OFFICE OF THE DIRECTOR OF
DEFENSE RESEARCH AND ENGINEERING
3040 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-3040

CC: RINALDI
FILE: CNS

February 12, 1998

MEMORANDUM FOR MEMBERS OF THE NATIONAL SCIENCE AND TECHNOLOGY COUNCIL COMMITTEE ON NATIONAL SECURITY

SUBJECT: Committee on National Security Meeting on February 19, 1998

The next meeting of the Committee on National Security (CNS) will be held Thursday, February 19, 1998, from 2:00-3:30 PM in Room 3D1019, the Pentagon. The classification of the meeting will be Secret. Security clearances should be FAXed to Ms. Vickie Michelson at (703) 695-4885.

The meeting agenda and read-ahead material are enclosed. We look forward to having you join us on February 19, 1998. I can be reached at (703) 695-9602 if you have any questions.

Clarence W. Kitchens, Jr.
Executive Secretary
Committee on National Security

Enclosures

DRAFT

Agenda for the Meeting of the
NSTC COMMITTEE ON NATIONAL SECURITY

February 19, 1998
2:00-3:00 PM
Pentagon, Room 3D1019

I. INTRODUCTION

II. STATUS OF CURRENT EFFORTS

- Critical Infrastructure Protection
- International Technology Transfer

III. OTHER BUSINESS

- FY00 R&D Budget Priorities

IV. CLOSING REMARKS

DISTRIBUTION:
Dr. Jacques Gansler, Under Secretary of Defense for Acquisition & Technology
Dr. Kerri-Ann Jones, Associate Director National Security & International Affairs, Office of Science & Technology Policy
Mr. William Reinsch, Under Secretary of Commerce for Export Administration
Mr. Gary Bachula, Under Secretary of Commerce for Technology Administration
Mr. George Singley, Director Defense Research & Engineering
Dr. Ruth David, Deputy Director for Science & Technology, CIA
Mr. Gary Henry, Office of Management and Budget
GEN John R. Dailey, Acting Deputy Administrator, NASA
Ambassador Thomas McNamara, Assistant Secretary for Bureau of Political/Military Affairs, DoS
Mr. Edward B. Knipling, Department of Agriculture
Mr. Robert Knouss, Director, OEP, Department of Health & Human Services
VADM Paul Pluta, Department of Transportation
Ms. Rose Gottemoeller, Director, Office of Nonproliferation & National Security, Department of Energy
Mr. Robert A. Eisenstein, Assistant Director for Math & Physical Sciences, National Science Foundation
Ambassador Ralph Earle, II, Deputy Director, Arms Control & Disarmament Agency
Mr. Robert G. Bell, National Security Council
Mr. R. Rand Beers, National Security Council
Mr. James F. Devine, Department of the Interior
Mr. Leon Fuerth, Office of the Vice President

National Science and Technology Council
Committee on National Security
Committee on Technology

Terms of Reference for the Interagency Working Group on Critical Infrastructure Protection

Goal

The goal of the Interagency Working Group (IWG) is to coordinate critical infrastructure protection (CIP) research and development agendas, policy, and programs for the Federal government.

Scope

The IWG will address all government research and development programs that are applicable to the protection of the nation's critical infrastructures. In particular, the IWG will foster collaborative multi-agency R&D initiatives among Federal departments and agencies.

Organization

- The IWG will operate jointly under the NSTC's Committee on National Security and Committee on Technology.

- The IWG will be co-chaired by the Office of Science and Technology Policy and [*organization to be decided*]. Membership includes but is not limited to the Department of State, the Department of Defense, the Department of Treasury, the Department of Justice, the Department of the Interior, the Department of Agriculture, the Department of Commerce, the Department of Labor, the Department of Health and Human Services, the Department of Transportation, the Department of Energy, the Office of Management and Budget, the National Aeronautics and Space Administration, the National Science Foundation, the Central Intelligence Agency, the Arms Control and Disarmament Agency, the Environmental Protection Agency, the Federal Emergency Management Agency, the National Security Council, and the Office of Science and Technology Policy.

- The IWG will meet weekly to develop a critical infrastructure protection R&D agenda and associated policy, and thereafter bi-weekly to monitor and coordinate the implementation of the agenda and policy.

- Intra- and interagency coordination will also occur between formal, scheduled IWG meetings.

Activities

The activities of the IWG will include, but not be limited to, the following:

- Coordinating the appropriate Federal government entities to identify relevant long-term R&D objectives. The CIP Working Group will ensure that there are consistent, detailed, and comprehensive communications among the government, private sector, and academia in addressing existing and long-term R&D requirements and programs.

- Drafting infrastructure assurance R&D policy. The National Science and Technology Council (NSTC) shall review all R&D policy.

- Developing and updating as necessary a long-term R&D agenda that addresses current and emerging infrastructure protection requirements. The agenda should leverage related R&D investment agendas and programs of other departments and agencies and the private sector to the degree possible. The agenda should make projections of long-term budget requirements.

- Developing and reporting a fully coordinated infrastructure protection R&D program to the NSTC. This program will be updated annually. Key activities will include:

- Comparing infrastructure protection R&D needs to current R&D programs and identifying gaps.
- Coordinating the progress of ongoing infrastructure protection R&D programs.
- Identifying programs to meet needs, including the augmentation of existing programs when deemed necessary.
- Prioritizing and sequencing specific R&D programs to address critical needs.
- Determining funding needed to execute the overall R&D program.
- Identifying Federal investment levels for ongoing critical infrastructure protection R&D.

- Monitor other ongoing studies of CIP R&D needs, CIP R&D agendas, and infrastructure vulnerabilities; ensure the timely distribution of appropriate studies to government entities; and incorporate recommendations from such studies as necessary and warranted.

Schedule

- By April 1, 1998, the IWG will identify all ongoing Federal critical infrastructure protection R&D programs.

- By June 30, 1998, the IWG will develop and deliver to the Committee on National Security and the Committee on Technology a draft Federal government critical infrastructure protection R&D agenda and policy.

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

February 12, 1998

MEMORANDUM FOR PRINCIPALS OF THE COMMITTEE ON NATIONAL SECURITY

FROM: KERRI-ANN JONES K.A. Jones
ASSOCIATE DIRECTOR FOR NATIONAL SECURITY

SUBJECT: International Technology Transfer Working Group Case Studies

The International Technology Transfer Working Group has met three times but has had difficulty coming to closure on the cases to study. There have been differing views expressed by the agency representatives to the working group regarding the value and pitfalls of the proposals. Therefore, I would like to propose that the CNS principals select the cases to be studied. I would request that each CNS principal come to the meeting on February 19 prepared to recommend two cases for the working group to study. A list of candidates developed by the working group is provided, although you are welcome to propose others. The EUV lithography case that was discussed at the last CNS meeting will be postponed. Note that the last two items, numbers 8 and 9, are somewhat different from the other items as they treat generic issues rather than provide focus on a single case. These are, however, also forwarded to us by the working group.

Recall that the purpose of these cases is to examine the processes involved in managing the international technology transfer issues and the treatment of their national security and economic aspects. The purpose is not to ask the working group to revisit outcomes. The focus is on the decision making processes with a view to the lessons learned, how the treatment of such issues generally can be improved, and the possible contributions of CNS.

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February 12, 1998

Possible Cases for the CNS International Technology Transfer Working Group

1) International Participation in Sematech--300 mm silicon wafer initiative and International SEMATECH

In 1996, SEMATECH invited non-U.S. members to join an expanded consortium of I300I (International 300 mm Initiative), a private-sector entity whose purpose is to reduce the duration and cost of the industry's coming move to the use of 300 mm silicon wafers. Inviting non-U.S. members to join the I300I consortium was a concern as it could have implications not only for 300 mm wafers, but also for other technology transfer programs. In January 1998, SEMATECH announced that it was creating a subsidiary, International SEMATECH, which would institutionalize relationships with international participants. There is concern both in the industrial community and in Congress that this will result in a transfer of technology to foreign firms of U.S. Government-supported research that was intended to protect the defense technology base for national security purposes.

In 1994, SEMATECH's board of directors voted to stop seeking institutional federal funding after 1996. Although SEMATECH no longer receives government funding in this manner, DARPA's and ONR's participation have been invaluable and the consortium has asked for the agencies' continued participation in meetings and advisory groups. SEMATECH also participates in relevant Department of Defense program reviews and planning sessions.

Comments: This case could raise a couple of issues for consideration: 1) the importance of an ongoing dialogue with entities such as SEMATECH even after institutional support from the U.S. Government ceases; and 2) the value and costs of retransfer restrictions. SEMATECH largely achieved its goal of contributing to the revitalization of the U.S. semiconductor industry. What should be the government role regarding the transfer of technologies to firms of other nations when the government ceases support?

2) Coproduction of the M109 Howitzer

In 1997, the Government of Switzerland requested an amendment to the U.S.-Swiss M109 Self Propelled Howitzer Coproduction MOU to permit third country sales of their gun mount and other related components as an upgrade alternative to U.S. manufactured systems. The Swiss Government subsequently proposed to use this technology to upgrade Dutch howitzers which would then be sold to the UAE. There is concern about the impact of this agreement on U.S. producers.

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The co-production agreement for the M109, originally signed in the late-1980s, is intended to assist the Swiss government with its national defense. However, there has been increasing concern that this transfer of technology would result in creating a commercial competitor in the global market to the sole U.S. manufacturer.

Comments: This issue illustrates the importance of an ongoing review process to ensure that agreements balancing defense and commercial concerns are enforced. The decision process to determine initial approval seems appropriately addressed through current mechanism--although study of this process could be instructive as a potential model.

3) Second and Third Generation Night Vision Goggle Image Intensifier Device Technology

The US military has developed 2nd and 3rd generation (Gen 2 and Gen 3) image intensifiers small enough to be produced as head mounted night vision goggles (NVGs). Gen 2 image intensifiers are now commonly used for civilian activities such as hunting in the United States and can be ordered through commercial distributors. However, there is a dispute between DoD an DoC regarding their treatment for export control purposes.

DOD and the Department of Commerce have also contested commodity jurisdiction (still unresolved) for Gen 2 "commercial" products. DoD considers Gen 2 to still be intrinsicaly military. American manufacturers, on the other hand, argue that technology advancements eliminated meaningful differences between Gen 2 and Gen 3 system performance. They seek to ease licensing restrictions on Gen 3 products and technology.

Comments: This issue is being addressed though the NSC. In this case there does seem to be a process for managing the issue which is working, although slowly. It might be instructive to understand why some cases, such as this, move more slowly.

4) Rocket Casing Manufacturing--Technology Transfer

At issue was whether the U.S. Government should permit the transfer of manufacturing technology for certain rocket casings from a U.S. firm, to a foreign, in this case Japanese, firm. The State Department determined last year that this technology belonged on the Munitions Control List, over which it has jurisdiction, and that the license should be rejected.

Comment: If there is a matter of controversy, it appears to stem from commodity jurisdiction. Again, there is a process for appeal through the NSC, but objections in other agencies apparently did not reach a high enough level. Study of this process could be instructive in understanding how varied interests are articulated leading up to the decision.

5) Partnership for a New Generation of Vehicles

This is a partnership with a consortium led by the big three automakers to develop a substantially more fuel efficient and environmentally sound passenger vehicle.

Comment: Additional information about the value of this case study would be useful. In general, this is a situation in which foreign auto manufacturers are excluded from the partnership, but foreign subcontracting is allowed. Perhaps this can illustrate how the issue of international participation can be managed to show how to clearly define it to be in the interests of the United States.

6) Hot Section Export Controls

This issue, which went to the President in 1996, involves the treatment of jet engine hot sections. The discussion was essentially one of commodity jurisdiction: the question of which list the technologies should be managed for export control licenses, the munitions control list or the dual-use list. The decision was made to place the technology on the dual-use list if the primary purpose of the transfer involved a civil technology use.

Comment: This issue was managed in the normal export control process managed by the NSC. Value might be gained by studying the case history to learn from the decisionmaking process.

7) Civil Communications Satellites

Initially settled at the same time as the Hot Section issue, the concern in this case was the treatment of embedded technologies, such as encrypted software. The decision at that time was that satellites for civilian uses would be handled as dual-use items even if embedded components were more strictly export controlled. However, this appears to be an issue of ongoing issue.

Comment: Again, this issue was managed in the export control process, but it does appear to continue to re-emerge in some other forms, such as recent discussions involving satellite licensing for remote sensing and also regarding China. This could be interesting as a case in which we need an ongoing process to be consistent in our policy. The follow-up process appears more ad hoc than the initial decision process.

ISSUES THAT ARE MORE GENERAL

8) Third Party Licensing

One of the generic issues about which policies are unclear is third party licensing. If a contractor develops a technology with government support, and acquires a license for the use of that technology, should the contractor be able to freely license the technology to foreign entities? This is a particularly relevant issue when the technologies were developed for national security purposes or with commercial competitiveness as a driving rationale. Sharing information about agency approaches and experiences in this area could benefit the U.S. Government's overall approach to the issue.

One example is the case of computer chip manufacturing and assembly supported in the Government agencies. There are anecdotal complaints by U.S. manufacturers of the technology developed at least in part by U.S. Government funds being transferred to foreign companies who then compete in the same markets as the small U.S. firms.

Comment: This does appear to be an area in which there are no clearly laid out policies. Understanding how the various agencies handle these licensing issues was touched upon by the CTI study of International Technology Transfer, and their observation was that such guidance was generally lacking.

9) National Laboratory Technology Transfer Policies

One issue that is still highly uncertain is the extent to which the national laboratories establish guidelines for international technology transfer related to research conducted for the government. Although a comprehensive review of laboratory practices is beyond the ability of the working group, it may be useful to develop a description of some "best practices" in this area that can be shared among the laboratories. As the CRADAs are, for example, generally delegated to the laboratories for management, it would be instructive to learn more about the guidance and management processes that the labs have put in place.

Comment: This is not a case study but rather a collection of best laboratory practices in international technology transfer. There are likely to be cases in which policies have been developed at laboratories that can serve as useful models for others. Anecdotally, for decades laboratory researchers have expressed concern about the lack of clear guidance and policy regarding the transfer of research results to foreign entities. For example, if a researcher develops a computer model with millions of U.S. taxpayer dollars, what should be done if a foreign body requests the entire source code? Some laboratories have established policies for dealing with this issue that may be useful to disseminate.

NSTC COMMITTEE FOR NATIONAL SECURITY
Minutes -- Meeting of December 15, 1997

The Committee for National Security (CNS) held its fifteenth meeting on December 15, 1997. The Principals who attended are listed at Attachment 1. The primary purposes of the meeting were to discuss options proposed by the CNS Working Group on International Technology Transfer Issues and Policy, provide guidance to the group on their future direction and discuss possible new activities related to critical infrastructure protection. The meeting agenda is shown at Attachment 2.

I. INTRODUCTION

Dr. Kerri-Ann Jones introduced her co-chair, Dr. Jacques Gansler, the Under Secretary of Defense for Acquisition and Technology, who was attending his first meeting of the CNS.

II. CURRENT EFFORTS

A. International Technology Transfer Working Group

Dr. Jones introduced the subject and pointed out that international technology transfer is a complicated area, that the problem needs to be better defined, and that the group needs clear marching orders. She then introduced Dr. Steve Rinaldi of OSTP, who presented the progress report of the CNS Working Group on International Technology Transfer Issues and Policy.

Dr. Rinaldi went through the progress report, which had been included in the read-ahead package for the meeting. The working group focused its activities on evaluating existing data on and studies of technology transfer and interfaces with industry. The working group met with eight different groups as part of its review of currently existing data on technology transfer. One of the problems the group encountered was defining "critical technology," a term for which it found three different definitions. Although a considerable amount of statistical data and studies are available, these resources are not widely disseminated, and key decision makers and their staffs might not be aware of them. Furthermore, important interfaces with industry might be unknown and thus overlooked during policy deliberations. The working group contacted the Industrial College of the Armed Forces (ICAF) concerning ICAF's participation in this study. ICAF expressed interest in possible student projects, contingent on student interest, but the projects would have to be scheduled over a 6- to 12-month period to fit the academic year. The working group recommended that its focus in the next quarter be on tasks 8 (characterize benefits and risks of technology transfer) and 9 (identify effects current mechanisms have on technology import). The long-term activities should examine tasks 6 (interagency issues and differences on technology transfer) and 7 (technology transfer process improvements).

Dr. Gansler asked what the problem was that the group was trying to solve, since it wasn't clear from the stated objective. Mr. William Reinsch responded by pointing out that the Extreme Ultraviolet Lithography Cooperative Research and Development Agreement (EUV CRADA) with DOE may eventually involve foreign technology transfer, but that there is no mechanism to address the issue in a coherent fashion. Each agency is looking at the problem from the perspective of its own portfolio, but no one is looking at a national policy. Mr. Reinsch felt that the priority should be on tasks 6 and 7 rather than 8 and 9 as recommended by the group. After some discussion, the committee agreed that the group should focus on tasks 6 and 7. In particular, the group should examine mechanisms (e.g., an organizational structure) that could

consider individual cases as they developed. Dr. Gansler indicated that the group should concentrate on task 7, with nominal effort on task 6. When the group identifies a mechanism, it should be tested on a half dozen cases or so to provide validity. The principals agreed that it would not be appropriate for ICAF to undertake a major new study for the working group, given its academic schedule constraints, and that it is not a multiagency institute. Dr. Jones encouraged the members of the working group to take a more active role.

B. Non-Proliferation and Arms Control Technical Working Group

Dr. Jones introduced Ms. Sallie Mullins of ACDA, one of the three co-chairs of the Non-Proliferation and Arms Control Technical Working Group (NPAC/TWG). Dr. Jones indicated that the group had been in existence for 3 years and had done a good job of gaining ground truth in the area. She had attended the last meeting of the NPAC/TWG, in October 1997, and found policy observations and funding issues identified by the group that were beyond its scope and in need of a forum for further discussion. CNS could be such a forum. As a result, she invited Ms. Mullins to speak about some of the things that had been uncovered that might be of interest to the CNS.

Ms. Mullins believes that there has been good coordination among the TWG members. The problem has been in acquiring the recommended funding. The NPAC/TWG is now working with the Counter Proliferation Review Committee (CPRC) to address common areas of interest. One such area is detecting, characterizing and monitoring; common issues include sensor development and deployment, and modeling. Unattended remote sensors are a useful and productive approach, but programs in this area are vulnerable within various agencies; a more stable 6.1 and 6.2 funding line is necessary for long-term success. However, there is no central leadership in the area of unattended remote sensors. The Measurement and Signature Intelligence (MASINT) office seems to be the logical organization for central leadership. The NPAC/TWG is working with the CPRC to develop an integrated R&D and acquisition plan for unattended remote sensors to improve developer coordination and user acceptance.

Plume modeling is another common area. Although many models exist, agencies tend not to trust models developed by someone else. The Defense Special Weapons Agency (DSWA) has a small effort funded through George Mason University to understand the input parameters to the various models. The TWG recommends that the effort be expanded to develop a matrix that considers a variety of situations in which the models might be used (e.g., battlefield, counterterrorism) and important parameters (e.g., altitude, particle size). The goal would be to determine which models are best suited for specific situations. It was estimated that it would cost $1.3 million over 3 years to develop this matrix. This would include some R&D and some O&M work on the models.

As an example of why this work is needed, it was pointed out that some models may give two different answers with the same input. Validation and verification may be necessary on some models. The TWG has a proliferation modeling focus group that is monitoring this area. What is needed is better interagency coordination and a slight increase in funds. In response to a question, it was noted that other agencies (e.g., Nuclear Regulatory Commission, NOAA, National Weather Service) use plume models. Plume modeling cuts across the nonproliferation and arms control spectrum.

The NPAC/TWG seeks CNS interest and support in furthering policy discussions on such issues. Dr. Jones suggested that, in addition to its annual report, the NPAC/TWG provide a short list of policy recommendations for the CNS to consider at its next meeting. Ambassador James Sweeney recommended that the list include funding associated with each recommendation.

III. POSSIBLE NEW EFFORTS

A. Critical Infrastructure Protection

Dr. Jones cited the President's Commission report on Critical Infrastructure Protection, which states that R&D in this area is inadequate and should be doubled from the current level of $250 million. She and Mr. Reinsch sit on the interagency working group (IWG) that is reviewing the report. Discussions have been held on what structure should be established to carry out whatever the government decides to do. The IWG is considering proposals on how to coordinate the R&D.

Dr. Jones has proposed that the CNS be tasked to coordinate the R&D program. This would require working with the Committee on Technology of the NSTC. An IWG involving the two committees would be established. It would also be necessary to have additional members (e.g., Department of Justice). Mr. Reinsch stated that he has spoken with NIST and that they are comfortable with such a group. The CNS agreed that R&D coordination is needed. Dr. Jones indicated that her office is looking into how the Commission calculated the $250 million funding level and has asked OMB to independently identify the FY98 and FY99 critical infrastructure protection R&D funding levels.

This effort could result in a heavy staff workload, and the group should consider who from each agency would be the appropriate person to work on it. Acceptance of this task would mean that the CNS would have to meet more often, perhaps every 6 weeks. Mr. Reinsch stated that he was glad Dr. Jones was doing the ground work on critical infrastructure protection because it could become the "issue of the year" and receive more money from Congress.

There was consensus among the committee members with the recommendation that the CNS coordinate the R&D on this topic.

IV. OTHER BUSINESS

There was no other business.

V. CLOSING REMARKS

The next meeting will be scheduled for mid-February 1998.

3/6/98
Dr. Jacques Gansler, Chair (date)

Kerri-Ann Jones 1/27/98.
Dr. Kerri-Ann Jones, Co-Chair (date)

Attachments:
1. List of Principals attending
2. Meeting agenda
3. Progress Report Briefing of the CNS Working Group on International Technology Transfer Issues and Policy

Principals Attending Meeting of Committee for National Security
December 15, 1997

Dr. Jacques Gansler, Chair	Under Secretary of Defense for Acquisition and Technology
Dr. Kerri-Ann Jones, Co-Chair	Associate Director, National Security and International Affairs, Office of Science & Technology Policy
Ms. Rose Gottemoeller	Director, Office of Non-Proliferation and National Security
GEN John R. Dailey	Associate Deputy Administrator, NASA
Mr. William Reinsch	Under Secretary of Commerce for Export Administration
Dr. Ruth David	Deputy Director, Science and Technology, CIA
Ambassador James Sweeney	Special Representative of the President and Chief Science Advisor, Arms Control and Disarmament Agency
Vice Admiral Richard Herr	Vice Commandant, Coast Guard

Attachment 1

Agenda for the Meeting of the
NSTC COMMITTEE FOR NATIONAL SECURITY

December 15, 1997
2:00-3:30 PM
Pentagon, Room 3D1019

I. INTRODUCTION

II. STATUS OF CURRENT EFFORTS
- International Technology Transfer Interagency Working Group
- Non-Proliferation and Arms Control Technical Working Group (NPAC-TWG)

III. POSSIBLE NEW EFFORTS
- Critical Infrastructure Protection

IV. OTHER BUSINESS

V. CLOSING REMARKS

Attachment 2

1997 ANNUAL REPORT
from the
COMMITTEE ON NATIONAL SECURITY
of the
National Science and Technology Council

I. Charter and Membership

The Committee on National Security (CNS) is chartered to facilitate coordination of federal efforts in research and development in areas of national security. The Committee identifies relevant priorities, programs and plans across federal agencies with a view toward advising the NSTC about the vigor and appropriateness of federal investments in R&D that underpin a sound national security posture. Committee activities facilitate coordination and integration of national security science and technology programs, increased operational collaboration among federal agencies and the identification of national security science and technology priorities. As appropriate, gaps and overlaps in programs are identified with a view toward improving investment selections and coordination. Strengths and successes are identified with a view toward optimizing performance, increasing collaboration, leveraging investments and employing economies of scale.

In 1997 fifteen agencies were represented on the Committee. The agencies and members were:

Department of Defense	Dr. Paul Kaminski (Chair, Jan-Jun)
	Mr. Noel Longuemare (Chair, Jul-Nov)
	Dr. Jacques S. Gansler (Chair, Dec)
Office of Science and Technology Policy	Dr. Kerri-Ann Jones (Co-Chair)
Department of Agriculture	Dr. Miley Gonzalez
Department of Commerce	Dr. Mary Good
	Dr. William A. Reinsch
	Dr. Gary Bachula
Department of Energy	Dr. Victor H. Reis (Vice-Chair)
	Ms. Rose Gottemoeller
Department of Health and Human Services	Mr. Robert Knouss
Department of Interior	Mr. James F. Devine
Department of State	Ambassador Thomas MacNamara
Department of Transportation	Admiral Richard D. Herr
Central Intelligence Agency	Dr. Ruth A. David
Arms Control and Disarmament Agency	Ambassador James Sweeney
	Mr. Ralph Earle II
National Aeronautics and Space Admin.	General John R. Dailey, Ret.
Office of the Vice President	Mr. Leon Fuerth
Office of Management and Budget	Dr. Gordon Adams
	Mr. Gregory Henry

National Science Foundation	Mr. Robert A. Eisenstein
National Security Council	Mr. Robert Bell
	Mr. R. Rand Beers

The Executive Secretary to the Committee was Dr. Clarence W. Kitchens, Jr. (Department of Defense).

II. Sub-Committees and Working Groups

Two working groups executed Committee actions: a non-proliferation/arms control technical working group and an international technology transfer working group.

Since being formed in 1994, the Non-Proliferation/Arms Control Technical Working Group (NPAC TWG) has evolved into a highly credible vehicle for coordinating a key element of our national security science and technology strategy. The NPAC TWG is composed of thirteen, inter-agency, subject-specific focus groups and a Technology Needs Subcommittee, drawing on over thirty U.S. Government organizations through the active participation of more than 100 scientists, engineers and program managers. The NPAC TWG is increasingly recognized as a mature and viable forum for initiating and expanding interagency R&D collaboration and examining policies, programs and plans across federal agencies. The NPAC TWG reports to the President through the CNS and the National Security Council.

The International Technology Transfer Working Group was established in December 1996 to identify ways to improve national policy mechanisms governing international technology interactions. The tasks assigned to the Working Group include: reviews of mechanisms and legislation; "Buy American" legislation as a barrier to exports; refinement of definitions of critical technology and related export policies; review of the practices of other governments; consultation with U.S. industry; identification of interagency differences; consideration of improvements for interagency cooperation; risk assessment; and the relationship of export policies on the import of technology. The Working Group has initiated efforts to examine the export of technology in the context of its impact on U.S. security and competitiveness, the adequacy of existing control mechanisms, and interagency approaches and concerns. The Working Group includes representation from the Departments of Commerce, Defense, Energy and State, the Arms Control and Disarmament Agency and NASA.

III. Major Accomplishments

During 1997 the Non-Proliferation/Arms Control Technical Working Group maintained its primary missions of coordinating federal R&D in non-proliferation and arms control and examining policies, programs and plans across federal agencies. In addition to its periodic briefings for the relevant NSC policy internal working groups, the White House Office of Science and Technology Policy and the CNS, the NPAC TWG held discussions with Senate staffers on ways that NPAC TWG elements could complement the work of

Congressional working groups. The NPAC TWG offered to support Congressional seminars and educational fora by serving, on an *ad hoc* basis, as a clearinghouse for current, objective, interagency-coordinated information on non-proliferation and arms control technologies. This will establish a nexus for the administration and Congress to share information that represents the consensus of the federal R&D community on relevant aspects of the U.S. government science and technology.

The NPAC TWG pursued new and expanded efforts in three areas:

- The NPAC TWG collaborated with DoD's web-based Technology Navigator to develop a means for information on technology R&D products and studies to be submitted and routed to NPAC TWG focus groups through a browseable and searchable database. This will help ensure that federal non-proliferation and arms control R&D interests can be effectively communicated to the industry and university communities.

- The Technology Needs Subcommittee formally identified national non-proliferation and arms control issues where technology could be effectively applied in their resolution, and identified and vetted through the NPAC TWG membership, specific tasks and needs that responded to the issues. These steps set the stage for developing priorities for current and future R&D efforts.

- The Technology Needs Subcommittee was effective at raising the level of awareness across the government of the impact of budget reductions and changing priorities on basic research and phenomenology, the transitioning of new technologies to operational use, and the operations and maintenance of key capabilities. Many of these issues represent multi-agency needs that cannot be supported adequately through individual agency budgets.

In December 1997 the NPAC TWG requested that CNS play a role in policy issues that are beyond the scope of the TWG – e.g., budget needs and enhanced coordination. The NPAC TWG has been tasked to provide a short list of policy recommendations and associated funding for the CNS to consider at their February 1998 meeting.

The International Technology Transfer Working Group undertook efforts in 1997 to describe the primary government mechanisms for monitoring, assessing and controlling international technology transfer and the export of technology and equipment, including third party sales. The Working Group concluded that the government presently has only a limited ability to monitor and control the international flow of technology and that the technology which is controlled is primarily that technology governed by the Commerce Control List and the Munitions List. The Working Group identified the Nonproliferation and Export Control Interagency Working Group, Export Administration Review Board, Advisory Committee on Export Policy, Operating Committee on Export Policy and the National Disclosure Policy Committee as the primary interagency groups for monitoring and assessing the transfer of export-controlled technology. The Working Group concluded that although analysis is

occasionally done on individual projects when a case is controversial, in general, the government performs neither prospective, nor retrospective, analyses on the impact of technology exports across multiple programs. Licensing decision are generally made based on narrow evaluation factors which do not include analyses of multidimensional and long-term effects.

The Working Group also considered interagency issues and differences and found general agreement on many key points. All agencies are generally concerned about the same fundamental considerations: defense, non-proliferation, economic and industrial base and U.S. science and technology leadership. Their differences are differences of emphasis and perspective, and the resulting interagency debate is not only unavoidable, it is healthy and should be fostered.

The Working Group concluded that there is no overarching government process that considers the positive, negative and long-term implications of transfers of technology, either from the U.S. to other countries or between other countries, but that such a process is neither practical, nor desirable. The Working Group will determine whether it is feasible to develop a more systematic policy process for dealing with fast-moving technology and evolving international conditions.

In addition to the CNS activities and accomplishments that aligned with the working groups, other subjects considered by the Committee included: a memorandum of understanding (MOU) signed between DoD and the Semiconductor Industry Association establishing a joint long-term research program, issues associated with radiation-hardened electronic devices, DoD-wide RDT&E resourcing and demographics, and critical infrastructure protection.

IV. Projected 1998 Issues and Activities

The Committee's 1998 activities are expected to focus on three areas: non-proliferation/arms control R&D, international technology transfer and critical infrastructure protection R&D.

Many NPAC TWG technology problems cut across agency missions, but do not currently rise to the level of attention warranted from a national perspective. The key thrust of the 1998 NPAC TWG activities will be to promote a shared interagency understanding of the evolving dynamics of effective R&D coordination in an era of fiscally constrained resources. In our current fiscal environment, it is a great challenge for a single agency to make investments in areas outside its mission that might benefit the broader R&D community and advance counterproliferation and arms control goals.

After three years of developing an effective process for coordinating federal non-proliferation and arms control technology programs within traditional acquisition structures, strong indications have emerged that innovative approaches are needed for debating and

adjudicating recurring technology issues. The NPAC TWG expects to integrate R&D coordination more fully into the budget process by highlighting successful interagency approaches for assigning resources to national needs, encouraging stable and supportive leadership in the R&D community, and ensuring existing and planned efforts have coordinated policy-level justification.

The International Technology Transfer Working Group will focus its 1998 efforts on technology transfer process improvements. In particular, the group will concentrate on identifying mechanisms (e.g., an organizational structure) that can consider individual technology transfer cases as they develop. These mechanism will be tested on a half dozen technology transfer cases to provide validity. In addition, the Working Group will attempt to more fully understand interagency issues and differences on international technology transfer and equipment export.

The President's Commission on Critical Infrastructure Protection (PCCIP) concluded in its October 1997 report that our present national critical infrastructure protection R&D efforts are inadequate and should be doubled from the current level of $250 million. The CNS endorsed an OSTP proposal that CNS jointly charter a new working group with the NSTC Committee on Technology (CT) that would develop a critical infrastructure protection R&D agenda, coordinate R&D programs, and track budgets. If this proposal is accepted by the Critical Infrastructure Protection Principals Committee, we envision that CNS and CT will quickly establish the joint working group.

It is expected that as other issues arise relevant to national security developments, policies and/or budgets, the Committee on National Security will engage in discussion and activity as warranted.

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DATE: February 13, 1998 **PAGES (INCLUDING COVER SHEET): 9**

TO: Vickie **OFFICE:**
TEL: (703) 695-0552 **FAX: (703) 695-4885**

Vickie,

Attached please find the read-ahead package. We made one change to the agenda (deleted the discussion of a potential working group on humanitarian demining), primarily due to the fact that Dr. Kerri-Ann Jones has yet been unable to contact Mr. George Singley.

If you have any questions, or if the fax does not come through, please call me.

Thanks,

Steve Rinaldi

D R A F T

Agenda for the Meeting of the
NSTC COMMITTEE ON NATIONAL SECURITY

February 19, 1998
2:00-3:00 PM
Pentagon, Room 3D1019

I. INTRODUCTION

II. STATUS OF CURRENT EFFORTS

- Critical Infrastructure Protection
- International Technology Transfer

III. OTHER BUSINESS

- FY00 R&D Budget Priorities

IV. CLOSING REMARKS

National Science and Technology Council
Committee on National Security
Committee on Technology

Terms of Reference for the Interagency Working Group on Critical Infrastructure Protection

Goal

The goal of the Interagency Working Group (IWG) is to coordinate critical infrastructure protection (CIP) research and development agendas, policy, and programs for the Federal government.

Scope

The IWG will address all government research and development programs that are applicable to the protection of the nation's critical infrastructures. In particular, the IWG will foster collaborative multi-agency R&D initiatives among Federal departments and agencies.

Organization

- The IWG will operate jointly under the NSTC's Committee on National Security and Committee on Technology.

- The IWG will be co-chaired by the Office of Science and Technology Policy and [*organization to be decided*]. Membership includes but is not limited to the Department of State, the Department of Defense, the Department of Treasury, the Department of Justice, the Department of the Interior, the Department of Agriculture, the Department of Commerce, the Department of Labor, the Department of Health and Human Services, the Department of Transportation, the Department of Energy, the Office of Management and Budget, the National Aeronautics and Space Administration, the National Science Foundation, the Central Intelligence Agency, the Arms Control and Disarmament Agency, the Environmental Protection Agency, the Federal Emergency Management Agency, the National Security Council, and the Office of Science and Technology Policy.

- The IWG will meet weekly to develop a critical infrastructure protection R&D agenda and associated policy, and thereafter bi-weekly to monitor and coordinate the implementation of the agenda and policy.

- Intra- and interagency coordination will also occur between formal, scheduled IWG meetings.

Activities

The activities of the IWG will include, but not be limited to, the following:

- Coordinating the appropriate Federal government entities to identify relevant long-term R&D objectives. The CIP Working Group will ensure that there are consistent, detailed, and comprehensive communications among the government, private sector, and academia in addressing existing and long-term R&D requirements and programs.

- Drafting infrastructure assurance R&D policy. The National Science and Technology Council (NSTC) shall review all R&D policy.

- Developing and updating as necessary a long-term R&D agenda that addresses current and emerging infrastructure protection requirements. The agenda should leverage related R&D investment agendas and programs of other departments and agencies and the private sector to the degree possible. The agenda should make projections of long-term budget requirements.

- Developing and reporting a fully coordinated infrastructure protection R&D program to the NSTC. This program will be updated annually. Key activities will include:

- Comparing infrastructure protection R&D needs to current R&D programs and identifying gaps.
- Coordinating the progress of ongoing infrastructure protection R&D programs.
- Identifying programs to meet needs, including the augmentation of existing programs when deemed necessary.
- Prioritizing and sequencing specific R&D programs to address critical needs.
- Determining funding needed to execute the overall R&D program.
- Identifying Federal investment levels for ongoing critical infrastructure protection R&D.

- Monitor other ongoing studies of CIP R&D needs, CIP R&D agendas, and infrastructure vulnerabilities; ensure the timely distribution of appropriate studies to government entities; and incorporate recommendations from such studies as necessary and warranted.

Schedule

- By April 1, 1998, the IWG will identify all ongoing Federal critical infrastructure protection R&D programs.

- By June 30, 1998, the IWG will develop and deliver to the Committee on National Security and the Committee on Technology a draft Federal government critical infrastructure protection R&D agenda and policy.

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

February 12, 1998

MEMORANDUM FOR PRINCIPALS OF THE COMMITTEE ON NATIONAL SECURITY

FROM: KERRI-ANN JONES K.A. Jones
ASSOCIATE DIRECTOR FOR NATIONAL SECURITY

SUBJECT: International Technology Transfer Working Group Case Studies

The International Technology Transfer Working Group has met three times but has had difficulty coming to closure on the cases to study. There have been differing views expressed by the agency representatives to the working group regarding the value and pitfalls of the proposals. Therefore, I would like to propose that the CNS principals select the cases to be studied. I would request that each CNS principal come to the meeting on February 19 prepared to recommend two cases for the working group to study. A list of candidates developed by the working group is provided, although you are welcome to propose others. The EUV lithography case that was discussed at the last CNS meeting will be postponed. Note that the last two items, numbers 8 and 9, are somewhat different from the other items as they treat generic issues rather than provide focus on a single case. These are, however, also forwarded to us by the working group.

Recall that the purpose of these cases is to examine the processes involved in managing the international technology transfer issues and the treatment of their national security and economic aspects. The purpose is not to ask the working group to revisit outcomes. The focus is on the decision making processes with a view to the lessons learned, how the treatment of such issues generally can be improved, and the possible contributions of CNS.

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DATE: February 11, 1998 **PAGES (INCLUDING COVER SHEET): 4 5**

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Vickie

Attached please find a copy of the draft CNS meeting agenda – I've incorporated Dr. Kerri-Ann Jones' changes into it.

I have also attached the draft letter and meeting agenda for the Critical Infrastructure Protection R&D Interagency Working Group. Wes Kitchens has seen the letter and provided his inputs. I am now coordinating the letter with the persons who will sign it – Dr. Jones, Dr. Jacques Gansler, and Dr. Duncan Moore of OSTP. Dr. Jones has already provided her inputs and I have included them in the letter. If Dr. Gansler has comments on or changes to the letter, I will incorporate them.

If you have any questions, please call me.

Thanks,

Steve Rinaldi

DRAFT

Agenda for the Meeting of the
NSTC COMMITTEE ON NATIONAL SECURITY

February 19, 1998
2:00-3:30 PM
Pentagon, Room 3D1019

	Presenter	Time (Mins)
I. INTRODUCTION	Co-Chairs	5
II. STATUS OF CURRENT EFFORTS	Co-Chairs	
• Critical Infrastructure Protection	Dr. Jones	20
• International Technology Transfer	Dr. Jones	20
IV. OTHER BUSINESS	Co-Chairs	
• Humanitarian Demining R&D	Dr. Jones	10
• FY00 R&D Budget Priorities	Dr. Jones	5
V. CLOSING REMARKS	Co-Chairs	5

DRAFT

Agenda for the Meeting of the
NSTC COMMITTEE ON NATIONAL SECURITY

February 19, 1998
2:00-3:30 PM
Pentagon, Room 3D1019

	Presenter	Time (Mins)
I. INTRODUCTION	Co-Chairs	5
II. STATUS OF CURRENT EFFORTS		
• Non-Proliferation and Arms Control Technical Working Group (NPAC-TWG)	Ms. Sallie Mullen ACTD	30
(Presentation by Ms.Sallie Mullen, ACDA, Co-Chair of NPAC-TWG, followed by a discussion. There will be read-ahead material for her presentation. Sallie has asked for 20 minutes for her presentation. The NPAC-TWG Co-Chairs from DOE and DoD will also attend.)		
• Critical Infrastructure Protection	Dr. Jones	~~10~~ 15
(Discussion of the status of this activity led by Dr. Kerri-Ann Jones??)		
IV. OTHER BUSINESS	Co-Chairs	5
(Am unaware of any other business)		
V. CLOSING REMARKS	Co-Chairs	5

695-0005 Vicki Micholson