVENESS OF THEIR
COMMUNICATION ABILITY WITH TOP EXECUTIVE BRANCH
OFFICERS.

DIRECTORATE

STAFF

ASSIGNED: NATIONAL SECURITY

ASSIGNED:

ACTION

STAFF

REQUIRED: AS NECESSARY

ACTION:

SENDER'S DUE DATE:

OSTP DUE DATE: 08/07/92

STAFF DUE DATE

DATE COMPLETED:

DATE COMPLETED/DEPT:

COPIES TO: D. Allan Bromley

WHITE HOUSE TRACKING #:

CONTACT PERSON:

PHONE:

EXT:

REMARKS:

OSTP RECEIVED: 07/27/92

DEPT RECEIVED:

FILE: P-NATIONAL SECURITY-TELECOMMUNICATIONS

CENTRAL FILES:



2587

RECEIVED
JUL 27 41 27
MAIL ROOM

July 22, 1992

The Honorable D. Allan Bromley
Assistant to the President for Science and Technology
Old Executive Office Building, Room 360
17th Street & Pennsylvania Avenue, N.W.
Washington, D.C. 20506

Dear Dr. Bromley:

We are writing to ask your cooperation in a project that has been undertaken by our companies, AT&T, IBM and Hewlett-Packard.

In an effort to improve our industry's communications and government relations programs, we have engaged the consulting firm International Business-Government Counsellors, Inc. (IBC) to develop an information base so that we can judge how effectively our industry communicates its issue priorities to key Executive Branch Officers, Members of Congress, and opinion leaders. We jointly sponsored similar efforts in 1987 and 1990, and we have very much appreciated the time and attention that leaders in the Washington policy community have been willing to give us.

A representative of IBC will be contacting you over the next few weeks to arrange a brief interview. We hope you will be able to give about 30 minutes of your time to this project, so that we can have the benefits of the experience and insights you have gained in working with industry representatives.

Let us assure you that any comments you make will be treated in confidence. Responses to the interview will be held in anonymity by IBC, and individual responses will not be shared with the sponsoring companies. We will see only the aggregate data and analysis prepared by IBC.

We hope you will be able to assist in this endeavor and would greatly appreciate your cooperation.

Sincerely,

James F. O'Toole
Director, Corporate
Industry Affairs
AT&T

Edmund F. Perry
Manager, Government
Relations
IBM Corporation

Eben S. Tisdale
General Manager,
Government Affairs
Hewlett-Packard Company

Charlie B.

"Document Control"

TYPE: ACTION
ORIGINATOR: 02

DOCUMENT NUMBER: 9202605
DIRECTORATE STATUS

FROM: FOSTER, JOHN S.: DEFENSE SCIENCE BOARD

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 07/14/92

SUBJECT: REQUEST FOR YOUR PERSONAL RECOMMENDATIONS FOR NEW
MEMBERS FOR THE DEFENSE SCIENCE BOARD

DIRECTORATE
ASSIGNED: D. Allan Bromley

STAFF
ASSIGNED: National Security

ACTION
REQUIRED: AS NECESSARY

STAFF
ACTION: Memo to John S. Foster
Director, DSB

OSTP DUE DATE: 08/05/92
DATE COMPLETED: 08/05/92

STAFF DUE DATE
DATE COMPLETED/DEPT: 8/4/92

COPIES TO:
NATIONAL SECURITY

WHITE HOUSE TRACKING #:

CONTACT PERSON:
PHONE:

EXT:

REMARKS:

Copy of memos prepared by Michelle
Van Cleave are attached.

OSTP RECEIVED: 07/20/92
FILE: P-NS-DEFENSE

DEPT RECEIVED:

CENTRAL FILES:

Pink Sheets
are out of
Stock!!!



Withdrawal/Redaction Sheet

(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
01a. Memorandum	To: John Foster From: Allan Bromley Re: Nomiations for Defense Science Board [personal information redacted] (1 pp.)	7/27/92	(b)(6)	

Collection:

Record Group: Bush Presidential Records
Office: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries: National Security Files
WHORM Cat.:
File Location: National Security - General [1992]

Date Closed:	5/12/2010	OA/ID Number:	62071-008
FOIA/SYS Case #:	2005-0336-F	Appeal Case #:	
Re-review Case #:		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

Withdrawal/Redaction Sheet

(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
01b. Memorandum	To: Allan Bromley From: Michelle Van Cleave Re: Defense Science Board Nominees [personal information redacted] (1 pp.)	7/27/92	(b)(6)	

Collection:

Record Group: Bush Presidential Records
Office: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries: National Security Files
WHORM Cat.:
File Location: National Security - General [1992]

Date Closed:	5/12/2010	OA/ID Number:	62071-008
FOIA/SYS Case #:	2005-0336-F	Appeal Case #:	
Re-review Case #:		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

Withdrawal/Redaction Sheet

(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
01c. Biography	Biographical information of nominees [personal information redacted] (14 pp.)		(b)(6)	

Collection:

Record Group: Bush Presidential Records
Office: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries: National Security Files
WHORM Cat.:
File Location: National Security - General [1992]

Date Closed:	5/12/2010	OA/ID Number:	62071-008
FOIA/SYS Case #:	2005-0336-F	Appeal Case #:	
Re-review Case #:		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

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ATSD(AE)
DUSD(IP)
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Dir, (AP&PI)
DDDRE(P&R)
DDDRE(S&T)
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Dir, TS, OUSD(A)
Dir, T&E, OUSD(A)
Dir, Special Projects, OUSD(A)

Chief of Staff, Army
Chief of Naval Operations
Chief of Staff, Air Force
Commandant of the Marine Corps

Assistant to the President, Office of Science &
Technology Policy
President, National Academy of Science
Director, National Science Foundation
President, National Academy of Engineering

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92 JUL 20 AM 59

MAIL ROOM

2605



DEFENSE SCIENCE
BOARD

OFFICE OF THE SECRETARY OF DEFENSE
WASHINGTON, D.C. 20301-3140

9 JUL 1992

MEMORANDUM FOR DISTRIBUTION LIST

SUBJECT: New Members for the Defense Science Board (DSB)

I would like to solicit your personal recommendations for new DSB members. Attached is a Board roster showing current members.

As in the past, we would like to avoid having more than one member from the same organization. Board members must be able to spend at least 20 days per year on Board activities. We are continuing to place special emphasis on identifying highly qualified scientific and technical candidates. Additionally, we are still looking for women and minority candidates.

Prior Task Force participation offers the individual, OSD, and the Board an opportunity to determine a person's interest and suitability to Board activities and is a desirable prerequisite to membership on the Board. Those persons recommended, but not selected for Board membership, will be put on our list of prospective Task Force members but will not automatically be carried to the next year for consideration as a candidate member.

When submitting your suggestions, please give the full name, current position, education, and background to include specific areas of expertise. A short (1 page is preferred) biographical sketch of your nominee(s) would be greatly appreciated.

Please forward your suggestions (along with bio) to the DSB Secretariat, OUSD(A), The Pentagon, Room 3D865, Washington, DC 20301-3140 or Fax to (703) 697-1860 by August 5, 1992.

John S. Foster, Jr.
Chairman

Attachments

DEFENSE SCIENCE BOARD
MEMBERS AND EX OFFICIO

July 1992

CHAIRMAN

Dr. John S. Foster, Jr.

VICE CHAIRMAN

Dr. George H. Heilmeier
Bellcore

MEMBERS

Mr. Edward C. Aldridge
The Aerospace Corporation

Mr. Norman E. Betaque, Jr.
Logistics Management Institute

Mr. Edwin L. Biggers
Hughes Aircraft Company

Dr. H. Kent Bowen
Harvard Business School

Dr. Joseph V. Braddock
BDM International

Dr. Solomon J. Buchsbaum
Bell Laboratories

Dr. Ashton B. Carter
Harvard University

Mr. Robert L. Cattoi
Rockwell International
Corporation

RADM William A. Cockell, Jr., USN
(Retired Military)
Science Applications
International Corporation

Dr. Leon N. Cooper
Brown University

Dr. John M. Cornwall
UCLA

Dr. John M. Deutch
MIT

Gen Russell E. Dougherty, USAF
Retired Military

Dr. Allan E. Dugan
Xerox Corporation

Mr. Gordon R. England
General Dynamics Corporation

Mr. Robert R. Everett
Private Consultant

Mr. Charles A. Fowler
C.A. Fowler, Associates

Mr. Bruce Gissing
Boeing Commercial Airplane
Group

Mr. Timothy W. Hannemann
TRW

Mr. David R. Heebner
Science Applications
International Corporation

Dr. Robert E. Henderson
South Carolina Research
Authority

Dr. Robert J. Hermann
United Technologies Corporation

Dr. Anita K. Jones
University of Virginia

Dr. Paul G. Kaminski
Technology Strategies and
Alliances

Admiral Isaac C. Kidd, Jr., USN
Retired Military

Dr. Steven E. Koonin
California Institute of
Technology

Dr. Joshua Lederberg
The Rockefeller University

Mr. R. Noel Longuemare, Jr.
Westinghouse Electric Corp. -

Mr. Sol Love
BASLE Corporation

Mr. Verne L. Lynn
Atlantic Aerospace
Electronics Corp.

Mr. Richard C. Messinger
Cincinnati Milacron

Mr. Walter E. Morrow, Jr.
Lincoln Laboratory

Dr. Albert Narath
Sandia National Laboratories

Mr. Robert N. Parker
Private Consultant

Mr. Howard D. Samuel
Industrial Union Department
AFL-CIO

Dr. Joseph F. Shea
Massachusetts Institute of
Technology

General Donn A. Starry, USA
Retired Military

Mr. Samuel M. Tennant
Private Consultant

Gen John W. Vessey, USA (Ret)
Private Consultant

Mr. David G. Wolfe
Motorola Inc.

MEMBERS EX OFFICIO

Mr. Harold L. Brownman
DIA Advisory Board

Dr. James E. Colvard
Naval Research Advisory
Committee

Dr. William R. Graham
SDI Advisory Committee

Mr. James Jacobs
Army Science Board

Hon. Henry S. Rowen
Defense Policy Board

Dr. Harold W. Sorenson
Air Force Scientific Advisory
Board

"Document Control"

TYPE: INFORMATION

DOCUMENT NUMBER: 9201191

ORIGINATOR: 02

STATUS C

DIRECTORATE STATUS

FROM: DEAN, JONATHAN: UNION OF CONCERNED SCIENTISTS

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 04/06/92

SUBJECT: ENCLOSED "A PROGRAM FOR WORLD NUCLEAR SECURITY"

DIRECTORATE

STAFF

ASSIGNED:

ASSIGNED:

ACTION
REQUIRED:

STAFF
ACTION:

SENDER'S DUE DATE:

OSTP DUE DATE:

STAFF DUE DATE

DATE COMPLETED:

DATE COMPLETED/DEPT:

COPIES TO: D. Allan Bromley
INTERNATIONAL/POLICY
NATIONAL SECURITY

WHITE HOUSE TRACKING #:

CONTACT PERSON:

PHONE:

EXT:

REMARKS: *Enclosure to Natl Security.*

OSTP RECEIVED: 04/08/92

DEPT RECEIVED:

FILE: P-NATIONAL SECURITY-DEFENSE

CENTRAL FILES:

1191 2

UNION OF CONCERNED SCIENTISTS

April 6, 1992

The Honorable D. Allan Bromley
Assistant to the President for Science and Technology
Suite 358
Old Executive Office Building
Washington, DC 20500

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02 APR 8 41:58
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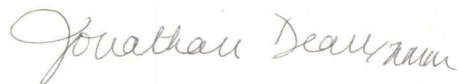
Dear Dr. Bromley:

Recent events in the Soviet successor states and in Iraq have underlined the need to reduce to a minimum the large continuing stockpile of strategic nuclear warheads and missiles in the unstable successor states and to establish a worldwide nuclear non-proliferation system with real bite.

I am sending to you a copy of the comprehensive action program for dealing with these problems which Kurt Gottfried and I have written for the Union of Concerned Scientists. It supersedes earlier versions you may have seen which did not take fully into account the dissolution of central Soviet authority.

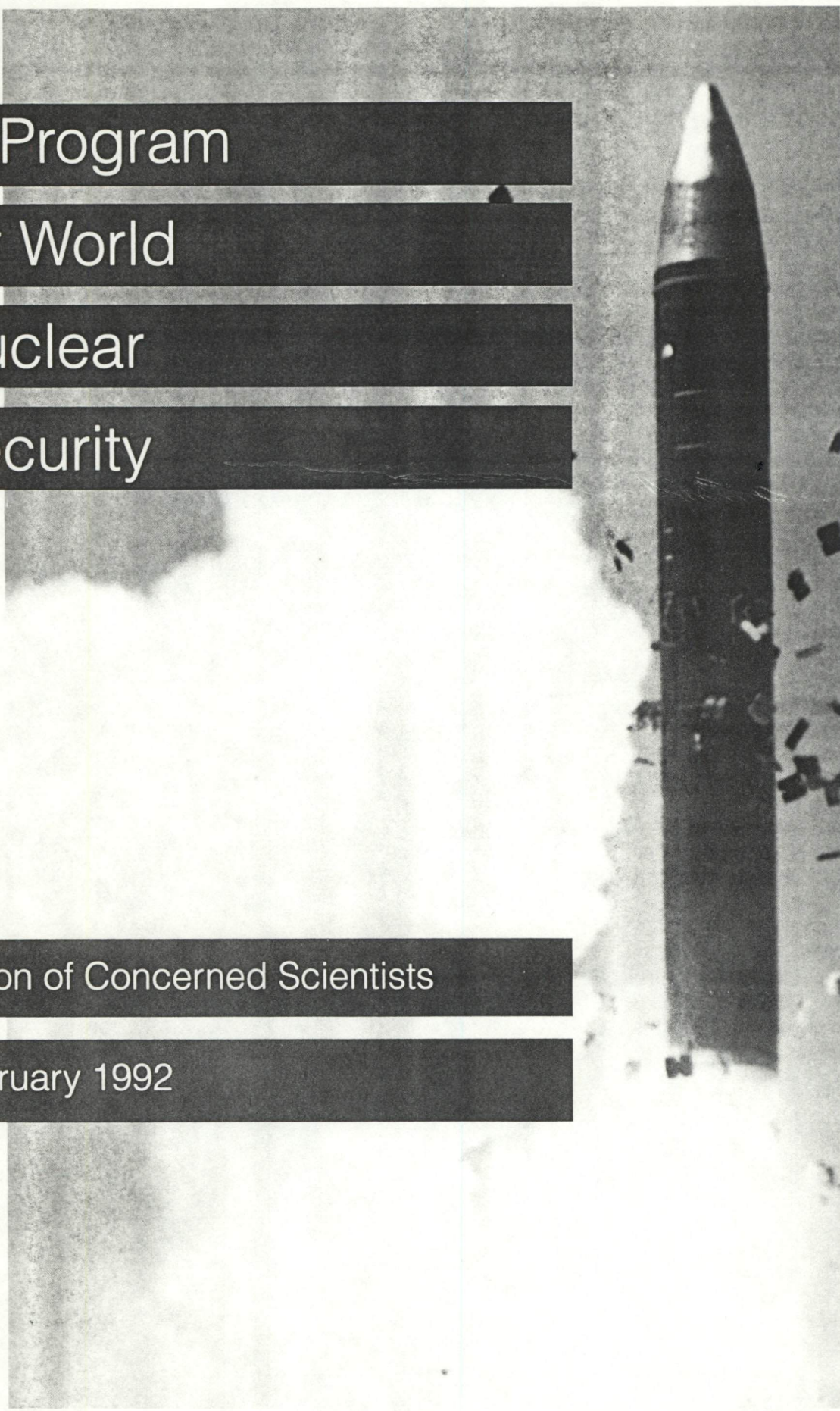
We hope very much that after the pending presidential elections, the victor will turn seriously to a program along these lines.

With best regards,



Jonathan Dean
Arms Control Adviser

JD/nm
Enclosure



A Program

for World

Nuclear

Security

Union of Concerned Scientists

February 1992