DOE/OSTI--11671

DE92 000845

TECHNOLOGY COMMERCIALIZATION PROGRAM

References

JANUARY 1992

U.S. DEPARTMENT OF ENERGY, Defense Programs

Available to DOE and DOE contractors from the Office of Scientific and Technical Information, P.O. Box 62, Oak Ridge, TN 37831; Attention: Information Services. For further information, call (615) 576-8401, FTS 626-8401.

Available to the public from the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Rd., Springfield, VA 22161.

TECHNOLOGY COMMERCIALIZATION PROGRAM

REFERENCES

PREFACE

This reference compilation describes the Technology Commercialization Program of the Department of Energy, Defense Programs. The compilation consists of two sections. Section I, *Plans and Procedures*, describes the plans and procedures of the Defense Programs Technology Commercialization Program. The second section, *Legislation and Policy*, identifies legislation and policy related to the Program. The procedures for implementing statutory and regulatory requirements are evolving with time. This document will be periodically updated to reflect changes and new material.

Additional copies are available on request. Requests for copies, and questions or comments should be directed to:

Technology Management Group, DP-4.1
Department of Energy
James V. Forrestal Building
1000 Independence Avenue SW
Washington DC 20585

Telephone (202) 586-8446 or FTS 896-8446

TECHNOLOGY COMMERCIALIZATION PROGRAM

REFERENCES

INTRODUCTION

The Technology Commercialization Program (TCP) is the technology transfer activity of the U.S. Department of Energy, Defense Programs. The Technology Management Group of Defense Programs directs the TCP. The overall mission of this program is to enhance national security by contributing to U.S. industrial and technological capabilities in a manner consistent with Defense Programs primary mission of nuclear weapons development. Technology transfer projects with the commercial and private sector are to achieve the following objectives:

- utilize the technologies and capabilities of the Defense Programs complex;
- support the transfer of high technology skills to the U.S. labor force to create a resource pool for Defense Programs and U.S. industry;
- educate and train future scientists and engineers;
- promote U.S. competitiveness through cost-shared government/industry collaborative activities;
- assure the availability of reliable high technology suppliers to meet Defense Programs needs; and
- maintain the technology base resident within the Defense Programs complex.

The plans and procedures to carry out the program are described in the Multi-Year Program Plan which is contained in Section I of this document. This plan describes the mission of the TCP, charter, organization, guidelines, and planned activities.

These plans and procedures are based on statutory requirements, regulatory requirements and policy directives. Excerpts of selected relevant items are given in Section II.

TECHNOLOGY COMMERCIALIZATION PROGRAM

REFERENCES

SECTION I - PLANS AND PROCEDURES

TABLE OF CONTENTS

TITLE

TECHNOLOGY MANAGEMENT GROUP
MULTI-YEAR PROGRAM PLAN, DECEMBER 1990

PROGRAM MANDATES

TECHNOLOGY TRANSFER CHARTER

INTERIM GUIDELINES

INTERIM CONSIDERATION PAPERS

ACADEMIC REFERENCES

PROPOSAL GUIDELINES (FY 1991)

TECHNOLOGY TRANSFER CONTRACT CLAUSE

TECHNOLOGY COMMERCIALIZATION PROGRAM

REFERENCES

SECTION I - PLANS AND PROCEDURES

TABLE OF CONTENTS

TITLE

TECHNOLOGY MANAGEMENT GROUP
MULTI-YEAR PROGRAM PLAN, DECEMBER 1990

PROGRAM MANDATES

TECHNOLOGY TRANSFER CHARTER

INTERIM GUIDELINES

INTERIM CONSIDERATION PAPERS

ACADEMIC REFERENCES

PROPOSAL GUIDELINES (FY 1991)

TECHNOLOGY TRANSFER CONTRACT CLAUSE

TECHNOLOGY COMMERCIALIZATION PROGRAM

REFERENCES

SECTION II - LEGISLATION AND POLICY

TABLE OF CONTENTS

TITLE

U.S. Department of Energy, *Setting the Course for Technology Transfer at the Department of Energy*, Secretary of Energy Notice. SEN-30-91, 23 January 1991. (Describes DOE mission, goals and strategies for technology transfer; defines management roles and responsibilities.)

Technology Innovation Act of 1980 (Stevenson-Wydler Act), (P.L. 96-480). *Statutes at Large*, vol. 94, part 2 (1980). (Establishes technology transfer as a mission of federal laboratories; requires an Office of Research and Technology Applications at each laboratory.)

Amendments to the U.S. Patent and Trademark Laws (Bayh-Dole Act), (P.L. 96-517). *Statutes at Large*, vol. 94, part 3 (1980). (Allows certain contractors to take title to most Government-funded inventions; exempts DP, but allows for some waivers of title for certain classes of inventions and to waive rights for commercialization purposes.)

U.S. President, Memorandum, "Government Patent Policy," dated February 18, 1983. *Weekly Compilation of Presidential Documents*, vol. 19, no.7, pp. 231-256. 21 February 1983. (Allows for waiver of Government rights to inventions derived from federally-funded contracts, grants or cooperative agreements under certain conditions.)

National Cooperative Research Act of 1984, (P.L. 98-462). *Statutes at Large*, vol. 98, part 2 (1984). (Provides partial relief from Federal antitrust statutes for cooperative activities; limits the penalties assessed to cooperative R&D efforts.)

Trademark Clarification Act of 1984 (Bayh-Dole Amendment), sections 101-104, 301-304, 501, (P.L. 98-620). *Statutes at Large*, vol. 98, part 3 (1984). (Clarifies interpretations of "trademark" and "service mark;" added rights protection for semiconductor chip products.)

Federal Technology Transfer Act of 1986, (P.L. 99-502). *Statutes at Large*, vol. 100, part 2 (1986). (Applies only to GOGO facilities; allows laboratories to enter into CRADAs; establishes employee reward system for royalty sharing and cash.)

TABLE OF CONTENTS (Continued)

TITLE

U.S. President, Executive Order 12591, "Facilitating Access to Science and Technology," *Federal Register*, vol. 52, no. 77. 22 April 1987. (Requires Federal agencies and laboratories to assist universities and private sector to move new knowledge from research into development of new products.)

Omnibus Trade and Competitiveness Act of 1988. (P.L. 100-418) Title V, Subtitle B, part I, subparts A-F, *U.S. Code Congressional and Administrative News*, 100th Congress - Second Session, vol. 1 (1988). (Expands role of NIST in technology transfer; authorization to assist regional centers in transfer of manufacturing skills to industry; establishes Advanced Technology Program to enhance commercialization.)

National Competitiveness Technology Transfer Act of 1989 (Domenici Bill). Division C, Title XXXI, Part C, sections 3131-3133 and Part E, section 3157 of *The National Defense Authorization Act for Fiscal Years 1990 and 1991*, (P.L. 101-189). (Promotes technology transfer between GOCOs and private sector to enhance national security; enhances collaboration between GOCOs and universities and private sector for economic potential development; authorizes CRADAs and establishes technology transfer as DOE laboratory mission; section 3157 amends Atomic Energy Act to include technology transfer as mission of Defense Programs.)

Chapter 23, *Development and Control of Atomic Energy, (Atomic Energy Act)* 42 U.S.C. 2121 (a), *United States Code*, vol. 16, 1988 Edition. (Identifies original Defense Programs missions in the Atomic Energy Act; the missions were expanded to include technology transfer.)

Chapter 23, *Development and Control of Atomic Energy, (Atomic Energy Act)* 42 U.S.C. 2182, *United States Code*, vol. 16, 1988 Edition. (Identifies Government rights to inventions derived from federally-funded contracts pursuant to the Atomic Energy Act; was modified by subsequent legislation.)

Chapter 74, Non-nuclear Energy Research and Development, (*Federal non-Nuclear Energy Act*), 42 U.S.C. 5908, *United States Code*, vol. 16, 1988 Edition. (Identifies Government rights to inventions derived from federally-funded contracts not pursuant to the Atomic Energy Act; was modified by subsequent legislation.)

U.S. Department of Energy, Departmental Management of Science and Technology, Secretary of Energy Notice SEN-33-91, 15 July 1991. (Establishes the Science and Technology Advisor and the Director of Technology Utilization; describes roles and functions in technology transfer.)

TECHNOLOGY MANAGEMENT GROUP MULTI-YEAR PROGRAM PLAN

EXECUTIVE SUMMARY

The Technology Management Group (TMG) oversees the Department of Energy's technology transfer activities in Defense Programs. Within the Defense Programs organization, TMG reports to the Director of the Office of Classification and Technology Policy which is under the cognizance of the Deputy Assistant Secretary for Security Affairs. This Multi-Year Program Plan addresses the current execution year (FY91), the budget year (FY92), the plan year (FY93), and the following four fiscal years (FY94-97).

Begun in FY89, the Defense Programs (DP) Technology Commercialization Initiative is a relatively new activity. Since its inception, TMG has been establishing a foundation of policies and procedures for technology transfer which build upon statutory and regulatory requirements, enable new and creative business arrangements with the U.S. private sector, and assure that the unique national security attributes of DP are carefully addressed.

All policy and programmatic direction for the DP Technology Commercialization Initiative emanates from DOE Headquarters. TMG staff review program and project plans, oversee funding to field elements, review procedures and guidelines to assure acceptability and adherence to Departmental policies, and conduct oversight of field and laboratory technology transfer programs. Field offices oversee technology transfer activities by contractors under their cognizance; DP laboratories are responsible for the execution and management of collaborative projects.

Since technology commercialization projects are cost-shared, it is critical to establish DP as a reliable and committed partner, and to learn how best to work with private sector interests. In the past year, DP has entered into two pilot projects to work with the U.S. private sector: the Specialty Metals Processing Program and the Advanced Manufacturing Initiative. In the current year a request for technology commercialization proposals has yielded over 50 proposals covering a wide breadth of technologies. These proposals, which are now being evaluated, will create significant growth in cost-shared partnerships with U.S. industry over the multi-year program planning period.

Another planned area for program development is the establishment of Technology Deployment Centers. These Centers will serve as a focus within the defense complex for U.S. industry in specific advanced technology areas of mutual interest. Currently in the planning stage, the Centers will build upon the same foundation which has guided the technology commercialization projects: 50/50 resource sharing with industry; utilization of existing laboratory facilities; and, collaboration in areas of mutual benefit.

**OFFICE OF CLASSIFICATION AND TECHNOLOGY POLICY
TECHNOLOGY MANAGEMENT GROUP
MULTI-YEAR PROGRAM PLAN
12/23/90**

I. Introduction

The defense complex spans thirteen states and consists of three national R&D laboratories as well as several production facilities and test sites. With facility assets of over \$100 billion, an annual budget of about \$7 billion (of which more than \$3 billion is for R&D activities), and a highly skilled work force which boasts more than 6,000 scientists and 11,000 engineers, the Defense Programs (DP) complex has much to offer U.S. industry in terms of its resources, technical expertise, and technologies.

DP facilities possess unique capabilities in a broad range of advanced technologies ranging from basic research to precision production techniques. DP is also one of the few federal programs that advances technologies from basic research completely through to product development, testing, and application. This enables the DP facilities to work with private sector partners on both specific problem solving projects and generic R&D for technological advancement. These collaborations also provide the participants with one-of-a-kind training and educational opportunities.

Recently, Secretary Watkins made technology transfer a top Departmental priority (i.e., SEN-11-89). Coupled with recent Congressional actions to enhance the U.S. competitive position, there is strong evidence that technology transfer has become a priority matter in both the Administration and Congress. Using innovative types of business arrangements, DP assets can be leveraged with private resources to enhance national security, strengthen industry capabilities and provide economic benefit. This goal is not incidental to the continued central mission (i.e., weapons-related work) of Defense Programs; on the contrary, technology transfer works in both directions and the DP complex will benefit from these new contacts with American industry in essentially two ways: by fostering new and reliable domestic suppliers and by incorporating new technologies and ideas into work conducted within the DP complex as a result of these collaborations with industry.

The DP Technology Commercialization Initiative is also different from prior government/industry collaborations since it goes beyond simply matching private money. While DP intends to offer personnel, services, and equipment, industry must develop winning proposals that satisfy stringent DP requirements and evaluation criteria. At a minimum, industry proposals must demonstrate that collaborative activities will be of mutual benefit to DP and industry; collaborations will involve generic and pre-competitive technology areas of special interest to DP; and that 50/50 resource-sharing requirements will be strictly adhered to.

The ensuing Technology Management Group (TMG) Multi-year Program Plan (MYPP) encompasses the technology commercialization activities -- managed by the TMG within the Office of Classification and Technology Policy (OCTP) -- of the Defense Programs (DP) Technology Commercialization Initiative. The MYPP addresses the current execution year (FY91), the budget year (FY92), the plan year (FY93) and the following four fiscal years (FY94 through FY97). Underpinned by the DP Strategic Plan and pertinent legislation, it presents the program mission, the mandates on which it is based, and the program envisaged for the achievement of that mission. DP is testing and utilizing new technology transfer mechanisms and collaborating extensively with new industry partners in areas of pre-competitive, generic R&D to provide mutual benefit to the defense complex and to the U.S. private sector.

II. Mission

The mission of the DP Technology Commercialization Initiative is set forth in Section 91 of the Atomic Energy Act; a 1989 amendment to this Section requires the transfer of "federally owned or originated technology to state and local governments, private industry, and universities or other non-profit organizations." In response to this mission requirement, DP intends to utilize the technologies, capabilities, and expertise resident in the entire defense complex -- consistent with DP's primary mission of nuclear weapons development -- to promote national security, enhance U.S. industrial competitiveness, and allow for industry interactions that foster increased technological vigor within the nuclear weapons complex and ensure the protection of sensitive technologies.

III. Program Mandates

The DP Technology Commercialization Initiative has its foundation in a number of legislative mandates, an Executive Order, and internal Departmental guidance. (For a more complete reference of the statutory and administrative mandates guiding Defense Programs' Technology Commercialization Initiative, see Appendix I). The FY 1990 National Defense Authorization Bill (P.L. 101-189) contained two major provisions integral to technology transfer administered by Defense Programs. First, Section 3131 (the National Competitiveness Technology Transfer Act (NCTTA) of 1989) calls for transferring eligible technologies resident in Government-owned and contractor-managed (GOCO) Federal Laboratories to the private sector "consistent with the program missions at those facilities, particularly the national security functions involved in atomic energy defense activities." Second, as stated above, Section 3157 amended the Atomic Energy Act to clarify that technology transfer is a mission of Defense Programs. The NCTTA also authorized the use of cooperative research and development agreements (CRADAs) by DP facilities as an additional tool for technology transfer.

Although this new statutory authority is vitally important, there have been a number of technology transfer mandates in place for the past several years. In fact, the first two major collaborative efforts that have been started under the DP initiative, the Specialty Metals Processing Program and the Advanced Manufacturing Initiative (AMI)

agreements (see Section VII for further details) are based on prior legislative authority and not dependent on the NCTTA; however, the Act is helpful in providing additional legal support for these and other planned arrangements. As for internal guidance, DP has developed several documents that have been instrumental in recent Departmental technology transfer efforts.

The *DP Technology Transfer Charter* (see Appendix II) set the tone and provided the philosophical underpinnings of the DP Technology Commercialization Initiative. It is a consensus document which was developed by the DP Technology Commercialization Steering Group and is based on a thorough review of all available documents (see Appendix VI). Discussions with representatives from other programs in DOE and with representatives from other federal agencies engaged in technology transfer were integral to the development of the DP Charter. The DP Steering Group is a representative body including members from each of the DP weapons laboratories, production plants, and Operations Offices; it was established to provide insight into the technology transfer programs across the DP complex and to make recommendations for enhancing the DOE-private sector relationships. The DP Charter represents the first major action undertaken by the Steering Group so as to establish the framework for technology transfer out of the DP program. The Charter also sets forth a number of program objectives integral to the DP Technology Commercialization Initiative, and has been invaluable in driving the technology transfer process, not only within DP but across various program elements within the Department of Energy.

As set forth in the DP Charter, the DP Technology Commercialization Initiative will emphasize education and worker training and expand ongoing efforts to encourage local educational systems, universities, labor unions, state and local government agencies, junior colleges, trade schools and others to work directly with the defense complex to increase participant interest in science, technology, engineering, and manufacturing. In addition these efforts will emphasize the use of complex facilities and resources to provide hands-on training in areas such as computer literacy and applied engineering.

The *DP Interim Guidelines* (see Appendix III) were a response to field requests for additional guidance on important issues such as conflict of interest, fairness of opportunity, and national security. They identified a series of questions relating to several generic issues confronting DOE technology transfer managers, and established a number of principal technology mechanisms that address the five common types of technology transfer. Not only have they provided specific guidance from Headquarters, they have also conveyed a new management philosophy to field personnel.

The *DP Interim Consideration Papers* (see Appendix IV) were a natural outgrowth of the DP Charter and the DP Interim Guidelines, and address the broad range of issues critical to the effective management of technology transfer including: resource sharing; evaluation and oversight; technology maturation; intellectual property; outreach; and the protection of sensitive data. All elements from the DP complex were involved in the development and refinement of the Interim Consideration Papers so that they effectively address the full range of issues challenging the Department's Operations Offices and Management and Operating Contractors. The Interim Consideration Papers have been

provided to the DOE Technology Transfer Policy Group (TTPG) and are now being used as the basis for the development of Department-wide technology transfer policies. Thus far, this document has provided invaluable interim guidance to Headquarters and field personnel pending the establishment of formal Departmental guidance.

IV. Program Relationships

The DP Technology Commercialization Initiative differs from that of other DOE program offices in several important respects. First, the DP complex has the responsibility for the effective implementation of classification, export control, and security statutes and regulations throughout the complex. Second, DP technology transfer is widely perceived as a *spinoff* activity, which is to say the technologies and capabilities have been developed in support of the nuclear weapons program and are now being applied to the improvement of U.S. industrial competitiveness. Because of this latter mission, the Initiative is viewed as a two-way street where benefits accrue to DP as well as to our private sector partners. The benefits to the DP program fall into three general categories: research results from cooperative projects (one of the factors to be considered in selecting candidate projects is their potential benefit to DP program needs, an issue that will be addressed in Section VI); increased awareness within the DP complex of private sector developments; and increased industry capability and reliability as suppliers in meeting future DP needs.

In view of the Initiative's unique characteristics, its management structure and operating philosophy has been tailored to support the central mission of weapons-related work and to be responsive to the special concerns of private sector partners. In this regard, the program is being funded and managed within DP by an office that is familiar with the unique responsibilities associated with the defense mission as well as the needs of an effective technology commercialization effort. To this end, the DP Technology Commercialization Steering Group, with representatives from all of the DP field offices and facilities, provides the program manager with insight into ongoing programmatic activities and their relationship to commercial requirements. Steering Group meetings have increased the number of interactions and the degree of cooperation within the defense complex. The initiation of cooperative projects involving multiple facilities throughout the complex will further contribute to this intra-complex coordination and cooperation.

Statutory requirements mandate the effective control of classified and sensitive information. This affects the transfer of DP capabilities and technologies as they must undergo reviews for classified and export controlled information. In addition to classified information, Unclassified Controlled Nuclear Information (UCNI) and Operational Security Information, DOE technology transfer activities can result in information subject to U.S. export control regulations. Export Controlled Information (ECI) is that information which could not be lawfully exported by a private person without a license under the Arms Export Control Act, the Export Administration Act, the Atomic Energy Act, or the Nuclear Non-Proliferation Act. There are contractual requirements which require the Department's contractors to identify ECI which is used

in technology transfer and to alert private sector partners to their obligations relating to export control licenses.

The DP Technology Management Group interacts with other DOE program offices engaged in technology transfer to learn from their experiences, to minimize duplication, and to establish joint efforts whenever appropriate. Similar liaison is maintained with the Federal Laboratory Consortium (FLC), other federal agencies (the Departments of Defense and Commerce in particular), and state and local offices engaged in technology transfer related activities.

TMG also works with DOE staff offices such as Policy, Planning and Analysis (PE), General Counsel, and the Controller, to develop policies and procedures consistent with and supportive of the objectives of the DP Technology Commercialization Initiative. DP and PE are currently negotiating a memorandum of understanding (MOU) that delineates various program element functions and clarifies as well as formalizes their mutual participation in Departmental technology transfer activities. The draft MOU establishes PE's responsibility for the development of technology transfer policies in cross-cutting areas which go beyond single program issues and establishes DP's responsibility for the development of policies affecting the defense complex.

Similar agreements involving DP and other DOE program elements are being considered that could result in co-funding of collaborative efforts with private sector partners (e.g., negotiations involving DP and EM on a waste minimization program).

TMG meets with industry representatives to inform potential partners of the DP program, its primary objectives, and the capabilities and technologies resident in the defense complex. The two purposes of these outreach activities are to make the U.S. private sector aware of opportunities to work with the defense complex and to ensure fairness of opportunity to all potential U.S. partners. These outreach activities allow DP to develop new initiatives based on industry needs and inputs that will mutually benefit the defense complex, potential participating organizations, and U.S. industry. Outreach activities will also provide opportunities for industry feedback, an essential mechanism for evaluating the program, on the strengths and weaknesses of the DP program.

V. Program Objectives

The Defense Programs Technology Commercialization Initiative recognizes the increasing importance of economic competitiveness to U.S. national security. Consequently, the DP Technology Commercialization Initiative is focussed on enhancing the U.S. technology base in a manner which complements its basic defense mission by working with all sectors of the U.S. economy: private industry, the labor force, and the educational system. A number of principal objectives characterize the distinctive qualities of the initiative, including:

- *Maintaining the technology base resident within the Defense Programs*

complex;

- *Assuring* the availability of reliable high technology suppliers to meet Defense Program needs;
- *Supporting* the transfer of high technology skills to the American work force so as to create a resource pool of highly skilled talent that can be tapped both by Defense Programs and U.S. industry; and
- *Promoting* U.S. competitiveness through joint, cost-shared, and collaborative activities.

Now that a foundation for cooperative arrangements is in place, DP is implementing a technology transfer action plan. If the DP Technology Commercialization Initiative, is to be genuinely successful, commercial sector utilization of federal R&D resources will require modification of existing practices and increased awareness among federal researchers of industry's technology requirements. It will also entail forging new linkages between government, academia, and industry to facilitate technology transfer. The successes the initiative ultimately achieves will be instrumental in transferring unclassified technologies and capabilities from the DP complex into the mainstream of the U.S. industrial economy.

VI. Program Strategies

In the course of formulating the DP Technology Commercialization Initiative, a number of the major studies, reports, and books dealing with the subject of U.S. industrial competitiveness were carefully reviewed (see Appendix V). Based upon the findings, conclusions, and recommendations of these documents, some important program strategies have been established to facilitate the continued implementation of the DP program. These include:

- requiring substantial industry cost-sharing, preferably at the 50/50 level, to ensure projects are market driven and that resource leveraging is maximized;
- developing clear measures of success and building on them
- maintaining close liaison with the defense complex to accurately determine their needs and promoting generic manufacturing R&D;
- learning from what others have done and are doing -- not only other DOE program elements, but other agencies, private industry, trade associations, academia, labor unions, and foreign interests as well (e.g., the Fraunhofer Institutes in Germany);
- increasing the number of cost-shared collaborations (refer to Figure 1) with groups of companies -- including consortia -- in technology areas as contrasted with specific technical projects;
- increasing the technical capabilities that DP brings to the initiative by combining the efforts of appropriate facilities in the DP complex and by joining with other DOE programs such as EM, CE, or ER as well as other federal (e.g., NIST's Manufacturing Technology Centers) or state and local agencies;
- assuring that technology transfer activities are not only consistent but symbiotic with the traditional DP mission of nuclear weapons development and protecting classified, sensitive, and export controlled information; and
- establishing an aggressive outreach program to inform and involve both internal and external audiences of the Technology Commercialization Initiative, thus assuring fairness of opportunity to all potential participants while supporting program growth and development.

These collaborations will provide substantial technical benefits to both DP and the private sector and foster improved scientific and technical literacy skills of students and

**The Vision: To leverage our resources
as never before**

Figure 1

workers participating in DP collaborative projects. Although they will be market driven, they will also be managed in a manner that promotes U.S. national interests to the maximum extent possible (see DP Interim Consideration #5 in Appendix IV which provides the basis for current DOE policy in this area). Contractual and administrative mechanisms will also be used to encourage all segments of the complex, including production plants, to participate in the initiative, and program activities will be evaluated on an individual and collective basis to assess the effectiveness of the DP Technology Commercialization Initiative.

The protection of sensitive and classified information (including export controlled) is an integral component of the DP Technology Commercialization Initiative, and the establishment of effective program strategies relating to this important function is critical. In conducting technology transfer activities, maintaining technology security is vitally important. Thus, the TMG is responsible for providing policy guidance to DOE Headquarters, field offices, and laboratories relating to the control of sensitive information (as referenced in DOE Order 1240.2A). The TMG must also provide technical guidance to the Office of Scientific and Technical Information (OSTI), including oversight of the management of the National Energy Software Center, and offer insights on international agreements relating to scientific and technical information policies and procedures. The control of foreign national visits and assignments as well as foreign travel also falls under the TMG's purview. This program responsibility also has the dual advantage of permitting the office, which is intimately aware of the sensitivities involved with technology transfer activities being conducted, to determine whether to permit foreign visits and assignments and to provide expert counsel to U.S. researchers on the potential benefits to the U.S. of two-way information flow.

As for the implementation of these strategies, contractors and laboratory detailees will support Headquarters and field personnel by providing invaluable technical, analytical, and liaison support to the program on a day-to-day, ongoing basis. DP Technology Commercialization Initiative successes will also require the creation of special accounts at principal DOE contractor sites similar to the technology transfer account already established at the Oak Ridge National Laboratory. The concept calls for providing seed money for the initial establishment of accounts, particularly for DP production plants, which may be repaid over time by monies returning to the contractor organizations from technology transfer activities. The monies returning to these accounts will also be used to support further technology transfer activities, as well as for awards and incentives. The long-term objective for technology commercialization within DP is to bring in substantial private sector support to bolster the resources available to the defense complex and to ultimately make market-driven collaborations self-sustaining.

VII. Program Status & Outlook for the Future

To facilitate the technology transfer process, DOE has moved toward greater decentralization while maintaining its critical oversight function. Under this arrangement, Defense Programs relies heavily on its field offices, laboratories, and production plants to provide technical expertise and assistance while engaged in

collaborative activities with industry. As currently envisaged, the DP Technology Commercialization Initiative will focus on cost-shared, collaborative activities with industry that facilitate the optimal leveraging of DP and industry resources (see Figure 1). While private sector groups will provide direct funding, DP will offer its unique blend of expertise as well as personnel, services, and equipment to ensure successful collaborations. As projects are selected, the proportion of resource sharing will be based on benefits to both parties. Based on its tremendous research facilities and its vast technical know-how, the DP's activities will avoid competition with private sector technology developments. Rather, collaborative efforts will provide mutual benefit and complement the individual characteristics and capabilities of both DP and industry.

Presently, the DP Technology Commercialization Initiative has two major thrusts: cooperative ventures and program development activities. The following discussion differentiates between the two, and provides substantial details of present and planned activities in each area.

COOPERATIVE VENTURES

These activities will focus on new and innovative mechanisms to effect the flow of technology from DP laboratories and production plants into the private sector. Some of these technology commercialization mechanisms include the following:

- *Major Technology Initiatives.* Currently, these include the Advanced Manufacturing Initiative (AMI) and the Specialty Metals Processing Consortium (SMPC) at Sandia National Laboratory. DP will pursue additional initiatives as industry interest warrants and program resources permit.
- *Special Cooperative Projects.* Defense Programs has invited its laboratories to work with private-sector partners to prepare proposals for collaborative projects. Over 50 proposals have already been received in FY 1991, a 25-fold increase over 1990. Technologies with the potential to enhance national security and that industry believes will strengthen their commercial competitiveness are being identified and evaluated. Several exciting and commercially valuable technologies have emerged, and several will be funded during the current fiscal year.
- *Technology Deployment Centers.* These would be established at the weapons laboratories and have a common central charter with common policy guidelines. They would, however, have their own unique characteristics and management styles. The intent is to establish a number of research Centers focussed on advancing the state of technology in areas of mutual interest to DP and industry where external interests can join with DP laboratories or production plants to improve U.S. industrial competitiveness. The Centers will also emphasize cost-shared, collaborative R&D in areas where DP laboratories and production plants possess unique capabilities and expertise, utilizing existing facilities to the maximum extent possible. In this way, resources will be channeled into

collaborative research rather than facility construction.

Major Technology Initiatives

Specialty Metals Processing Consortium (SMPC). In FY 1990, the DOE established this pioneer program at Sandia National Laboratory. It was formed to advance the state of the art in a critical field where the U.S. has recently lost considerable ground to foreign competition. The Program is expected to be instrumental in providing reliable domestic suppliers for specialty metal products for DP, thereby reducing our dependence on foreign suppliers. Research is now being conducted at various facilities within Sandia's Melting and Solidification Laboratory Complex. The focal point is Sandia's 310 kWe electron beam melting furnace, the only one of its size in the U.S. that is dedicated for research applications. The Specialty Metals Processing Consortium (SMPC) is presently comprised of fourteen companies, and was established by industry under the auspices of the National Cooperative Research Act. The SMPC has recently entered into a contract with the DOE Albuquerque Operations Office (ALO) who is charged with administering and overseeing the Program for the Department.

The contract between ALO and SMPC explicitly states that proposed areas of research must be mutually agreed to by the Consortium and the Sandia National Laboratory, and implemented through Project Letter Agreements. Projects will be industry driven and provide mutual benefit to DP and industry. In addition to DOE support, fourteen industrial participants have pledged a combined \$700,000 per year for the next five years to support SMPC activities. Results are shared among SMPC members; however, external release of such data will be withheld until three years after the date it is distributed to program participants, unless all parties agree to an earlier release. Current activities are focussed on improving the production of specialty metals and alloys as well as the manufacture of specialty metals process equipment. These activities will also be instrumental in providing hands-on training for industry interns and university graduate students.

Advanced Manufacturing Initiative (AMI). This unique undertaking forges a pivotal alliance between DP and U.S. manufacturers from virtually every major industry. Its fundamental purpose is to engage in cooperative ventures deemed strategically important to the nuclear weapons complex and beneficial to industry. AMI is of strategic importance because of its potential for advancing state-of-the art manufacturing capabilities and techniques critical to the nuclear weapons program. AMI's goal in this and future efforts is to provide for the rapid advance of DP and U.S. manufacturing capabilities. It encompasses all manufacturing-related activities within the defense complex, ranging from improving machine tools, to higher precision machining and advanced quality control methods. AMI's collaborative framework and management structure will help to ensure sensitivity to the needs of both DP and industry. Manufacturing technologies, skills and know-how -- an area of particular strength and interest across the defense complex -- will be enhanced through the complex-wide involvement envisioned under the AMI. As the program continues to evolve, various pilot operations and nationwide problem-solving services, training, and educational

programs will be conducted at major DOE/DP facilities.

The first effort under this initiative involves the National Center for Manufacturing Sciences (NCMS), the largest R&D consortium in the U.S. with over 100 U.S. manufacturing member firms. Working in partnership with NCMS has the potential to provide several opportunities in entirely new technological areas, not only because of the Consortium's diversified membership base, but because of its commitment to enhance the manufacturing capabilities of its members. Though DOE's arrangement with NCMS appears particularly promising, it is by no means the sole catalyst driving the Advanced Manufacturing Initiative. Rather, it is but one of many potential cooperative arrangements involving private industry, academia, trade associations, labor unions, and others under AMI.

Other Major Technology Initiatives. From FY 1994 through FY 1997, DP intends to enter into several new initiatives in other critical technology areas -- such as advanced materials, robotics, and supercomputers -- that will involve not only the private sector but other government agencies. Within DOE, there will be increased cooperation and coordination between DP and other program elements in areas of mutual interest including environmental restoration and waste management (EM) and energy conservation (CE). These activities will provide invaluable experience with new technology transfer mechanisms and facilitate the development of cooperative relationships with industrial partners.

Special Cooperative Projects

From FY 1990 to FY 1991, the DP Technology Commercialization Initiative has experienced dramatic growth, particularly in terms of the number of potential industry partners (refer to Figure 2). In FY 1990, DP invited its laboratories to identify new and innovative opportunities to utilize the expertise, skills, and capabilities that reside in the DP complex -- in cooperation with industry partners -- to enhance industrial capabilities in areas critical to both DP and the nation's technological needs. Over 50 proposals were received in response to the request, and the growth in industrial partnerships over the multi-year program planning period is expected to continue upward as illustrated in Figure 2. These technology commercialization proposals are undergoing a three-phase review: first, a peer review conducted by an independent laboratory outside of the Defense Programs complex; second, a peer review conducted by scientists and engineers from the DP complex who are familiar with ongoing programs; and third, a final review by Defense Programs to determine how closely they meet the goals of the Technology Commercialization Initiative and to ensure the coordination of related activities across the DP complex.

Each proposal is reviewed individually and scored according to six basic criteria: benefit to national security; private sector support; technical viability; benefit to the U.S. economy; educational/training component; and structure/management plans. Non-technical proposals do not receive a score for technical viability; the other criteria are weighted more heavily to adjust for this (see Appendix VI for detailed information on

The Vision: Growth in Industrial Partnerships

Figure 2

the proposal review process). The proposals received cover a wide breadth of technologies that could be developed -- from manufacturing and machining to electronics, computers, and outreach. Examples of three exceptional candidate projects, which meet proposal criteria, are as follows:

- X-Ray Tomographic Microscopy. This technology has the potential to analyze defense nuclear waste treatment for DP by allowing for non-invasive, three-dimensional visualization of microstructures, for use in non-destructive inspection and advanced materials characterization. It will also provide a useful quality assurance capability in DP high-precision, high-reliability manufacturing complex. From industry's perspective, the technology will provide a capability to address fundamental questions in advanced composite fabrication, secondary oil recovery, and fundamental materials studies. It will also permit the observation of microstructural changes in materials while they are occurring.
- Recycling Waste Acids. This proposal has the potential to facilitate commercialization of a DP-developed waste acid recycling technology, which eliminates the need for disposal of toxic acids, for use in pollution prevention and waste minimization. DP would acquire the capability to reuse acids used in DP manufacturing facilities in metal finishing, etching, and other chemical processing operations and in reprocessing spent fuel from plutonium production reactors. This technology has the capability of converting waste acid discards into reusable products. Industry will benefit from the reduction in the amount of metal-bearing toxic sludge generated by the chemical, pulp and paper, metal finishing, and mineral processing industries resulting from the commercial application of the technology while at the same time reducing the amounts of chemicals which need to be purchased (due to recycling).
- Synthetic Diamond Substrates. This proposal has the potential to develop the engineering procedures necessary to produce diamond substrates for electronic multi-chip packaging. These procedures will lower operating temperatures resulting in higher data transmission speeds and increased reliability. From DP's perspective, the technology will permit an additional degree of miniaturization and weight reduction in electronic systems required for defense while providing an electronic material with improved reliability and radiation hardness. Substrate manufacturers, on the other hand, will be able to produce additional electronic substrate material that can be used in the manufacture of high-frequency, high-density electronic circuits. The technology may also provide electronic circuit manufacturers a capability for packaging smaller, more reliable electronic systems.

For the proposals that do not receive funding, a list of suggested improvements (generated from reviewer's comments) will be sent to submitting organizations. Applicants will be encouraged to resubmit a revised proposal, and to this end, "strike teams" of experienced personnel will be organized to assist them with improving the proposals to the point where they meet the criteria. Subject to the availability of funds in FY91, the proposal then will be reconsidered.

Technology Deployment Centers

In response to industry requests, DP is considering the establishment of Technology Deployment Centers that would facilitate interactions between DP and industry and promote vigorous interchange and cross-fertilization of ideas in selected areas of technology. During the next few months, DP will conduct a feasibility assessment that, among other things, will examine the merits of establishing one or more Centers at each of the major nuclear weapons laboratories. As previously mentioned, these would promote cost-shared, collaborative activities and serve as repositories of technical expertise focussed on specific technology areas. DP's goal is to work with industry to advance promising technologies emanating from the national laboratories. Universities would also be encouraged to participate and graduate students, post doctorates, and university professors would be provided opportunities to participate in Center activities. The Centers would also provide opportunities for businesses, labor unions, and state and local governments to participate in training and educational activities.

The Centers would be spearheaded by the sponsoring laboratory and governed by the following principles (among others):

- require 50/50 cost-sharing with industry
- focus on existing areas of technical expertise and capabilities
- utilize existing laboratory facilities
- driven by industry interest and support
- involve a limited number of permanent laboratory staff
- solicit laboratory, industry, and university experts

Where Center activities correspond with the subject matter of one or more of the major initiatives previously mentioned, the Center will assume responsibility for technical management/coordination of those initiatives. DP plans to establish a number of such Centers in selected areas of technology such as advanced materials, robotics, lasers, microelectronics, computers, and optoelectronics.

- *PROGRAM DEVELOPMENT ACTIVITIES*

Based upon statutory requirements to provide Laboratory directors with responsibility for technology transfer activities, and consistent with Departmental policy to speed up the process, technical considerations related to collaborative activities will be decentralized. Such issues are best addressed by program field offices and DP laboratories and production plants; however, all policy and programmatic direction for the DP Technology Commercialization Initiative emanates from Headquarters. TMG staff review program and project plans, oversee funding to field elements, and review procedures and guidelines to assure acceptability and adherence to Departmental policies. Generally, these activities will ensure that the direction of the Technology Commercialization Initiative is overseen by Headquarters, and that the program is complex-wide to include

and benefit all field elements. Program Development activities are integral to the overall administration of the DP Technology Commercialization Initiative. The following discussion provides important details on current and future program development activities.

Independent Oversight. As the DP complex initiates technology transfer activities with the private sector, there will be significant increases in the revenues generated. Thus, there is a need for independent oversight and auditing comparable to the independent auditing of private companies. To assist in the development of the specific nature and scope of this independent oversight activity, a study will be initiated in FY 1991 to determine how other government agencies conduct their independent oversight/auditing activities. Following its completion, the study will produce recommendations for senior DOE management on the establishment of an independent DP oversight function toward the beginning of FY 1992.

Evaluation Program. Beginning in FY 1991, DP will develop an evaluation program that will provide for the assessment of various technology transfer mechanisms utilized under the Technology Commercialization Initiative. The program will also help to identify tangible measures of success. As for effective internal control procedures, each DP laboratory, production plant, and test facility involved in the initiative will be directed to establish qualitative and quantitative criteria that provide tangible measures of success. Mechanisms for oversight shall be instituted at appropriate laboratory, facility, field office, and Headquarters program management levels to fully utilize existing oversight procedures (such as institutional planning and annual laboratory appraisals). Finally, measures of overall program success will include milestones achieved (i.e., licenses or patents issued as a result of CRADAs), and notable deliverables related to technology transfer activities.

The Technology Commercialization Initiative Steering Group. This organization consists of experienced professionals from the Department's DP operations offices, weapons laboratories, and production facilities. They meet on a quarterly basis to make suggestions and recommendations on potential improvements, and to review and approve technology enhancement projects. It is envisaged the communication of policy will be done through a series of workshops for DOE staff, laboratory and M&O contractor personnel, and industry representatives. These workshops provide for the full and active participation of complex personnel and are conducted in accordance with DOE's policy guidelines. Workshops will also be instrumental in communicating DOE and DP policies to industry participants, and encourage the open discussion of concerns and issues relating to the program. The first meeting in 1991 will be held in January at Lawrence Livermore National Laboratory (LLNL).

Outreach Program. In addition, an aggressive, nationwide outreach program will be established to ensure potential industry partners, other interested parties, and the general public are aware of opportunities residing in the DP complex. This will require increased coordination among DOE program elements and field offices engaged in technology transfer, a continuous exchange of ideas between Headquarters and laboratory personnel, and dissemination of program-related information integral to the

overall success of the Technology Commercialization Initiative. Headquarters will coordinate the overall national effort, focussing on the complex as a whole. The laboratories and production plants will be encouraged to expand their local outreach efforts and to coordinate with Headquarters to initiate or broaden national ones; indeed, the success of the Technology Commercialization Initiative will depend directly on this laboratory activity.

VIII. Program Resources

Since it is a relatively new program, the DP Technology Commercialization Initiative -- and the Technology Management Group which manages it -- has only recently been established. To respond to growing statutory and administrative requirements, staffing levels must increase dramatically from FY 1991 to FY 1992. In addition, budget resources required for the duration of the plan are projected to increase significantly. The staffing levels being requested are considered necessary to maintain DP's responsiveness to its rapidly expanding technology transfer mission. The following table provides staffing and budgeting estimates for the period covered by the MYPP:

STAFF & BUDGET PROJECTIONS (in \$000s)

	FY91	FY92	FY93	FY94	FY95	FY96	FY97
FTEs	8	32	36	40	40	40	40
Funding	20,000	32,000	50,000	60,000	66,000	75,000	85,000

The rapid increase in staffing levels from FY 1991 to FY 1992 reflects the immediate need to build up headquarters' capability to assure that the program is managed in accordance with the mandates, objectives, and strategies presented in the plan. In particular, additional capabilities are needed for oversight and evaluation; new project development; outreach as well as external liaison and coordination; establishing and updating Technology Commercialization Initiative policies and procedures; and developing guidance to the field on infrastructure development. The growth in FY 1993 and FY 1994 reflects the incremental increases needed to further develop the capabilities previously noted and to accommodate the additional workload created in response to the budget increases.

The proposed funding and staffing levels are founded on the following indicators of program growth: that the number of laboratory initiated CRADAs will grow to several hundred through the period covered by this plan; that the Advanced Manufacturing Initiative will expand to include additional industrial consortia (in addition to NCMS); that there will be several major new technology initiatives created in areas such as advanced materials, robotics, computing, etc.; and that as many as three or four

Technology Deployment Centers will be established in the laboratories focussing on specific areas of technical expertise which industry identifies as critical.

IX. Issues and Opportunities

A number of issues have been identified that once resolved will provide an excellent opportunity for the DP Technology Commercialization Initiative to flourish. They include:

- **ESTABLISHMENT OF A DP ADVISORY BOARD**

One of the challenges facing the DP Technology Commercialization Initiative is to make industry sufficiently aware of DP technology transfer efforts, and to involve private sector partners early enough in the technology development process to play an active role in subsequent collaborative activities. The creation of a DP Advisory Board presents an opportunity to draw from the expertise of key representatives from the U.S. national security and industrial communities as well as those from the various academic fields and organized labor. The Advisory Board would provide recommendations for strategic objectives, program organization, and overall programmatic counsel. Early industry involvement will help to ensure that program decisions are indeed market driven. DP is already in the process of examining the functions of other federal advisory boards, learning from their experiences, and investigating the statutory requirements (e.g., The Federal Advisory Committee Act, P.L. 92-463) and administrative procedures (e.g., GSA Implementing Regulations and DOE Orders) governing their establishment and conduct. Potential members are being identified, and the TMG is hoping to select charter members in FY 1991.

- **ESTABLISHING DP AS A RELIABLE COLLABORATIVE PARTNER**

The Congressional and Secretarial level support for the DP Technology Transfer Initiative are creating an opportunity to establish DP as an enthusiastic and reliable partner to industry in commercializing the technologies residing in the complex. In the past, the U.S. private sector has been reluctant to invest resources in working with federal agencies. In FY 1990, DP undertook a number of pilot projects to learn how to work with the private sector and to demonstrate its reliability and commitment as a partner. During FY 1991 a large number of ties will be cemented between DP and private sector partners through the DP technology commercialization proposal process. In tandem with an effective outreach program, the technology commercialization projects will establish DP as a reliable partner to the U.S. private sector.

- **ADAPTING TO A NEW MISSION**

Secretary Watkins leadership in support of a strong technology transfer mission for the Department necessitates change and adaptation across the DP complex. Traditionally, the laboratories have been encouraged to disseminate unclassified scientific and technical data; individuals have been rewarded for the general publication of unclassified research results. The laboratories' orientation towards publishing has not emphasized the protection of commercially valuable research results through patents or other means. DP is changing the incentives to its laboratories and their researchers so as to maximize the contributions that the DP complex can make to U.S. industrial competitiveness. Consequently, contractor management and researchers are becoming more aware that their research results -- if properly directed, protected, and exploited -- can contribute to the advancement of U.S. national security, both by producing improved nuclear weapons and by enhancing U.S. industrial competitiveness.

- **INDUSTRY ACCESS TO DP FACILITIES**

Currently, technology transfer efforts within the DP complex are handicapped by the need for security clearance or full-time escorts for industry representatives to gain access to many areas of the facilities. Industry access to both people and facilities must be made easier if the program is to achieve its full measure of success. Furthermore, in an attempt to provide additional security for classified work that is performed on a daily basis throughout the complex, efforts are currently underway to move facilities involved in collaborative work with industry "outside the fence" at Y-12, SNL, LANL, and LLNL.

- **CONTRIBUTION OF THE DP PRODUCTION PLANTS TO THE TECHNOLOGY COMMERCIALIZATION INITIATIVE**

The DP Production Plants have significant capabilities and experience in applied engineering and manufacturing technologies which could be of substantial benefit to U.S. industry. At the present time, however, no clear mechanisms exist for financially supporting the technology transfer activities at the DP Production Plants. Such activities include continued development of pre-competitive technologies and outreach programs, support for technology commercialization staff, patenting and licensing, and other functions required to collaborate effectively with industry and transfer technologies to the U.S. private sector.

In particular, DP will develop the necessary policies and procedures -- consistent with DOE requirements -- for designating an apportioned amount of the plants' annual production and safeguards (P&S) operating budget for technology transfer and identifying allowable and necessary costs to actively participate in this new DP mission. Furthermore, the M&O contracts governing plant operations do not, in most cases, specifically permit the conduct of technology transfer as an

authorized activity under the contract. In FY 1991, DP has an opportunity to modify the M&O contracts for its production plants so as to enable them to participate in technology transfer activities, thus utilizing the full capability of the DP complex in the Secretary's technology transfer initiative.

- **BETTER DEFINING SENSITIVE TECHNOLOGIES AND INFORMATION WHICH MUST BE PROTECTED**

There is a continuing need to better define that technology which requires protection against public disclosure and foreign access, and the establishment of priorities for such protection. In connection with this requirement, the issue of how DP's emerging -- and Congressionally mandated -- technology transfer mission may impact technology security must be addressed. It is anticipated the OCTP Classification Study will provide significant insights into the risks and benefits associated with DP technology transfer activities, and that its findings will result in improved procedures for identifying and protecting sensitive, classified, and export controlled information and bring the Department one step closer to resolving this delicate issue.

- **PROTECTION OF COMMERCIALLY VALUABLE INFORMATION**

The NCTTA of 1989 provides that information developed under CRADAs may be withheld from public disclosure for up to 5 years. Similar restrictions may be applied to the dissemination of information developed under other cooperative programs jointly funded by DOE and industry. This permits the participating industrial partner(s) to gain a time advantage over non-participating competitors in the commercialization of the technology, and is a major factor in the decision by industry to commit the resources needed for product development and marketing. There is no comparable protection for information which is deemed to have commercial value and is developed under programs which are fully funded by DOE program elements in fulfillment of their normal program missions. Open disclosure of such information not only decreases its commercial value to U.S. industry but permits foreign competitors to exploit it, often with their government's assistance. Legislation which made it possible to protect program generated data perceived to be commercially valuable from foreign interests would contribute to the pool of data already available to U.S. industry and potentially improve U.S. competitiveness.

X. Conclusion

As stated earlier in the plan, the National Competitiveness Technology Transfer Act of 1989, enacted in November 1989, clarified the technology transfer mission of Defense Programs; however, it is only now being implemented and the job is far from finished. The 1990s will present enormous challenges and represent a period of significant transition for the entire complex. As this evolution occurs, the way we view national security and DP's contribution to the national defense must similarly evolve and remain flexible. Together, DP and the Department will respond to these exciting challenges and begin to *make things happen* that will ultimately provide mutual benefit to the defense complex and U.S. industry.

APPENDIX I

DEFENSE PROGRAMS TECHNOLOGY TRANSFER PROGRAM MANDATES

FEDERAL STATUTES

- The *Stevenson-Wydler Technology Innovation Act of 1980* officially established technology transfer as a mission of Federal laboratories in order to improve the economic, environmental and social well-being of the U.S. It required that all Federal laboratories establish an Office of Research and Technology Applications (ORTA) to coordinate technology transfer efforts.
- The *Bayh-Dole Act of 1980*, as amended, allows certain contractors, including non-profit operators of government-owned laboratories, to elect to take title to most Government-funded inventions developed under the contract. DP was exempted from this legislation although DOE was authorized to grant waivers of title for certain classes of inventions within DP activities as well as to waive rights to large for-profit contractors for commercialization purposes.
- The *National Cooperative Research Act of 1984* was passed in response to Congressional and Administration attempts to stimulate technological innovation, foster successful cooperative research and development efforts among competitive interests in the commercial marketplace, and enhance U.S. trade and competitiveness. The Act provides partial relief from federal antitrust statutes for those engaged in such cooperative activities. It accomplishes this by restricting the "potential arbitrary application" of antitrust laws and limiting the penalties that can be assessed to cooperative R&D efforts that are determined to be in violation of such laws.
- The *Federal Technology Transfer Act of 1986* was enacted to improve the flow of technologies with potential commercial application from the Federal laboratories into the private sector. According to the Senate Report accompanying the bill (S. Rpt. 99-23), the FTTA allows "the Federal laboratories to enter into [cooperative research and development agreements (CRADAs) with private industry, universities and others and] establishes a dual employee reward system of royalty sharing and cash awards." The FTTA also established the Federal Laboratory Consortium as a second tier federal agency charged with overseeing technology transfer involving federal laboratories. The Act only applies to Government-owned Government-operated facilities (GOGO).
- The *National Competitiveness Technology Transfer Act (NCTTA) of 1989*, the stated purpose of which is to:
 - *enhance United States national security by promoting technology transfer between Government-owned, contractor-operated (GOCO) laboratories and the private sector in the United States; and*
 - *enhance collaboration between universities, the private sector, and GOCO laboratories in order to foster the development of technologies in areas of*

significant economic potential.

In addition, the NCTTA requires DOE to offer to modify its laboratory M&O contracts (including those for DP laboratories); authorizes contractor-operators to enter into cooperative research and development agreements (CRADAs); and to establish technology transfer as a laboratory mission. The Act also establishes stringent time limits for DOE review and approval of CRADAs, and provides that information generated under a CRADA may be withheld from public disclosure for up to 5 years.

- Section 3157 of the FY 1990 National Defense Authorization Bill (also P.L. 101-189) amended the Atomic Energy Act of 1954 to clarify that technology transfer is indeed a mission of DOE Defense Programs.

OTHER PROGRAM MANDATES

- Executive Order 12591 of April 10, 1987 ("*Facilitating Access to Science and Technology*") requires that "Federal agencies and laboratories assist universities and the private sector in broadening our technology base by moving new knowledge from the research laboratory into the development of new products and processes."
- The Defense Programs Technology Transfer Charter, approved by the Assistant Secretary for Defense Programs on June 21, 1989, spelled out the objectives of the DP Technology Commercialization Initiative as follows:

To enhance U.S. national security by contributing to our industrial and technological base through programs which provide opportunities for:

- *U.S. industry to utilize the technologies and capabilities residing in the DP complex.*
- *The U.S. labor force to upgrade and enhance its technical skills and capabilities in coordination with industry.*
- *The American educational system to increase technical literacy in this country and develop the skills of our next generation of scientists and engineers.*

The charter also states that "an opportunity exists to use those resources residing in the DP facilities to promote technology commercialization while, at the same time, enhancing the primary national security mission [of the nuclear weapons complex]. Cross-fertilization will increase our exposure to external technology which can accelerate innovation and increase efficiencies within DP facilities." This clause clarifies the need to pursue activities that have the potential to provide mutual benefit to industry and the DP complex. Finally, the charter cites a series of principles that underpin and guide the Technology Commercialization Initiative.

TECHNOLOGY TRANSFER CHARTER

FOR

DEFENSE PROGRAMS

June 21, 1989

PREAMBLE

- Technological advancement is a key component in the growth of the U.S. industrial economy and a strong industrial base is also an essential element of U.S. national security.
- Studies sponsored by industry and academia report convincing evidence of declining U.S. competitiveness in both domestic and international markets, despite America's lead in technology innovation. Some of these studies have also reported statistics indicating trends with long term consequences for U.S. competitiveness. These trends include lower rates of productivity among America's skilled laborers and decreasing interest and declining performance in scientific and technical disciplines among American students.
- Congress and the President have directed that programs be initiated to encourage and facilitate the transfer of federally funded technology to the private sector to enhance U.S. industrial competitiveness.
- The DP laboratories, test sites, and production facilities involved in national security activities possess capabilities in a broad range of advanced technologies covering the spectrum from basic research to precision production techniques. They also possess unique problem solving capabilities as well as a large pool of highly skilled scientists, engineers and technicians who could contribute substantially to our economic advancement.
- While basic research is still essential for continued, long-term advancement, innovation and the rapid application of new technology is assuming a more significant role in near-term, marketplace success.
- The governments of other industrialized countries, recognizing this change, have moved to encourage and facilitate their industry's rapid exploitation of technology for the development of new commercial products and processes.
- As a result, U.S. industry faces increasingly intense foreign competition which has challenged our economic position and impinged on our national security.

- The U.S. continues to devote more federal funds to the support of R&D than any other country. However, almost 70 percent of that effort currently supports military R&D. Over the last decade, military R&D has only incidentally yielded commercial spin-off technologies. We must find ways to better utilize this substantial investment of federal dollars and scientific manpower and increase its contribution to the technological advancement of our commercial sector.
- Improving commercial sector utilization of Federal R&D resources will entail modifying our practices, increasing our appreciation of industry's technology requirements and forging new linkages that facilitate technology flow. This flow need not and should not be unidirectional.
- An opportunity exists to use those resources residing in the DP facilities to promote technology commercialization while, at the same time, enhancing the primary national security mission. Cross-fertilization will increase our exposure to external technology which can accelerate innovation and increase efficiencies within DP facilities.
- An opportunity also exists to utilize the capabilities of the DP complex to enhance the skills of the U.S. labor force and the science and technology programs of our educational institutions.
- DOE and DP management have endorsed the establishment of a vigorous DP initiative in conjunction with the broader based Departmental program, to take advantage of these opportunities.

OBJECTIVE

To enhance U.S. national security by contributing to our industrial and technological base through programs which provide opportunities for:

- U.S. industry to utilize the technologies and capabilities residing in the DP complex.
- The U.S. labor force to upgrade and enhance its technical skills and capabilities in coordination with industry.
- The American educational system to increase technical literacy in this country and develop the skills of our next generation of scientists and engineers.

PRINCIPLES

- A vigorous technology transfer effort shall be complementary to and supportive of DP's primary national security mission.

- Technology transfer efforts shall be acknowledged as a primary activity in support of the mission of the DP complex and will be evaluated.
- Incentives should be provided to promote technology transfer related efforts.
- The Secretary of Energy has management authority and responsibility for the Technology Transfer Program.
- The DP Technology Transfer Program will build upon the decentralized DOE management structure and will capitalize on the unique relationships between DP and its management and operating contractors.
- DOE Headquarters maintains broad oversight and policy guidance; DOE field offices provide oversight, program coordination and approvals and the facility contractors conduct the technology transfer program.
- Activities will comply with applicable laws and regulations.
- Preference will be given so that the principal benefits resulting from the technology transfer efforts flow to the U.S.
- The DP Technology Transfer Program must be conducted in a manner that provides "fairness of opportunity".
- Industry participants will bear the costs of technology transfer activities commensurate with the benefits derived.
- Revenues derived from technology transfer activities will be fed back into the program to enhance the technology transfer effort.
- Speed and certainty in the decision making process are critical to success and must be assured.
- The DP Technology Transfer Program will delegate authority to the lowest appropriate level.
- Research results will continue to be broadly disseminated to further the advancement of science and encourage innovation.
- Both classified and unclassified sensitive information must continue to be fully protected.
- Procedures must be developed that include a DP oversight role to identify and withhold commercially valuable government information from public dissemination while, at the same time, assuring the continued free flow and use of this information within the DP complex and release of appropriate research results to the public.

- Procedures must be developed to protect proprietary industrial information.

APPROACH

- Inform the Secretary of Energy, Field Offices and facility heads of the DP technology transfer policy.
- Integrate this effort with the Office of Energy Research's ongoing R&D Laboratory Technology Transfer Program for the Department.
- Formalize mechanisms for coordination with other DP and DOE program offices
- Identify where laws or the interpretation of laws are in conflict with or inconsistent with program objectives, and propose appropriate remedies.
- Establish or amend necessary orders, guidelines and operating procedures to assure facility management and DOE that actions related to commercialization efforts are implemented in a timely, fair and consistent manner.
- Create the necessary infrastructure to implement the DP technology transfer effort.
- Develop mechanisms, such as a special account, to permit the revenues generated from technology transfer activities to be recycled to support additional activities and help sustain the effort.
- Develop criteria/procedures for selection and implementation of pilot projects.
- Utilize pilot projects to explore and test various mechanisms for increasing productive interactions among the weapons complex, U.S. industry, labor and educators.
- Develop evaluation criteria to measure the effectiveness of pilot projects.
- Monitor pilot projects and evaluate results to determine, under defined sets of circumstances, the most effective mechanisms for technology commercialization and prototype these for ongoing program implementation.
- Establish a vigorous outreach program to increase external awareness of the DP program, weapons complex capabilities, and access procedures.

United States Government

Department of Energy

memorandum

DATE **JAN 26 1990**
REPLY TO
ATTN OF DP-323.2
SUBJECT Interim Guidelines for Review of Technology Transfer Cases
TO Defense Programs Technology Transfer Steering Group

Attached are the interim considerations developed during the two-day meeting in Washington on September 24 and 25, 1989. Following the meeting, we received several comments concerning the considerations. All of your comments were carefully considered, and parenthetical notations have been made in the text to reflect any changes and additions.

As we discussed during the September meeting, the approach we have taken (i.e., the identification of a series of questions relating to several generic cases) will require the use of careful judgement to assure that each applicable question has been fully answered and that reasonable steps have been taken to address any areas of potential concern. Our careful consideration of these guidelines coupled with careful documentation of technology transfer files will help to provide a solid basis upon which to move ahead with an aggressive technology transfer initiative in Defense Programs (DP). The approach allows for flexibility, delegation to speed the process, and a well-documented rationale for the technology transfer decisions we make.

In creating these interim guidelines, it is apparent that they could not have been developed without the collective wisdom of all participants. I want to thank each of you for your contributions in this important process. As part of the Department's response to the National Competitiveness Technology Transfer Act of 1989, we will be working with you to develop similar guidelines in other important areas. In the interim, we request that they be put into immediate use to help guide technology transfer decisions within the DP complex.

A. Bryan Siebert, Jr.
Director
Office of Classification
and Technology Policy
Defense Programs

cc: R. Constant, GC-42
A. Joseph, ER-40
M. Kerrigan, PE-10
V. Berniklau, AL

Attachment 6

DISTRIBUTION

D. Bandy, AL
D. Fredlund, SAN
D. Irby, NV
J. Shadel, RL
J. Hanley, SAN
D. Scott, SR
R. Barks, LANL
G. Longerbeam, LLNL
D. Arvizu, SNL-Albuquerque
D. Majumdar, ID
R. Holman, INEL
B. Poteat, OR
M. Thiesen, OR

Issues to be Considered in Reviewing
Technology Transfer Cases Pending
Issuance of Formal Policy Guidelines

CASE I

A laboratory employee expresses an interest in an entrepreneurial activity.

Conflict of Interest

- . What, if any, is his involvement with the technology involved in the entrepreneurial activity?
 - How directly was the employee involved in the development of this technology?
 - Does, or did, the employee have any programmatic (influence) [direction] over that technology?
 - If so, what consideration should be given to separating the employee, at the appropriate time, from any position or activity which gives him programmatic (influence) [direction] over the technology he wants to commercialize?
 - When does the opportunity arise that his loyalties could become divided?
 - How serious is his interest in commercializing the technology?
 - Have the employee's financial (versus technical) interests diverged from those of his institution or sponsor?
 - Is the employee engaging in outside activities relating to the commercialization of the technology?
 - When was the technology first recognized as having potential commercial value?
- . [Is the laboratory employee the only laboratory employee expressing an interest in the entrepreneurial activity? Are there any other current laboratory employees, former laboratory employees, laboratory consultants, visitors or guest scientists who are also interested in or involved in the possible entrepreneurial activity?]
- . What do you need to consider in the event of an expression of interest by a third party for the technology that a lab employee has also expressed an interest in commercializing?

- [Has the laboratory employee been briefed, and is he/she aware of his/her conflict of interest obligations as a laboratory employee?] Is the lab employee aware that a third party is interested in commercializing the technology?
- Conversely, is the third party aware that a lab employee is also interested in the same opportunity?
- Have steps been taken to assure that the lab employee is not involved in the (discussions/) negotiations with the third party and that he does not have access to privileged information provided by the third party?
- Recognizing that a lab employee, by reason of his employment in the lab, has had the opportunity to be more intimately familiar with the details of the technology and for a longer period of time are reasonable steps being taken to provide the opportunity for the interested third party to obtain sufficient details of the technology, but without compromising (the lab's or) the employee's interest, so that he can make informed technical and business judgements?
- To the extent requested is a comparable level of lab support being offered to both the lab employee and the third party to assist in the commercialization of the idea? Have both parties been advised of the possible availability of such support?
- What is your basis for determining who is in the best position to commercialize the technology? What are the criteria? Are they in writing? Are they reasonable for the circumstances? Are they consistently applied?

What should be the employee's continued relationship with the lab?

- Should it be or has it been terminated?
- Should it be modified, based on overriding public policy interests, to:
 - provide for his continued availability to a critical program?
 - permit the employee to be rehired when his entrepreneurial activities cease?
 - provide him continued access to lab facilities/capabilities to assist in his commercialization efforts [(but only to the extent such support is available to other interested private companies)]?
- If it is in the public interest for the lab to maintain a

continuing employment type relationship with the employee, what restrictions will apply to avoid a real or apparent conflict of interest?

- . How are the negotiations with the employee/former employee handled?
 - Are they sufficiently at arms length?
 - Are any persons with a financial involvement in the entrepreneurial activity or a personal relationship with the entrepreneur involved in the negotiation?
- . [Do any other laboratory employees (other than the one who has expressed the specific interest in the commercialization effort) have an equity position or other interest in the commercialization effort?
 - What is their involvement with any laboratory on-going efforts related to the technology under consideration?
 - What is their relationship with the employee leading the commercialization effort?]

Fairness of Opportunity

- . Have steps been taken to make other potential interested parties aware of the idea, resource or capability and the commercial opportunity before entering into negotiations to grant rights to the employee?
- . Have the breadth and depth of this public exposure of the commercial opportunity been reasonable given the circumstances?
- . Has a reasonable time period been allowed for potentially interested other parties to analyze the significance of the opportunity and express their interest?
- . Have fair and reasonable efforts been made to provide details of the opportunity to third parties who express an initial interest in it and seek further support? [What documentation is available to demonstrate that this has been done?]
- . [How vital is the employee's knowledge and experience to the successful commercialization of the technology? Is it likely that the technology can be commercialized without this knowledge?]
- . [What risks are associated with allowing this technology to be commercialized by a third party that is not intimately familiar with its characteristics and applications?]
- . What, if any, restrictions were placed on private access to the technology? Were they reasonable and justifiable under the circumstances?

- . Do the costs of participating or obtaining access to the technology unfairly inhibit small business involvement?
- . Is the technology being requested/provided on an exclusive or a non-exclusive basis?
- . If on an exclusive basis:
 - Is there sufficient rationale for exclusivity?
 - Were possibilities of limited field of use or restricted exclusivity fully explored?
 - Is the length of the exclusive license reasonable?
 - Does the license agreement provide for revoking exclusivity in the event the licensee takes actions not deemed to be in the (government's) [public] interest such as not making sufficient effort to commercialize, manufacture outside of the U.S., transferring the technology to a foreign entity, etc.?
- . If a non-exclusive license is involved, has the possibility of obtaining a better deal for the government by an exclusive license to another party been adequately explored?
- . [Are royalty fee levels for the licensed technology consistent with industry "rules-of-thumb" for a technology of this type?]
- . Has U.S. preference been factored into the selection process?
- . To what extent were regional factors involved in the selection?
- . Are the guarantees relating to commercialization efforts adequate?
Reasonable under the circumstances? Enforceable?

National Security

- . Control issues:
 - Has there been a classification check of the technology?
 - If classified, could it be declassified or separated from the classified application?
 - Is the technology UCNI or ECI?
 - Have you checked the C/SIL for this technology?
 - Would the proposed activity require access to a sensitive

facility?

- What controls are in place to protect sensitive/unclassified information? [Do they meet Doe requirements?]
- Does the funding program or organization approve of transfer of title of the contractor for purposes of commercialization?
- Is either the third party company or the start-up company proposed by the employee foreign owned? Is there any foreign ownership in either of them?
- (Who are the executive officers of the company/proposed start-up company? Are they all U.S. citizens?) [Are all of the executive officers of the company/proposed start-up company U.S. citizens? List the name and citizenship of all non-U.S. citizen executive officers.]
- Are any of the officers of the company or proposed start-up company a registered foreign agent?
- To what extent will the companies agree to manufacture (or substantially manufacture) in the U.S.?
- . Promotional issues:
 - What organization or mechanism for the transfer will best benefit the DP weapons program with respect to:
 - subsequent or corollary developments of the technology?
 - maintaining the viability of domestic sources needed by DP?
 - not unfairly giving a competitive advantage to a non-DP source?

CASE II

A private company wishes to license lab technology.

Conflict of Interest

- . Does any lab "decision maker" have a financial interest in the company?
- . [Does any other lab employee, including consultants, have a financial interest in the company?]
- . Does the parent company of the M&O contractor [the M&O contractor, or any of their principal officers] have a financial interest in the

[private company] [If so, does this offer the contractor an unfair advantage?]

- . Does the company have any contractual relations with the lab or any of its employees? If so, could these be construed as providing it with an unfair advantage over competing organizations?
- . Are any former lab employees associated with the company? If so, what is their involvement in the technology licensing activity?

Fairness of Opportunity

- . Have steps been taken to make other potentially interested parties aware of this technology licensing opportunity?
- . Have the breadth and depth of this public exposure of the licensing opportunity been reasonable given the circumstances?
- . Has a reasonable time period been allowed for potentially interested other parties to analyze the significance of the opportunity and express their interest?
- . [Have fair and reasonable efforts been made to provide details of the opportunity to third parties who express an initial interest in it and seek further support? What documentation is available to demonstrate that this has been done?]
- . Is the technology being requested on any exclusive or a non-exclusive basis?
- . If on an exclusive basis:
 - Is there sufficient rationale for exclusivity?
 - Were possibilities of limited field of use or restricted exclusivity fully explored?
 - Is the length of the exclusive license reasonable?
 - Does the license agreement provide for revoking exclusivity in the event the licensee takes actions not deemed to be in the government's interest such as not making sufficient effort to commercialize, manufacture outside of the U.S., transferring the technology to a foreign entity, etc.?
- . If a non-exclusive license is involved, has the possibility of obtaining a better deal for the government by an exclusive license to another party been adequately explored?
- . [Are royalty fee levels for licensed technology consistent with

industry "rules-of-thumb" for a technology of this type?]

- . Has U.S. preference been factored into the selection process?
- . To what extent were regional factors involved in the selection?
- . Are the guarantees relating to commercialization efforts adequate?
Reasonable under the circumstances? Enforceable?

National Security

. Control issues:

- Has there been a classification check of the technology?
- If classified, could it be declassified or separated from the classified application?
- Is the technology UCON or ECI?
- Have you checked the C/SIL for this technology?
- Would the proposed activity require access to a sensitive facility?
- What controls are in place to protect sensitive unclassified information? [Do they meet DOE requirements?]
- Does the funding program or organization approve of transfer of title of the contractor for purposes of commercialization?
- Is the company foreign owned? Is there any foreign ownership in it?
- (Who are the executive officers of the company? Are they all U.S. citizens?) [Are all of the executive officers of the company U.S. citizens? List the name and citizenship of all non-U.S. citizen executive officers.]
- Are any of the officers of the company a registered foreign agent?
- To what extent will the company agree to manufacture (or substantially manufacture) in the U.S.?

. Promotional issues:

- What organization or mechanism for the transfer will best benefit the DP weapons program with respect to:
 - subsequent or corollary developments of the technology?

- maintaining the viability of domestic sources needed by DP?
- not unfairly giving a competitive advantage to a non-DP source?

CASE III

A private company wishes to enter into a cooperative R&D agreement with the lab?

Conflict of Interest

- . Does any lab "decision maker" have a financial interest in the company?
- . [Does any other lab employee, including consultants, have a financial interest in the company?]
- . Does the parent company of the M&O contractor [or the M&O contractor] have a financial interest in the (contractor) [private company]?
- . Does the company have any contractual relations with the lab [, the contractor,] or any of (its) [their] employees? If so, could these be construed as providing it with an unfair advantage over competing organizations?
- . Are any former lab employees associated with the company? If so, what is their involvement in this cooperative R&D activity?

Fairness of Opportunity

- . Is the capability of the lab in this area of technology generally known?
- . Is the lab prepared to enter into similar cooperative arrangements with competitor companies, if requested?

National Security

- . Does the proposed activity involve classified or sensitive technology?
- . [Has the nature and terms of this cooperative agreement been adequately communicated to the relevant DOE program and operations office officials for their review and approval?]
- . Would it require access to a sensitive facility?
- . What controls are in place to protect sensitive unclassified information? [Do they meet DOE requirements?]

- . Is the company foreign owned? Is there any foreign ownership in it?
- . (Who are the executive officers of the company? Are they all U.S. citizens?) [Are all of the executive officers of the company U.S. citizens? List the name and citizenship of all non-U.S. citizen executive officers.]
- . Are any of the officers of the company a registered foreign agent?
- . To what extent will the company agree to manufacture (or substantially manufacture) products resulting from the cooperative efforts in the U.S.?

CASE IV

A consortium wishes to enter into a cooperative R&D agreement with the lab.

Conflict of Interest

- . Does any lab "decision maker" have a financial interest in the consortium or its member companies?
- . Does the parent company of the M&O contractor [, the M&O contractor or any of their principal officers] have a financial interest in the consortium or its member companies? [If so, does this offer the contractor an unfair advantage in commercializing the technology?]

Fairness of Opportunity

- . How was the consortium established?
- . Were interested companies give an opportunity to join?
- . Are reasonable procedures in place to permit non-charter members to join the consortium at a later date if they wish?

National Security

- . Does the proposed activity involve classified or sensitive technology?
- . [Has the nature and terms of this cooperative agreement been adequately communicated to the relevant DOE program and operations office officials for their review and approval?]
- . Would it require access to a sensitive facility?
- . What controls are in place to protect sensitive unclassified information? [Do they meet DOE requirements?]

- . Is the consortium or any of its member companies foreign owned? Is there any foreign ownership in any of them?
- . (Who are the executive officers of the consortium and its member companies? Are they all U.S. citizens?) [Are all of the executive officers of the company U.S. citizens? List the name and citizenship of all non-U.S. citizen executive officers.]
- . Are any of the officers of the consortium or its member companies a registered foreign agent?
- . To what extent will the member companies agree to manufacture (or substantially manufacture) products resulting from the cooperative efforts in the U.S.?

CASE V

A lab employee wishes to consult for an outside organization

Conflict of Interest

- . Does the parent of the M&O contractor have a financial interest in the company for whom the employee wishes to consult?
- . Is there any financial or contractual relationship between the company and the lab?
- . Does the company have any involvement in the lab program on which the employee is working?
- . Is the company involved in the same areas of activity that the employee is working in for the lab?
- . If so, what steps will be taken to assure that the company does not unfairly gain access to lab technology through the consultancy agreement?
- . Is line management satisfied that the employee's consulting will not interfere with the lab mission or his lab duties?
- . What steps will be taken to control/restrict the employee's (involvement with) [use of proprietary information of one company for] other companies who might be competitors of the company for which he wishes to consult?
- . [Are other avenues available for the outside organization to obtain access to the employee's expertise either through a Work For Others agreement or through an established program of free consulting conducted through the laboratory?]

Fairness of Opportunity

- . No specific issues have been identified in this category for private consulting.

National Security

- . Does the proposed activity involve classified or sensitive technology?
- . Would it require access to a sensitive facility?
- . Is the company for which he wishes to consult foreign owned? Is there any foreign ownership in it?

Department of Energy
Washington, DC 20585

OCT 23 1990

MEMORANDUM FOR: Manager, AL
Manager, CH
Manager, ID
Manager, NV
Manager, OR
Manager, RL
Manager, SAN
Manager, SR

SUBJECT: DP Interim Guidelines - National Competitiveness Technology Transfer Act (P.L. 101-189)

Attached for your use in providing management oversight of Technology Transfer Activities at the Defense Programs (DP) plants and laboratories are interim considerations which address a number of issues that have been identified as requiring immediate guidance. These papers should be used in conjunction with the DP Guidelines transmitted by my January 16, 1990 memorandum to develop necessary implementing procedures.

These papers were developed in coordination with the Technology Transfer Field Task Force, and the Technology Transfer Project Group (TTPG). The TTPG is considering these papers as the basis for DOE-wide policy statements on the issues. These are expected to be ready for issuance in the near future but, until they are issued, DP field units should use the attached as interim guidance.

Note that the paper on overhead charges, which had been identified as a high priority need, is not included in this package. This issue is currently being reviewed by the Office of the Controller, and definitive guidance should be available shortly.

Please feel free to call me or John Hnatio (896-8446) if you have any questions.

A. Bryan Siebert, Jr.
Director
Office of Classification
and Technology Policy

Attachment

cc: (w/attachment)
Director, LLNL
Director, LANL
Director, SNL
Manager, Y-12
Mark Kerrigan, PE-2, 7B-084
Robert L. San Martin, CE-30, 6C-036
Larry Forsythe, NE-34, A-170 GT
Toni Joseph, ER-40, 7B-040
Michael Shapiro, NP-20, 6B-128
Clyde Frank, EM-50, 7A-049
Yvonne Weber, EH-25, GB-096B
James C. Bresee, RW-10, GB-253
Richard Williamson, IE-10, 7C-034
Elmer Lee, MA-01, 4A-253
William Crane, GC-40, 6A-197
Keith Frye, FE-13, A-102 GT
Frank Stewart, CE-20, 6A-049
Steve Mournighan, PR-10, 8H-033
Dick Constant, GC-42, 6F-067
Judd Hightower, GC-42, 6F-067
Russ Williams, NE-34, A-164 GT
Larry Adcock, AL
Vic Berniklau, AL
Bryan Siebert/Roger Heusser, DP-32, C-379 GT

DEFENSE PROGRAMS

INTERIM CONSIDERATION PAPERS

OCTOBER 1990

TABLE OF CONTENTS

	<u>Page</u>
1. Managing Conflicts of Interest.	1
2. Fairness of Opportunity	2
3. National Security and Other Sensitive Information	3
4. Documentation	4
5. U.S. Competitiveness.	5
6. Nuclear Weapons Production Plant Roles.	7
7. Resource Sharing.	6
8. Evaluation and Oversight.	9
9. Technology Maturation	10
10. Technology Deployment Facilities.	11
11. Intellectual Property	12
12. Depreciation, Added Factor Costs and Advanced Payments. . .	13
13. Outreach.	14
14. Export Controlled Information	15
15. Overhead Charges for Technology Transfer.	16
16. Small Business Participation.	17
17. Exempted and Exceptional Circumstance Technologies.	19
18. Program Mission Impact.	20
19. Technology Transfer Mechanisms.	21
20. Protection of Information and Data.	22

Technology Transfer
Interim Considerations

10/19/90

1. MANAGING CONFLICTS OF INTEREST

Consideration:

Conflicts of interest (COI) in technology transfer activities may relate to:

- a. individual(s),
- b. M&O contractor(s),
- c. outside organization(s), and
- d. the technology recipient.

Each program, laboratory or other facility is responsible for the identification, resolution, and management of COI matters.

General Guidelines:

- o M&O contractors shall develop written policies and procedures (consistent with contractual requirements) which fully address actual or potential conflicts or confluences of interest relating to technology transfer.
 - These written policies and procedures shall be broad enough to encompass all of the possible instances or conditions where COI may result. These written policies and procedures should result in effective internal practices and mechanisms.
 - The individuals involved and their management are ultimately responsible for the ethical and legal implementation of COI policies and procedures.

Technology Transfer
Interim Considerations

10/19/90

2. FAIRNESS OF OPPORTUNITY

Consideration:

The exercise of fairness of opportunity to potential partners seeking DOE technical assistance or federally funded technologies for purposes of commercialization shall be consistently and diligently practiced.

General Guidelines:

As a starting point for developing organizational-specific procedures to address fairness of opportunity, all potential partners will be evaluated using a consistent set of criteria. As a guideline, these procedures should assure that:

- To the extent possible, consistent with programmatic considerations, DOE and its contractors should encourage access and utilization of federal capabilities, technologies and facilities.
- Reasonable measures will be taken to ensure widespread notice of availability of technology transfer opportunities, especially for exclusive licensing and CRADA participation (consistent with the contract). The requirement to widely disseminate the availability of technology transfer opportunities does not apply to a specific application originated outside of the Laboratory or other facilities.
- Technology transfer participants are selected based on documented, objective criteria. Such criteria could include: potential return on investment to the taxpayer; benefit to DOE programs; ability and commitment to successfully commercialize the technology; U.S. competitive advantage; small business considerations; etc.

10/19/90

3. NATIONAL SECURITY AND OTHER SENSITIVE INFORMATION

Consideration:

Consistent with national security requirements, M&O contractors are encouraged to take full advantage of all technology transfer opportunities. Technology transfer opportunities where national security restrictions represent a potential barrier to successful commercialization of technology can be referred through the cognizant program official to Defense Programs for further consideration.

Information deemed sensitive and not generally releasable (for reasons of national security, operational security [OpSec], or other similar reason) shall be appropriately marked and controlled. Organization-specific procedures, if not already in place, shall be developed to assure the identification and protection of these types of information.

General Guidelines:

- o Specific organizational procedures will, to the maximum extent practicable, build upon existing procedures for the protection of sensitive information. In this regard, mechanisms are generally in place and working for classified information, for Unclassified Controlled Nuclear Information (UCNI), and OpSec information.
- o Existing DOE policies, procedures, and guidelines should be used as a starting point for developing procedures to address technology transfer information that may be deemed sensitive from the perspective of national security. These procedures should use the existing classification infrastructure, to the extent practicable, to support information sensitivity determinations.
- o At a minimum, organization-specific technology transfer procedures for the identification and protection of sensitive information should address the following:
 - Procedures to assure that technology transfer efforts do not result in disclosure of classified or sensitive (but unclassified) information to unauthorized persons.
 - That partners be made aware of their responsibilities with respect to Unclassified Controlled Nuclear Information (UCNI) under the Atomic Energy Act.

10/19/90

4. DOCUMENTATION

Consideration:

M&O contractors shall document action paths and decisions taken in the pursuit of technology transfer activities. This data should:

- a) Support an effective and auditable system of internal controls.
- b) Provide data sufficient to facilitate evaluation of the collaboration, from both federal and private sector perspectives.

General Guidelines:

- o Contractors will maintain, as a minimum, documentation which responds to DOE policies, procedures, and guidelines and will make this documentation available as required. Particular attention should be given to the documentation of contractor actions taken with respect to the areas of:
 - Fairness of opportunity;
 - U.S. competitiveness;
 - Conflict of interest;
 - National Security; and
 - FOIA exemptions.
 - Income distribution and utilization
- o Contractors will maintain and keep on file implementing agreements, including JWSs/CRADAs, as specified in the contract.
- o Contractors will collect information sufficient to evaluate the results of technology transfer, especially (wherever possible) direct feedback from the participant. Such information could include:
 - new or improved products or services;
 - new companies;
 - dollars of sales or cost reductions;
 - numbers of new jobs;
 - qualitative assessments on economic impact
 - etc.

10/19/90

5. U.S. COMPETITIVENESS

Consideration:

DOE technology transfer activities shall be conducted to further U.S. national interests to the maximum extent possible. These interests include national security, U.S. commercial competitiveness, the applications of advanced industrial capabilities, and the development of the technical skills of the American work force.

General Guidelines:

To assure that technology transfer activities further U.S. national interests organization-specific procedures should consider:

- o The foreign interest characteristics of firms interested in commercializing technology.
- o The provisions of applicable international treaties and agreements, such as the U.S.-Canada Free Trade Agreement.
- o That certain cases may arise in which no U.S.-based firm exhibits any interest in the opportunity presented. In such event, a selection from among potential non-U.S. partners should consider relative accrual of benefits to the U.S. -- domestic manufacture, creation of highly skilled jobs, tax revenues, etc.
- o That certain cases may arise in which an overriding interest of the U.S. Government will determine the desirability of cooperating preferentially with non-U.S. firms--such as in areas of international security or global environmental concerns. However, full awareness shall be exercised in such cases to capture maximum possible benefits for the U.S.
- o Concerns that may arise as a result of foreign takeovers and the potential for the loss of intellectual property to a non-U.S. firm.
- o Direct or indirect investment in U.S.-based plant and equipment.
- o Creation of new and/or higher quality U.S.-based jobs.
- o Substantial domestic manufacture and extent of local (U.S.) content in finished products in accordance with 35 USC 204 and 17 USC 3710.
- o Enhancement of the domestic skills base.
- o Opportunity for further domestic development of the technology.

- o Potential for reinvestment of profits in the domestic economy.
- o Positive impact on the U.S. balance of payments in terms of product and service exports as well as foreign licensing royalties and other receipts.
- o For foreign firms, the extent of bilateral reciprocity in international trade and investment policies of the firm's country.
- o Appropriate recognition of U.S. taxpayer support for the technology, e.g., a quid-pro-quo commensurate with the economic benefit that would be domestically derived by the U.S. taxpayer from U.S.-based manufacture.
- o That cross licensing, sublicensing, and reassignment provisions in licenses seek to maximize the benefits to the U.S. taxpayer.

10/19/90

6. NUCLEAR WEAPONS PRODUCTION PLANT ROLES

Consideration:

The recent modification of Section 91 of the Atomic Energy Act, coupled with the NCTTA of 1989, clarifies that technology transfer is a mission of Defense Programs. All parts of the DP complex--laboratories, test site, and production facilities--shall participate in the DOE technology transfer mission, consistent with statutory authority, their capabilities and program mission responsibilities.

General Guidelines:

- o Nuclear weapons production plants and test sites are considered participants in the technology transfer mission.
- o Although nuclear weapons production plants and test sites (with the exception of Y-12) cannot enter directly into CRADAs, these organizations can be participants under laboratory CRADAs.
- o Laboratories should become familiar with operations/technologies in the production complex and make efforts, where appropriate, to include production facilities in laboratory originated CRADAs.
- o Responsibility for considering and assuring the appropriate participation of the production plants and test sites in technology transfer activities is vested in each contracting operations office.

10/19/90

7. RESOURCE SHARING

Consideration:

An element of the DOE Technology Transfer Program is the concept of resource sharing between DOE and technology transfer partners. This recognizes that the taxpayers' benefits are maximized through increased utilization of laboratory facilities and effective use of the technologies. Resource sharing is an indicator of private sector interest in the technology and may be a factor in justifying further government investment. The percentage of resource sharing shall be based on the benefit to U.S. Government and other national objectives.

General Guidelines:

- o The laboratory shall seek to maximize the leverage of DOE resources, considering both cost and benefits.
- o Resource sharing is a negotiated item between the laboratory and the technology transfer partner.
- o The criteria for determining resource sharing by parties shall include such factors as:
 - monetary contribution of and benefit to DOE programs.
 - monetary contribution of and benefit to partners;
 - benefit to national objectives, including U.S. competitiveness.
- o Laboratories should provide justification for the extent of resource sharing, including a statement as to the equitability of the arrangement for DOE review and evaluation.

8. EVALUATION AND OVERSIGHT

Consideration:

In addition to effective internal control procedures, each laboratory, test facility, and production plant involved in technology transfer shall establish criteria to measure the success of the overall technology transfer effort as well as of the contributions of individuals in the many disciplines and aspects necessary for an effective program. Mechanisms for oversight shall be instituted at appropriate laboratory, facility, field office, and Headquarters program management levels fully utilizing to the extent possible existing oversight process such as institutional planning and annual laboratory appraisals. These considerations apply to the evaluation of technology transfer activities for:

Headquarters Program Offices which are responsible for providing policy guidance and the conduct of oversight and evaluation of technology transfer programs as administered by field elements.

Field Elements which are responsible for the administration and oversight of technology transfer programs at facilities under their cognizance.

Facilities which are responsible for the conduct and day-to-day management of technology transfer programs pursuant to applicable statute, applicable DOE policy and contracts.

General Guidelines:

- o Technology transfer activities must be adequately documented (see Interim Consideration #4).
- o Standard accounting and auditing procedures should be used for technology transfer activities, with appropriate tracking of related funding and funds usage.
- o Each organizational element is responsible for establishing internal controls including mechanisms for continuous self appraisal at all management levels.
- o Measures of overall program success will include milestones achieved and notable deliverables related to technology transfer activities. (See Interim Consideration #4.) Such measures may include number of licenses or patents issued as a result of CRADAs, percent of cost sharing under CRADAs, program benefit of CRADAs, education component of CRADAs, state and local government involvement under CRADAs, other agency involvement, small and disadvantaged business involvement, and industrial partner feedback regarding successes.

10/19/90

9. TECHNOLOGY MATURATION

Consideration:

Technologies developed at DOE facilities that are not sufficiently advanced to attract direct private sector collaboration for purposes of commercialization, may be further developed under proper management control to increase the potential for the transfer of technology, consistent with individual laboratory contracts.

General Guidelines:

- o Candidate technologies which require further development to realize their commercialization potential should be nominated and selected according to established criteria. As a minimum, their selection should involve a review by technical and technology transfer personnel (with input from the private sector). Selections made on any consideration of future program benefit should be accompanied by due diligence to avoid any possibility of augmenting appropriations.
- o Development costs for technology enhancements will be considered allowable within the DOE technology transfer mission, subject to official management control and appropriate DOE oversight. The preferred method of funding for enhancement activities is from revenues generated as a result of technology transfer activities; however, specific funding may be allocated for this purpose. Technology enhancement is intended to facilitate the commercialization of new or existing technology by U.S. industry and is aimed at achieving cost-shared cooperative agreements with industry partners.
- o Procedures for periodic progress reviews, including direct industry input to assure that technology enhancement activities are directed towards industry's perception of market needs, should be implemented to monitor development directions and to ensure continuing commercial viability. As a minimum, these reviews must include evaluation of deliverables, criteria for continuing or halting further development, and reassessments of continued industry interest and/or commitment.

10/19/90

10. TECHNOLOGY DEPLOYMENT FACILITIES

Consideration:

Technology deployment facilities which facilitate direct DOE/industry interaction are essential to a successful technology transfer program. Because of security concerns at DP sites, it is desirable that these technology deployment centers be located in unclassified areas. Use of these facilities should be based on the general principle of resource sharing which is applicable to all DOE technology transfer activities.

General Guidelines:

- o Charges for services provided in such facilities are negotiable, consistent with DOE policy, and will take into consideration such factors as program benefit, national objectives, and legislation relating to specific programs.
- o Fairness of opportunity for use/access will apply to such facilities - generally, applicants will be treated on a first-come, first-served basis; however, specific criteria should be established by each laboratory/facility to cover cases in which there are overlapping requests.
- o The U.S. competitiveness consideration paper will apply in regard to requests by non-U.S. firms for the use of or access to such facilities.
- o The disposition and sharing of intellectual property rights resulting from the use of such facilities should reflect the respective equities of the parties as set forth in the resource sharing arrangements.
- o DP may designate technology deployment facilities after receiving recommendations from the various DP laboratories and plants.

10/19/90

11. INTELLECTUAL PROPERTY

Consideration:

Intellectual property may arise from DOE program activities and from collaborative activities with the private sector. It is the responsibility of DOE contractors to identify and protect such intellectual property in accordance with their contract.

General Guidelines:

- o All personnel involved with potentially transferrable technologies or with the technology transfer process at all levels -- facility, contractor management, field office and program office -- must be familiar with the concept of intellectual property arising from the research being performed and the need to protect it.
- o Management in each organization must be aware that the protection of intellectual property is an absolute essential for an effective technology transfer program.
- o Technology transfer education and training programs must include consideration of the need to identify and protect intellectual property.
- o Contractors must develop organization-specific procedures for identifying, marking, and protecting all documents disclosing intellectual property.
- o Commercialization strategies should include not only a licensing strategy for the specific technology, but also the early perfecting of rights in the intellectual property, such as filing patent applications.

10/19/90

12. DEPRECIATION, ADDED FACTOR COSTS AND ADVANCED PAYMENTS

Consideration:

It is the position of DOE that private sector participants should generally be charged for depreciation and added factor costs for the use of DOE facilities and services except as described below:

DOE will consider the waiver of depreciation and added factor costs for technology transfer, consistent with existing DOE policy, where there is a clearly demonstrated programmatic benefit.

DOE laboratory directors have the discretion to request a waiver of these charges from the cognizant DOE official when a particular cooperative activity is expected to result in program benefits.

Under current DOE policy, federal funds cannot be used to finance a non-federal cosponsor's share of a project, and an advance payment must be obtained. However, the potential impact of advance payments can be mitigated as provided below.

General Guidelines:

- o In Cooperative Research and Development Agreements (CRADAs) which, by their definition, are based on mutual benefits, the M&O contractor should assure that the joint work statement (JWS) or the CRADA clearly sets forth the benefits to the government, so that a waiver of depreciation and added factor costs, if warranted, can be documented as part of the JWS approval process.
- o For other technology transfer vehicles, M&O contractors will be expected to document mission benefits which clearly demonstrate tangible benefits to the program if a waiver is requested and such documentation shall be submitted to the contracting officer for approval.
- o M&O contractors may, with respect to CRADAs with small business firms, minimize the financial impact of advance payments on such firms by: (1) providing out of award/management fees, royalties, or other corporate funds (but no federal funds) the advance funding; (2) negotiating a shorter time period than the current 90-day period for advance funding; (3) securing an irrevocable letter of credit from the federal reserve member institution for the amount of the participant's share; (4) having the participant establish an escrow account as described in DOE Order 2200.6, Chapter IX, Paragraph 2(g)(2)(D).

10/19/90

13. OUTREACH

Consideration:

Outreach includes all efforts designed to provide potential participants an awareness of the capabilities and expertise in DOE facilities and the opportunities for accessing them. It includes national, regional, and local interactions with industry, universities, state and local governments and other agencies. Outreach is a critical factor in assuring fairness of opportunity in technology transfer and all DOE elements should establish formal Outreach programs.

General Guidelines:

- o DOE Headquarters is responsible for outreach on the national level and with other agencies at the Washington level.
- o Headquarters and field offices are responsible for oversight and evaluation of outreach activities for the facilities under their control.
- o Laboratories and other facilities are responsible for developing and conducting outreach programs to promote awareness of specific capabilities and technologies available for commercialization.
- o All operating elements are responsible for coordinating with other DOE elements to minimize duplication.
- o Outreach programs should include solicitation and utilization of private sector feedback.

10/19/90

14. EXPORT CONTROLLED INFORMATION

Consideration:

In addition to classified information, Unclassified Controlled Nuclear Information (UCNI) and Operational Security Information (see Consideration Paper #3 - National Security and Other Sensitive Information), DOE technology transfer activities can result in information subject to export control regulations. Export Controlled Information (ECI) is that information which could not be lawfully exported by a private person without a license under the Arms Export Control Act, the Export Administration Act, the Atomic Energy Act, or the Nuclear Non-Proliferation Act.

General Guidelines:

- o Export controlled information (ECI) is information whose release to foreign entities may be contrary to U.S. laws, policies or regulations.
- o DOE laboratory and contractor employees, like all other U.S. persons, should be aware that it is U.S. policy not to cooperate directly or indirectly with unsafeguarded foreign nuclear activities, and they may be obligated to obtain Department of Commerce licenses for the export of certain types of technology or technical data.
- o Procedures contained in the memorandum of January 19, 1989, from the Acting Assistant Secretary for Defense Programs entitled "Guidelines on Export Controlled Information" should be used in identifying, controlling, and transferring ECI.
- o In addition to contractual requirements to alert technology transfer partners of their obligations relating to export control licenses, laboratories and other facilities should specifically advise participants when information which has been identified as ECI is to be used in a technology transfer activity.

Technology Transfer
Interim Considerations

10/19/90

15. OVERHEAD CHARGES FOR TECHNOLOGY TRANSFER

To Be Provided Later

10/19/90

16. SMALL BUSINESS PARTICIPATION

Consideration:

Technology transfer legislation requires that special consideration be given to small business and consortia of small business. DOE laboratories and other facilities engaging in technology transfer activities are encouraged to exercise sensitivity to the special needs of small business and to develop innovative approaches to address those needs. The TTPG is considering a number of options for addressing this issue.

General Guidelines:

- o Laboratories and other facilities should investigate the opportunities to cooperate with state and local government agencies, universities, incubators, and nonprofit organizations whose missions and programs include technical assistance to small businesses. Such organizations may represent opportunities for effective collaboration which accomplishes DOE's objective to provide special considerations to small business in the technology transfer process.
- o Laboratories and other facilities should employ a number of possible special considerations to small business which expand the possibilities for successful transfer and commercialization of technology. Evaluation of the effectiveness of each special consideration should be part of the implementation of this activity. Special considerations may include:
 - The Department will seek, through appropriations or special accounts, funding for advanced payments and/or full cost recovery for CRADAs with small companies. Funding to support this consideration may come from a line item appropriation for technology transfer, from royalties, or other income.
 - Waiver of depreciation and added factor with respect to small businesses on a case-by-case basis consistent with existing policy.
 - The laboratories, and other facilities, in technology transfer activities with small businesses, will attempt to tailor terms and conditions of agreements with special considerations for small businesses.
- o As part of M&Os' annual technology transfer plans, small business "special considerations shall be detailed, as well as goals for the extent of small business CRADA participation, reports on achievement against prior year goals and explanation of shortfall, if any.

- o DOE shall include small business assessment in annual appraisals and institutional planning, on-site reviews, annual reporting of technology transfer activities, and periodic reports to field offices and HQ staff.

Technology Transfer
Interim Consideration

10/19/90

17. EXEMPTED AND EXCEPTIONAL CIRCUMSTANCE TECHNOLOGIES

Consideration:

Under P.L. 96-517, naval nuclear propulsion and certain Defense Programs-funded technologies have been exempted from the contractor's right to elect to retain title to inventions. The public law requires a determination be made for each such technology or invention that restriction or elimination of the right of the contractor to retain title to any invention will better promote the commercialization of the technology. To date, exceptional circumstance determinations have been made on those technologies that relate to:

1. Uranium Enrichment, including isotope separation;
2. Civilian high-level nuclear waste or spent nuclear fuels;
3. Classified or sensitive information under Section 148 of the Atomic Energy Act of 1954, as amended; and
- 4-10. (TO BE IDENTIFIED)

Currently, the Department's policy for each exceptional circumstance technology is that title to inventions falling within each affected technology remains with the Government.

General Guidelines:

- o The Department will, for any additional exceptional circumstances determination, consider as a factor the goals of P.L. 101-189 as to whether retention of commercial rights to inventions by its M&O contractors will best assist widespread utilization and commercialization of the technology without detriment to the programs.
- o Contractors may propose commercialization plans of specific technologies falling within existing exceptional circumstance categories.

Technology Transfer
Interim Considerations

10/19/90

18. PROGRAM MISSION IMPACT

Consideration:

Laboratories and other facilities shall consider the positive and negative impacts of the work proposed by a potential technology transfer partner on the DOE's programmatic mission requirements.

General Guidelines:

- o Laboratories and other facilities must assure that proposed technology transfer activities are consistent with the DOE programmatic missions assigned to the laboratory.
- o Laboratories and other facilities should evaluate each new proposed agreement in view of its overall impact on laboratory resources available for mission related work as well as its impact on accomplishment of the mission itself.
- o A program mission impact statement is required as part of each proposed Joint Work Statement for Cooperative Research and Development Agreements.

10/19/90

19. TECHNOLOGY TRANSFER MECHANISMS

Consideration:

Transfers of technologies from laboratories and facilities to technology transfer partners shall recognize the many possible mechanisms (or methods) available (including, but not limited to CRADAs, use of facilities, work for others, cost shared contracts/cooperative agreements, scientific and technical publications, presentations at technical meetings, workshops and demonstrations, employee consulting, participation in electronic data bases, etc.) and make use of the most appropriate ones, considering the nature of the transfer, the return to the taxpayer, and the benefit to the U.S. economy.

General Guidelines:

- o The primary focus of the NCTTA is on CRADAs; however, other mechanisms should be considered.
- o All mechanisms must be consistent with DOE technology transfer policies.
- o For each technology transfer case, the mechanisms selected should be those most likely to produce the desired results as determined by the DOE contractor and the technology transfer partner.
- o For each technology transfer case, a comprehensive strategy should be devised that recognizes the efficacy of employing multiple transfer mechanisms over the sequence of activities which comprise the entire transfer cycle. For example, publication of technical papers in scientific or technical journals may be an appropriate mechanism to create awareness of the commercialization opportunity, followed by a CRADA or personnel exchange as mechanisms most appropriate to stimulate additional technical work to advance a particular application.

10/19/90

20. PROTECTION OF INFORMATION AND DATA

Consideration:

In addition to information which is sensitive from the national security perspective, laboratories and other facilities develop information and data which may be commercially valuable. Consistent with applicable statutes, such information requires protection in order to retain its commercial value. At the same time, basic research results must continue to be broadly disseminated. Also in the conduct of technology transfer activities laboratories and other facilities may be provided with proprietary information by their industrial partners and such information must be protected.

General Guidelines:

- o Procedures should be developed to provide for early identification and marking of commercially valuable information to protect it while ensuring continued information sharing within the facility and among the DP complex.
- o Consistent with current DOE policies, regulations and statutes, each facility should establish procedures to protect commercially valuable information.
- o Criteria (which are consistent with current DOE policies, regulations, and statutes) should be developed for identifying what information can be considered commercially valuable, under what conditions and for how long such information can be withheld from public dissemination, and what information must be publicly released.
- o Basic research results will continue to be broadly disseminated.
- o Applied technical data of no apparent commercial value will also be broadly disseminated.
- o Appropriate, preferably short term, time limits should be established for the eventual release of commercially valuable information to advance basic science and encourage innovation.
- o Research results associated with commercially valuable information should be released whenever it can be done without significantly diminishing the commercial value of the information.
- o Each facility should establish procedures to assure the protection of proprietary industrial information where these are not already in existence.
- o Information designated as proprietary and provided to the DP complex by industry must be explicitly identified as such to ensure proper treatment and protection.

- o Contractors are legally bound by the terms of any nondisclosure agreement they sign. Government employees, however, are subject to the provisions of 18 USC 1905 which provides for criminal sanctions for wrongfully disclosing proprietary industrial information.

Academic References

1. Dertouzos, Michael, Made in America: Regaining the Productive Edge, Report of the MIT Committee on Industrial Productivity
2. Fallows, James, More Like Us
3. Lodge, George C., Perestroika for America
4. Porter, Michael E., The Competitive Advantage of Nations
5. Prestowitz, Clyde V., Trading Places
6. Scott, Bruce R. and Lodge, George C., editors, U.S. Competitiveness in The World Economy
7. Walton, Mary, Deming Management at Work
8. Council on Competitiveness, Picking Up The Pace: The Commercial Challenge To American Innovation
9. The Report of the President's Commission on Industrial Competitiveness, Global Competition: The New Reality

DEFENSE PROGRAMS TECHNOLOGY COMMERCIALIZATION PROJECT

-- PROPOSAL GUIDELINES --

OVERVIEW - Proposals for technology commercialization projects should conform with the general intent expressed in the DP Technology Commercialization Charter.

TECHNOLOGY COMMERCIALIZATION is the substantive effort to apply the expertise, skills, and capabilities existing in the DP complex to enhance industrial capabilities in areas which are critical to DP and the nation's technological needs; to improve the skills of the labor force; and to increase interest in science and technology education. It includes developing and testing innovative arrangements for working with the private sector and demonstrating the effectiveness of the new ventures in transferring technology in various areas. It also includes efforts to structure the flow of the intellectual property involved with these ventures. The DP Technology Commercialization Initiative is a new program and the projects proposed are intended to test and employ innovative technology transfer methods.

PROPOSAL PURPOSE - To identify new opportunities to utilize the resources of the Defense Programs complex in collaboration with the U.S. private sector; including, industrial consortia, individual companies, trade associations, universities and educational institutions, labor unions, etc. Proposals will be evaluated to determine how closely they meet the goals of the DP Technology Commercialization Initiative, as articulated through the criteria, below. Due to limited resources, proposals will also be compared to one another in order to select those which most effectively leverage public funds to transfer the skills and technologies of the DP complex to the U.S. private sector. Preference will be given to those proposals which utilize creative and unique mechanisms to collaborate with private sector partners. Old ideas -- or proposals structured in a way that merely repackages previously rejected concepts -- are not likely to receive favorable consideration.

The technology enhancement project proposal is not part of a procurement process: there is not a specific dollar value for accepted proposals as it will be based upon need and the availability of funds; projects may be proposed for any unclassified technological area within the DP complex where a private sector sponsor has been identified; and, proposals may undergo modification after their submission through discussions between DP Headquarters and the primary DP facility submitting the proposal.

STRUCTURE - Each proposal should include a completed cover page, table of contents, and a detailed text not to exceed ten double-spaced pages; descriptive graphics and exhibits may also be attached. The proposal should highlight the key aspects of the technology commercialization project and address as many criteria as are applicable. If the proposal contains proprietary information furnished by a private sector partner, mark the front and back covers of the proposal "Contains Proprietary Information"; also, identify the proprietary information within the proposal text.

SCHEDULE - The first round of proposals for FY91 funding is **due on September 14, 1990**. Additional proposals for FY91 funding may be evaluated on a rolling basis as they are submitted throughout the year. However, it is anticipated that there will be very limited funds available for the funding of technology enhancement projects after the first round of proposals are reviewed.

AN OVERVIEW OF THE REVIEW PROCESS

In an effort to make certain that each proposal is given fair and equal consideration, the following procedures and criteria have been established for conducting reviews:

Procedures

A review of each proposal is to be conducted by technical specialists from Argonne National Laboratory so as to provide an independent analysis of the proposal's qualities. A second review will then be conducted by technical experts from another laboratory. However, the proposals that fall under the scope of the Advanced Manufacturing Initiative (AMI), will receive their second review by the AMI steering committee at the Albuquerque Operations Office. These specialists will assess the proposal's viability using the criteria explained below. Final determinations will be made by the Technology Management Branch of the DOE's Defense Programs.

While this review process is intended to identify those proposals which meet the DP's criteria for Technology Commercialization projects, it is **not** a standard procurement. Proposals which do not sufficiently meet the criteria may be improved by the submitting organization: the reviewer's notes and suggestions can facilitate these revisions.

Scoring

The proposals have been divided into two categories: technical and non-technical. Each proposal will be reviewed and scored on a scale of 92 points according to the table below. Six basic criteria are to be used: industrial support, benefit to national security, technical viability (except for non-technical proposals), benefit to the U.S., educational/training programs, and structure/management (see Criteria Guidelines on pg. 5 for details). Each is weighted according to its importance:

	<u>Technical</u>	<u>Non-Technical</u>
Industrial Support	30 pts.	40 pts.
Benefit to National Security	20 pts.	25 pts.
Technical Viability	20 pts.	0 pts.
Benefit to U.S.	15 pts.	20 pts.
Educational/Training Programs	5 pts.	5 pts.
Structure/Management	<u>2 pts.</u>	<u>2 pts.</u>
Total	92 pts.	92 pts.

Any uncertainties relating to technical viability or legal considerations are to be noted for future investigation, but this will not affect the review. The scores given by different reviewers for each proposal will be compared and significant discrepancies will be reconciled by examining the reviewer's notes.

Response

If the proposal does not receive funding after this review is completed, a letter will be sent to the submitting organization explaining the areas in which the proposal did not sufficiently meet the criteria. A list of suggested improvements will be generated from

the reviewer's comments. Applicants will be encouraged to resubmit a revised proposal, and subject to the availability of funds in FY1991, the proposal will be reconsidered. Otherwise, a new proposal must be submitted for the following year.

Finalists will be contacted personally for any additional information necessary to finalize the decision. For final approval, each applicant will be required to submit a formal letter which includes the signatures of all the participants, the DOE facility and all private sector partners, as proof of their commitment.

THIS PAGE INTENTIONALLY LEFT BLANK

IMPORTANT THINGS TO REMEMBER

- Unlike the procurement process with which you may be familiar, this proposal review will be very interactive. If you have any questions pertaining to missing information, definitions, statistics, or services, we will try to track down the necessary information as soon as possible.
- **Comments are required.** It is important that you include comments for each criterion because they will be used to substantiate your scoring and to provide candidates with suggestions for improvements.
- Your assessment **need not be limited** to the questions posed in the Criteria Guidelines. If you have other thoughts on an issue, please address them in your comments.
- Feel free to use additional resources (e.g. other staff members or reports) to verify your opinion. Please note the source. This review should be comprehensive.
- Some proposals contain proprietary information. Follow the necessary Argonne procedures to protect this information. This is especially important when conferring with other employees.
- Each proposal must be independently reviewed on the basis of its individual merits and **not** compared to others. Review each proposal on its face value.
- Keep your comments concise and to the point. All comments should provide constructive criticism.
- If you feel a personal conflict of interest, please make us aware of it immediately.
- If you feel uncertain about your evaluation, for example, if you feel unqualified to judge the material and no other resources are available, or if there is insufficient information, use your best judgement in scoring, make a note of the discrepancy, and give a brief explanation. Special consideration will be given to the issue.
- Lastly, make suggestions for improving the proposal.
- **IF THERE ARE ANY QUESTIONS, PLEASE FEEL FREE TO ASK US.**

CRITERIA GUIDELINES

Under each criterion, there are *representative* guidelines for your consideration. Feel free to consider and comment on other pertinent issues which pertain to the proposal you are reviewing.

Industrial Support

Consider the following:

- What are the cost-share arrangements?
- Compare the funds requested from DP to Private Sector contributions. Does the request seem reasonable? (In general, the goal is a 50/50 cost share.)
- Estimate the value of the proposed in-kind services. Are the Private Sector estimates accurate?
- Assess the quality of the relationship between the partners (Government and Private Sector). Is there a genuine commitment?
- How will the proposed funding mechanism help to leverage laboratory resources?

Benefit to National Securities

Consider the following:

- Does the project provide direct defense complex benefits, for example, improved weapons systems or military aircraft?
- Will commercializing this technology help to improve the quality and reliability of products purchased from critical DP suppliers?
- How will this project help DP to continue to meet the DOE's programmatic requirements?
- Is the project relevant to other laboratory work?
- Is there a potential impact on laboratory facilities? Has the proposal addressed this concern?

Technical Viability

Feasibility

Consider the following:

- Is the development of this technology dependent on the advancement of other technologies? If so, how will this affect the project?
- To what extent does this technology represent an improvement over existing technologies?
- How realistic are the technical objectives?
- What is the likelihood that the stated objectives will be met?

Technical Uncertainties

Consider the following:

- What are the technical uncertainties?
- Will these uncertainties prove to be insurmountable?
- Is the program structured to reduce the uncertainties?

Time Management

Consider the following:

- Is the predicted duration of this project reasonable?

Benefit to the United States

Consider the following:

- What are the long-term and short-term benefits of commercializing this technology?
- Will developing this technology assist an industry critical to U.S. competitiveness?
- Is there the potential for developing a new industry or for expanding an existing one?
- Is there a potential world market for the resulting technology or product?
- Is the development of this technology critical to the growth of a particular industrial sector?
- Will the project foster cooperation in pre-competitive R&D?

Education/Training Programs

Consider the following:

- Will the project provide skills, education, or training to DOE or M&O contractor personnel?
- Will the project provide skills, education, or training to employees of Private Sector partners, university or trade school students, or the general U.S. labor force?
- Will the program improve the engineering curriculum, or support research in a particular field?

Project Structure/Management

Consider the following:

- How well is the program structured to meet its goals?
- Does this project test a new mechanism for laboratory/industry interface?
- Does this project provide unique procedures to facilitate the transfer of the technology?

Legal Considerations

Consider the following:

- Are there any unique intellectual property rights?
- What efforts will be made to protect proprietary data?
- Are there special export control considerations?

Suggested Improvements

For example:

- How can the written proposal be improved?
- How can the proposed research and development be improved?
- Can the structure be changed to improve the efficiency of the program?
- How can the funds be used to better facilitate transfer of the technology?
- Has there been due consideration of the DP Interim Criteria on "Conflict of Interest," "Outreach," and "Fairness of Opportunity?"

Reviewer's Name: _____

Affiliation: _____

Telephone Number: _____

**DP Technology Commercialization
Proposal Review
1990**

Technical Work Sheet

Proposal Number: _____

Proposal Title: _____

**Industrial Support
30 points**

Comments:

committed partners with 50 - 50% cost share
tentative partners with some cost share
no partners and/or no cost share

30 - 20 pts.
19 - 10 pts.
9 - 0 pts.

score: _____

**Benefit to
National Security
20 points**

Comments:

Excellent	20 - 15 pts.
Good	14 - 10 pts.
Fair	9 - 5 pts.
Poor	4 - 0 pts.

Technical Viability

a + b = 20 points

c = no score

a) Feasibility

Comments:

b) Time Management

Comments:

Excellent	20 - 15 pts.
Good	14 - 10 pts.
Fair	9 - 5 pts.
Poor	4 - 0 pts.

c) Technical Uncertainties

Comments:

no score

**Benefit to the
United States
15 points**

Comments:

Excellent	15 - 12 pts.
Good	11 - 8 pts.
Fair	7 - 4 pts.
Poor	3 - 0 pts.

score: _____

**Education/Training
Programs
5 points**

Comments:

Excellent	5 pts.
Good	4 - 3 pts.
Fair	2 - 1 pts
Poor	0 pts.

score: _____

**Project Structure/
Management
2 points**

Comments:

Excellent	2 pts.
Fair	1 pt.
Poor	0 pt.

score: _____

SUGGESTED IMPROVEMENTS

Initials _____

Reviewer's Name: _____

Affiliation: _____

Telephone Number: _____

**DP Technology Commercialization
Proposal Review
1990**

Non-technical Work Sheet

Proposal Number: _____

Proposal Title: _____

Industrial Support
40 points

Comments:

committed partners with 50 - 50% cost share
tentative partners with some cost share
no partners and/or no cost share

40 - 27 pts.
26 - 13 pts.
12 - 0 pts.

score: _____

**Benefit to
National Security
25 points**

Comments:

Excellent	25 - 20 pts.
Good	19 - 13 pts.
Fair	12 - 6 pts.
Poor	5 - 0 pts.

**Benefit to the
United States
20 points**

Comments:

Excellent	20 - 15 pts.
Good	14 - 10 pts.
Fair	9 - 5 pts.
Poor	4 - 0 pts.

**Education/Training
Programs
5 points**

Comments:

Excellent	5 pts.
Good	4 - 3 pts.
Fair	2 - 1 pts
Poor	0 pts.

score: _____

**Project Structure/
Management
2 points**

Comments:

Excellent	2 pts.
Fair	1 pt.
Poor	0 pt.

score: _____

SUGGESTED IMPROVEMENTS

Initials _____

The following modified laboratory contracts to include technology transfer as a mission and as an allowable cost; also authorized CRADAs.

TECHNOLOGY TRANSFER CONTRACT CLAUSE

This clause has as its purpose, implementation of the National Competitiveness Technology Transfer Act of 1989 (Sections 3131, 3132, 3133, and 3159 of P.L. 101-189) and takes precedence over any other provisions of this Contract to the contrary.

I. TECHNOLOGY TRANSFER

A. Definitions

1. Contractor's Laboratory Director means the individual who has supervision over all or substantially all of the Contractor's operations at the Laboratory.
2. Intellectual Property means patents, trademarks, copyrights, mask works, and other forms of comparable property rights protected by Federal Law.
3. Cooperative Research and Development Agreements (CRADAs) mean any agreement entered into between one or more Federal laboratories and one or more non-Federal parties under which the Government, through its laboratories, provides personnel, services, facilities, equipment, and other resources with or without reimbursement (but not funds to non-Federal parties) and the non-Federal parties provide funds, personnel, services, facilities, equipment, or other resources toward the conduct of specified research or development efforts which are consistent with the missions of the Laboratory; except that such term does not include a procurement contract or cooperative agreement as those terms are used in sections 6303, 6304, and 6305 of Title 31 of the United States Code.
4. Joint Work Statement (JWS) means a proposal for a CRADA prepared by the Contractor, signed by the Contractor's Laboratory Director *or designee* which describes the following:
 - a. Purpose;
 - b. Scope of Work which delineates the rights and responsibilities of the Government, the Contractor and Third Parties, one of which must be a non-Federal party;
 - c. Schedule for the work; and
 - d. Cost and resource contributions of the parties associated with the work and the schedule.

B. Authority

1. In order to ensure the full use of the results of research and development efforts of, and the capabilities of, the Laboratory, technology transfer, including Cooperative Research and Development Agreements (CRADAs), is established as a mission of the Laboratory consistent with the policy, principles and purposes of Sections 11(a)(1) and 12(g) of the Stevenson-Wydler Technology Innovation Act of 1980 as amended (15 U.S.C. 3710a); Section 3132(b) of P.L. 101-189 and of Chapter 38 of the Patent Laws (35 U.S.C. 200 et seq.); Section 152 of the Atomic Energy Act of 1954 as amended (42 U.S.C. 2182); Section 9 of the Federal Non-Nuclear Act of 1974 (42 U.S.C. 5908); and Executive Order 12591 of April 10, 1987.
2. The Contractor shall conduct technology transfer activities with the clear intent of providing benefit from Federal research to U. S. industrial competitiveness.
3. In pursuing the technology transfer mission, the Contractor is empowered to conduct the following activities: identify and protect Intellectual Property, negotiate licensing agreements for Intellectual Property that the Contractor controls or owns, enter into CRADAs, provide technical consulting and personnel exchanges, conduct science education activities and reimbursed Work for Others (WFO), provide information exchanges and make available Laboratory user facilities. It is fully expected that the Contractor shall use all of the mechanisms available to them to accomplish this technology transfer mission, including, but not limited to, user facilities, WFO, science education activities, consulting, personnel exchanges, and licensing in accordance with this clause.

C. Allowable Costs (Applies to Contractors performing technology transfer activities under this clause and from which all income is returned to the Laboratory for use under the Contract.)

1. The Contractor shall establish and carry out its technology transfer efforts through appropriate organizational elements consistent with the requirements for an Office of Research and Technology Applications (ORTA) pursuant to Paragraphs (b) and (c) of Section 11 of the Stevenson-Wydler Technology Innovation Act of 1980 as amended (15 U.S.C. 3710). The costs associated with the conduct of technology transfer through the ORTA, including activities associated with obtaining, maintaining, and licensing Intellectual Property rights, increasing the potential for the transfer of technology, and the widespread notice of technology transfer opportunities, shall be deemed allowable provided that such costs meet the other requirements of the allowable costs provisions of this Contract. These costs in any fiscal year shall not exceed an amount equal to 0.5 percent of the Federal research and development budget (*operating including Work For Others*) of the Laboratory for that fiscal year,

without written approval of the Contracting Officer, in addition to any separately designated funds.

2. The Contractor's participation in litigation to enforce or defend Intellectual Property claims associated with its technology transfer efforts shall be as provided in the clause entitled "Litigation and Claims" of this Contract.

D. Conflicts of Interest - Technology Transfer

The Contractor shall develop implementing procedures that seek to avoid employee and organizational conflicts of interest, or the appearance of conflicts of interest, in the conduct of its technology transfer activities. Such implementing procedures shall be provided to the Contracting Officer for review and approval within sixty (60) days after execution of this clause. The Contracting Officer shall have thirty (30) days thereafter to approve or require specific changes to such procedures. Such implementing procedures shall include procedures to:

1. Ensure employee competency, conduct and integrity, in connection with the CRADA activity in accordance with the provisions of Paragraph II.E. of this clause.
2. Review and approve employee activities so as to avoid conflicts of interest arising from commercial utilization activities relating to Contractor-developed Intellectual Property;
3. Conduct work performed using royalties so as to avoid interference with or adverse effects on ongoing DOE projects and programs;
4. Conduct activities relating to commercial utilization of Contractor-developed Intellectual Property so as to avoid interference with or adverse effects on user facility or WFO activities of the Contractor;
5. Conduct DOE funded projects and programs so as to avoid the appearance of conflicts of interest or actual conflicts of interest with non-Government funded work;
6. Notify the Contracting Officer with respect to any new work to be performed or proposed to be performed under the Contract for the Department or other Federal agencies where the new work or proposal involves Intellectual Property in which the Contractor has obtained or intends to request or elect title;
7. Except as provided elsewhere in this Contract, obtain the approval of the Contracting Officer for any licensing of or assignment of title to Intellectual Property rights by the Contractor to any business or corporate affiliate of the Contractor;

8. Obtain the approval of the Contracting Officer prior to any assignment, exclusive licensing, or option for exclusive licensing, of Intellectual Property to any current or former Laboratory employee or consultant.
9. Notify non-Federal sponsors of WFO activities, or non-Federal users of user facilities, of any relevant Intellectual Property interest of the Contractor prior to execution of WFOs or user agreements.

E. Fairness of Opportunity

In conducting its technology transfer activities, the Contractor shall prepare procedures and take all reasonable measures to ensure widespread notice of availability of technologies suited for transfer and opportunities for exclusive licensing and joint research arrangements. The requirement to widely disseminate the availability of technology transfer opportunities does not apply to a specific application originated outside of the Laboratory.

F. U.S. Industrial Competitiveness

1. In the interest of enhancing U.S. Industrial Competitiveness, the Contractor shall, in its licensing and assignments of Intellectual Property, give preference in such a manner as to enhance the accrual of economic and technological benefits to the U.S. domestic economy. The Contractor shall consider the following factors in all of its licensing and assignment decisions:
 - (a) whether any resulting design and development will be performed in the United States and whether resulting products, embodying parts, including components thereof, will be substantially manufactured in the United States; or
 - (b) (i) whether the proposed licensee or assignee has a business unit located in the United States and whether significant economic and technical benefits will flow to the United States as a result of the license or assignment agreement; and further,

(ii) whether in licensing any entity subject to the control of a foreign company or government, such foreign government permits United States agencies, organizations or other persons to enter into cooperative research and development agreements and licensing agreements, and have policies to protect United States intellectual property rights.

If the Contractor determines that neither of the above two sets of conditions is likely to be fulfilled, the Contractor, prior to entering into such an agreement, must obtain the approval of

the Contracting Officer. The Contracting Officer shall act on any such requests for approval within thirty (30) days.

2. The Contractor agrees to be bound by the provisions of 35 U.S.C. 204. *[DELETE regardless of Contractor size or nonprofit status or the nature of the agreement]*

G. Indemnity - Product Liability

In conducting technology transfer activities, including but not limited to, licensing activities or CRADAs, the Contractor agrees to include in such agreements a requirement *that the Contractor [DELETE to indemnify itself]* and the U.S. Government *be indemnified* for all damages, costs, and expenses, including attorneys' fees, arising from the commercialization and utilization of such technologies, including, but not limited to, the making, using, selling or exporting of products, processes, or services derived from the transferred technology.

H. Disposition of Income (Applies to Contractors conducting technology transfer activities under this clause and from which all income is returned to the Laboratory for use under the Contract.)

1. Royalties or other income earned or retained by the Contractor as a result of performance of authorized technology transfer activities herein shall be used by the Contractor for scientific research, development and education at the Laboratory, consistent with the research and development mission and objectives of the Laboratory and subject to Section 12(b)(5) of The Stevenson-Wydler Technology Innovation Act of 1980, as amended (15 U.S.C. 3710a(b)(5)) and Chapter 38 of the Patent Laws (35 U.S.C. 200 et seq.) as amended through *[insert the date of this modification]*. If the amounts of such royalties and income received during any fiscal year exceed 5 percent of the Laboratory's budget for that fiscal year, 75 percent of such excess amounts shall be paid to the Treasury of the United States, and the remaining amount of such excess shall be used by the Contractor for the purposes as described above in this paragraph. Any inventions arising out of such scientific research and development activities shall be deemed to be "Subject Inventions" under the Contract.
2. The Contractor shall include as a part of its annual Laboratory Institutional Plan or other such annual document a plan setting out those uses to which royalties and other income received as a result of performance of authorized technology transfer activities herein, will be applied at the Laboratory, and at the end of the year, provide a separate accounting for how the funds were actually used. Under no circumstances shall these royalties and income be used for an illegal augmentation of funds furnished by the U.S. Government.

3. The Contractor shall establish a policy for making awards or sharing of royalties with Contractor employees, ***other coinventors and coauthors*** including, ***when deemed appropriate by the Contracting Officer***, Federal employee coinventors.

I. Transfer to Successor Contractor

In the event of termination or expiration of this Contract, any unexpended balance of income received for use at the Laboratory shall be transferred, at the Contracting Officer's request, to a successor contractor, or in the absence of a successor contractor, to such other entity as designated by the Contracting Officer. The Contractor shall transfer title, as one package, in all patents and patent applications, licenses, accounts containing royalty revenues from such license agreements, including equity positions in third party entities, and other Intellectual Property rights which arose at the Laboratory, to the successor contractor or to the Government as directed by the Contracting Officer.

J. Technology Transfer Affecting the National Security

1. The Contractor shall notify ***and obtain the approval of*** the Contracting Officer, prior to entering into any technology transfer arrangement, when such technology or any part of such technology is classified or sensitive under Section 148 of the Atomic Energy Act (42 U.S.C. 2168). Such notification shall include sufficient information to enable DOE to determine the extent that commercialization of such technology would enhance or diminish security interests of the United States, or diminish communications within DOE's nuclear weapons production complex. DOE shall use its best efforts to complete its determination within sixty (60) days of the Contractor's notification, and provision of any supporting information, and DOE shall promptly notify the Contractor as to whether the technology is transferable.
2. The Contractor shall include in all of its technology transfer agreements with third parties, including, but not limited to, CRADAs, licensing agreements and assignments, notice to such third parties that the export of goods and/or Technical Data from the United States may require some form of export control license from the U.S. Government and that, failure to obtain such export control license, may result in criminal liability under U.S. laws.
3. For other than fundamental research as defined in National Security Directive 189, the Contractor is responsible to conduct internal export control reviews and assure that technology is transferred, in accordance with applicable law.

K. Records

The Contractor shall maintain records of its technology transfer activities, in a manner and to the extent satisfactory to the DOE, and specifically including, but not limited to, the licensing agreements, assignments and the records required to implement the requirements of paragraphs E., F., and H., herein and shall provide reports to the Contracting Officer to enable DOE to maintain the recording requirements of Section 12(c)(6) of the Stevenson-Wydler Technology Innovation Act of 1980 as amended (15 U.S.C. 3710a(c)(6)). Such reports shall be made annually in a format to be agreed upon between the Contractor and the DOE and in such a format which will serve to adequately inform DOE of the Contractor's technology transfer activities while protecting any data not subject to disclosure under the Rights in Technical Data clause and Section II. herein. Such records shall be made available in accordance with the clauses of this Contract pertaining to inspection, audit and examination of records.

L. Reports to Congress

To facilitate DOE's reporting to Congress, the Contractor is required to annually submit to DOE a technology transfer plan for conducting its technology transfer function for the upcoming year, including plans for securing Intellectual Property rights in Laboratory innovations with commercial promise and plans for managing such innovations so as to benefit the competitiveness of United States industry. This plan shall be provided to the Contracting Officer on or before *October 1* of each year.

M. Oversight and Appraisal

The Contractor is responsible for developing and implementing effective internal controls for all technology transfer activities consistent with the audit and record requirements of this Contract. Laboratory Contractor performance in implementing the technology transfer mission and the effectiveness of Contractor procedures will be evaluated by the Contracting Officer as part of the annual appraisal process, with input from the cognizant Secretarial Officer or program office.

II. TECHNOLOGY TRANSFER THROUGH COOPERATIVE RESEARCH AND DEVELOPMENT AGREEMENTS

Upon approval of the Contracting Officer and as provided in a DOE approved Joint Work Statement (JWS), the Laboratory Director or his designee may enter into CRADAs on behalf of the DOE subject to the requirements set forth herein.

A. Review and Approval of CRADAs

1. Each JWS shall be submitted to the Contracting Officer for approval. The Contractor's Laboratory Director shall provide a program mission impact statement and shall include an impact statement regarding related known Intellectual Property rights owned by the Government to assist the Contracting Officer in his approval determination.
2. The Contractor shall also include (specific to the proposed CRADA), a statement of compliance with the Fairness of Opportunity requirements of paragraph I.E. above.
3. Within ninety (90) days after submission of a JWS, the Contracting Officer shall approve, disapprove or request modification to the JWS. If a modification is required, the Contracting Officer shall approve or disapprove any resubmission of the JWS within thirty (30) days of its resubmission, or ninety (90) days from the date of the original submission, whichever is later. The Contracting Officer shall provide an explanation to the Contractor's Laboratory Director of any disapproval or requirement for modification of a JWS.
4. Upon approval of a JWS, the Contractor's Laboratory Director may submit a CRADA, based upon the approved JWS, to the Contracting Officer. The Contracting Officer, within thirty (30) days of receipt of the CRADA, shall approve or request modification of the CRADA. If the Contracting Officer requests a modification of the CRADA, an explanation of such request shall be provided to the Laboratory Director.
5. The Contractor shall not enter into, or begin work on, a CRADA until approval of the CRADA has been granted by the Contracting Officer. The Contractor may submit its proposed CRADA to the Contracting Officer at the time of submitting its proposed JWS or any time thereafter. However, the Contracting Officer is not obligated to respond under subparagraph 4. above until within thirty (30) days after approval of the JWS or thirty (30) days after submittal of the CRADA, whichever is later.

B. Selection of Participants

The Contractor's Laboratory Director, in deciding what CRADA to enter into shall:

1. Give special consideration to small business firms, and consortia involving small business firms;
2. Grant U. S. preference in accordance with the licensing and assignment requirements of paragraph I.F. above;
3. Provide Fairness of Opportunity in accordance with the requirements of paragraph I.E. above; and
4. Give consideration to the Conflicts of Interest requirements of paragraph I.D. above.

C. Withholding of Data

1. The Contractor may provide for appropriate protection against dissemination of data produced as a result of research and development activities conducted under the CRADA, for a period of up to five (5) years from the time the data is first produced. Such data must be data that would be a trade secret or commercial or financial data that would be privileged or confidential, if such data had been obtained from a non-Federal Third Party. Since such data is exempt from disclosure under the Freedom of Information Act, the DOE shall cooperate with the Contractor in withholding such data.
2. *Unless otherwise expressly approved by the Contracting Officer in advance for a specific CRADA*, the Contractor agrees, at the request of the Contracting Officer, to transmit such data to other DOE facilities for use by DOE or *its Contractors* by or on behalf of the Government. Upon transmitting such data, the Contractor shall clearly mark the data with a legend setting out the restrictions against private use and further dissemination, along with the expiration date of such restrictions.
3. In addition to its authority to license Intellectual Property, the Contractor may enter into licensing agreements with third parties for data developed by the Contractor under a CRADA subject to other provisions of this Contract. However, the Contractor shall neither use the protection against dissemination nor the licensing of data as an alternative to obtaining patent protection of any invention contained in such data.

D. Work For Others and User Facility Programs

1. WFO and User Facility Agreements (UFAs) are not considered CRADAs and will be available for use by the Contractor in addition to CRADAs for achieving utilization of employee expertise and unique facilities for maximizing technology transfer. The Contractor agrees to inform prospective CRADA participants, which are intending to substantially pay full cost recovery for the effort under the CRADA, of WFO and UFA opportunities, including Class Waiver provisions associated therewith.

2. Where the Contractor believes that the transfer of technology to the U. S. domestic economy will benefit from, or other equity considerations dictate, an arrangement other than the Class Waiver of patent rights to the sponsor in WFO and UFAs, a request may be made to the Contracting Officer for an exception to the Class Waivers.

E. Conflicts of Interest

1. Except as provided in paragraph 3. below, the Contractor shall assure that no employee of the Contractor shall have a substantial role (including an advisory role) in the preparation, negotiation, or approval of a CRADA, if, to such employee's knowledge:
 - a. Such employee, or the spouse, child, parent, sibling, or partner of such employee, or an organization (other than the Contractor) in which such employee serves as an officer, director, trustee, partner, or employee--
 - (1) holds financial interest in any entity, other than the Contractor, that has a substantial interest in the preparation, negotiation, or approval of the CRADA;
 - (2) receives a gift or gratuity from any entity, other than the Contractor, that has a substantial interest in the preparation, negotiation, or approval of the CRADA; or
 - b. A financial interest in any entity, other than the Contractor, that has a substantial interest in the preparation, negotiation, or approval of the CRADA, is held by any person or organization with whom such employee is negotiating or has any arrangement concerning prospective employment.
2. The Contractor shall require that each employee of the Contractor who has a substantial role (including an advisory role) in the preparation, negotiation, or approval of a CRADA certify to the Contracting Officer that the circumstances described in paragraph 1. above do not apply to that employee.
3. The requirements of paragraphs 1. and 2. above shall not apply in a case where an employee, described therein, advises *through the Contractor* the Contracting Officer in advance of his or her participation in the preparation, negotiation or approval of a CRADA of the nature of and extent of any financial interest described in paragraph 1., and the Contracting Officer determines that such financial interest is not so substantial as to be considered likely to affect the integrity of the Contractor employee's participation in the process of preparing, negotiating, or approving the cooperative agreement.

III. TECHNOLOGY TRANSFER IN OTHER COST SHARING AGREEMENTS

In conducting research and development activities in cost shared agreements not covered by Section II. above, the Contractor, with written permission of the Contracting Officer, may provide for the withholding of data produced thereunder in accordance with the applicable provisions of paragraph II.C. herein.

U.S. Department of Energy
Washington, D.C.

Secretary of Energy
NOTICE

SEN-30-91

**SUBJECT: SETTING THE COURSE FOR TECHNOLOGY TRANSFER
AT THE DEPARTMENT OF ENERGY**

DATE: 1-23-91

In my notice of September 5, 1989, I outlined the management objectives I felt were necessary to set a "new course" for the Department of Energy (DOE) in executing its mission responsibilities. This notice sets the course for one of those initiatives most important to achieving the Nation's energy, environmental, economic, and national security goals: technology transfer.

Because U.S. competitiveness in international markets is seriously challenged, I feel that it is important to move as quickly as possible to expand and enhance DOE's cooperative work with industry. Shorter product cycles demand faster translation of research and development (R&D) into marketable products and services, and existing transfer processes are often too slow to meet these requirements. Efforts to utilize the technologies and capabilities residing in DOE facilities to provide assistance to the private sector in improving our industrial competitiveness must be made more efficient and effective than in the past. The following "Philosophy of Operations" sets the vision and policy framework for immediately establishing an enhanced technology transfer program at the Department of Energy.

PHILOSOPHY OF OPERATIONS: TECHNOLOGY TRANSFER

Statement of Purpose

Preamble:

Through the National Energy Strategy (NES) process, it has become clear that basic scientific research and the development of advanced energy technologies is fundamental to the success of any national energy strategy. Further, the success of every technology-related strategy proposed in the NES depends on rapidly transferring the results of research and development activities into use. In fact, these fundamental principles apply across a broad range of national strategies, from agriculture, to space, to national defense.

DISTRIBUTION:
ALL DEPARTMENTAL ELEMENTS

INITIATED BY:
OFFICE OF THE SECRETARY

At the Department of Energy, our challenge is to support the search for fundamental knowledge, and then to help translate that knowledge into practical applications for the U.S. economy and U.S. defense. The DOE's programs, laboratories and facilities are a national resource, capable of providing significant scientific, engineering, and technological know-how that can help achieve the goals of the NES, support national security, and help enhance U.S. industrial competitiveness.

We have long been successful at sharing the results of our basic research programs (knowledge transfer)--both to and from the international scientific community. We have also proven our ability to support the transfer of applied research activities (direct transfer)--both to and from industry, universities, and State and local governments. Finally, our engineers and scientists have worked successfully with industry to find commercial applications for the results of many basic science and defense weapons research programs (spin-off and dual use transfer).

However, there is more that we can do. By building even closer partnerships with industry, other agencies, Congress, State and local governments, trade associations, universities, and other organizations, we can help "bridge the gap" between the point where Federal R&D has historically stopped and the point where industry commitment to commercialization can be made. With the leadership and support of DOE and contractor management, the Department's programs, field offices, laboratories and other facilities can be more responsive to the needs of U.S. industry. In this way, we can help U.S. industry develop economically and environmentally superior products and processes, create new jobs, enhance the skill level of the U.S. labor force, and increase the tax base, all of which contribute to U.S. economic strength and national security.

Mission:

The DOE technology transfer mission is to help enhance U.S. competitiveness and national security, by expanding and accelerating the transfer of Federally-funded technologies and knowledge into commercial applications by U.S.-based industry.

Goals:

In support of this mission, DOE will:

1. Increase the level of U.S.-based industry participation in DOE's research and development at all stages of program development and execution.
2. Increase the level of DOE program and laboratory activity in transferring technology, consistent with other program missions and authorities.

3. Accelerate the process of transferring technology and knowledge to U.S.-based private industry and consumers and State and local governments.

Management Philosophy

Based on the analysis of the public input for the National Energy Strategy, as well as the inputs made by an intra-Departmental working group, DOE has developed a comprehensive, integrated technology transfer strategy. Our approach centers on a philosophy of fostering strengthened collaborative relationships between Federally-supported programs and U.S. private industry throughout all phases of the programs. One of the overriding principles of our approach is that technology transfer can be improved by introducing more "market pull," where technology development efforts are more focused on meeting an identified need. To encourage increased collaboration, we need to:

- o Improve the speed of the technology transfer process; and
- o Improve the predictability of that process.

Improving the speed of the process is supported by the principles of localized decision-making, flexibility to meet the varying needs of outside partners, and simplified procedures. Improving the predictability of the process is supported by the principles of management oversight, consistency and accountability across operations, and clearly articulated policies and guidelines. Achieving the appropriate balance requires a close partnership between DOE, its contractors, industry, and other participants in the technology transfer process.

Strategies

DOE will build on existing, successful technology transfer models to pursue the following strategies in accomplishing our goals:

Goal 1: Increase industry participation

- o Increase the use of cost-shared, collaborative agreements to better leverage public and private funds and to further encourage "market pull" of new technologies into and out of DOE programs and facilities.
- o Protect technologies and information that can be used to enhance U.S. competitiveness or national security, to the extent permitted by U.S. law, international treaties and agreements, and consistent with other DOE missions.
- o Establish clear policies on participation in collaborative programs and licensing agreements to ensure that the economic and technological benefits accrue to the U.S. economy.

- o Encourage all Departmental elements and other facilities to ensure fairness of opportunity for potential participants, recognizing the special needs of small businesses and non-profit organizations.

Goal 2: Increase DOE participation

- o Establish technology transfer as a fully-integrated mission of all Departmental elements, laboratories, and other appropriate facilities and evaluate the performance of each organization relative to fulfilling this mission.
- o Provide the sustained funding and resources necessary to implement the technology transfer mission, including support for cost-shared programs to develop "spinoff" applications and the development of generic, pre-competitive technologies.
- o Expand the use of incentives and recognition programs that encourage participation of Federal and contractor employees in the technology transfer program, including recognition for accelerating the conversion of DOE technology and know how into a form that can be protected, such as patents, copyrights, data, engineering drawings, etc.
- o Maintain support for basic scientific and technological research programs that are important to the Nation's long-term energy, economic, environmental, and national security goals, in order to retain a national pool of scientific and engineering expertise.

Goal 3: Accelerate the process

- o Develop more effective technology transfer partnerships between the DOE, its laboratories and other facilities, other Federal agencies, State and local governments, universities, industry, and various professional and industry associations.
- c Extend the use of end-user and technical advisory groups, industry consortia, joint ventures, and other interactive mechanisms to ensure industry input in all phases of research and development.
- o Improve "outreach" to industry, provide greater access to facilities that promote technology deployment, and increase the exchange of personnel and information between the laboratories, production plants and other facilities, and universities and industry.
- o Eliminate administrative barriers to collaboration between industry and DOE or its agents, by simplifying procedures and promoting greater consistency across operations.

Roles and Responsibilities

There are four general levels of management at the DOE that must be considered in identifying roles and responsibilities for managing technology transfer:

- o The Secretary of Energy. As the senior Departmental official, the Secretary of Energy provides the broad policy direction for the Department and implements technology transfer programs and policies through the Program Secretarial Officers. The Secretary relies on a variety of Senior Staff Officers to advise him and help implement his policy directions. These include the Deputy Secretary, Under Secretary, Deputy Under Secretary for Policy, Planning and Analysis, General Counsel, Assistant Secretary of Congressional Affairs, and the Directors of various staff support offices.
- o Program Secretarial Officers. This category includes Assistant Secretaries and Directors who have line management responsibilities for DOE's R&D and technology transfer programs (e.g., Energy Research, Fossil Energy, Defense Programs, Conservation and Renewable Energy, etc). Some of these officers also have management oversight responsibility for DOE's field offices, laboratories and facilities.
- o Field Office Managers. These offices include the eight operations offices and their affiliated area and regional support offices. In the case of Fossil Energy, this category may also encompass the Energy Technology Centers at Morgantown, WV, and Pittsburgh, PA, for certain activities.
- o Laboratory Director or Equivalent. Most of DOE's laboratories and facilities are run by Management and Operating (M&O) contractors. While the titles may vary, each laboratory and facility has a lead manager, employed by the contractor, who acts as an agent of the contractor in conducting technology transfer activities.

The broad roles and responsibilities of each of these management levels are as follows:

DOE Secretary

- o Establish the broad policies and guidelines that serve as the consistent framework within which the Department's technology transfer activities are conducted.
- o Coordinate with other agencies, Congress, and other national and international organizations in establishing policies and programs that facilitate private sector access to the scientific and technological capability of DOE and its laboratories and facilities.

- o Provide the required financial and human resources, including the necessary training and education, to support the technology transfer missions of DOE and its laboratories and other facilities.
- o Delegate, to the extent feasible, decision-making for the technology transfer program to the appropriate organizational level for effective implementation of the program, and provide adequate flexibility for these organizations to be responsive to the needs of the marketplace.
- o Establish and communicate the standards of performance and success by which these organizations will be measured, and review that progress.

Program Secretarial Officers

- o Determine each program's technology transfer role, within the broad policy framework of the Department and consistent with other programmatic missions and statutory authorities.
- o Provide input to the development of cross-cutting Departmental policies and procedures, assure coordination of activities that have multi-program implications, and promote the sharing of information on activities and "lessons learned" in technology transfer both inside and outside DOE.
- o Develop the supporting policies, strategies and plans to implement each program's technology transfer mission, consistent with other program missions, and to further delegate decision-making responsibility, as appropriate, to the field offices and facility directors.
- o Seek the necessary resources to implement these plans, and maintain oversight of those resources to assure appropriate uses.
- o Evaluate the progress and effectiveness of these technology transfer programs, whether they are managed directly by the program office or whether they have been delegated to a field office manager or facility director.
- o Conduct outreach initiatives that focus on program-specific third-party participants, such as industry consortia, State and local governments, universities, trade associations, etc.

Field Office Managers

- o Support and implement the directions and policies of the Secretary and Program Secretarial Officers.

- o Assist in formulating and refining Departmental and programmatic policies and procedures.
- o Negotiate appropriate technology transfer contract provisions with the M&O contractors on behalf of DOE.
- o Review and approve collaborative agreements in consultation with the Program Secretarial Officers.
- o Develop and improve local procedures for processing these agreements in a timely manner consistent with the guidance of DOE management.
- o Appraise and report on the technology transfer program of each DOE laboratory and facility.
- o Assure protection of intellectual property and commercially valuable information for the technology transfer mission.

Laboratory Director or Equivalent

- o Plan and conduct the laboratory or facility technology transfer program.
- o Provide input on policies and procedures.
- o Comply with contract provisions and any other agreed-upon policies, and define supporting lab facility procedures where required.
- o Plan, monitor, and evaluate the laboratory's or facility's technology transfer program, consistent with Departmental and programmatic guidance.
- o Demonstrate fiscal and mission responsibility to all missions while conducting the technology transfer mission.

Authorizations

As part of the National Defense Authorization Act for Fiscal Years 1990 and 1991 (Public Law 101-189), Congress enacted the National Competitiveness Technology Transfer Act (NCTTA) of 1989. The law further amends the Stevenson-Wydler Technology Innovation Act of 1980, which was previously amended by the Technology Transfer Act of 1986. The NCTTA directed DOE to offer contract provisions to establish technology transfer as a mission of DOE Government-Owned, Contractor-Operated (GOCO) research and development laboratories, setting forth new contract provisions and operating requirements for government agencies and their GOCOs. In addition, the law provides GOCO R&D laboratory

directors with the authority to negotiate and enter into Cooperative Research and Development Agreements (CRADAs) subject to approved joint work statements, similar to authority previously granted to the directors of Government-Owned, Government-Operated R&D laboratories.

The technology transfer mission of the R&D laboratories and facilities, including CRADAs, will be conducted in a manner that is consistent with the policy, principles, and purposes of the Stevenson-Wydler Technology Innovation Act of 1980 (as amended) (15 U.S.C. 3710(a)); Section 3132(b) of Public Law 101-189; chapter 18 of title 35, U.S. Code, commonly referred to as Bayh-Dole (35 U.S.C. 200 et seq); Section 152 of the Atomic Energy Act of 1954 (as amended) (42 U.S.C. 2182); Section 9 of the Federal Nonnuclear Energy Research and Development Act of 1974 (42 U.S.C. 5908); and Executive Order 12591 of April 10, 1987, and consistent with the overall technology transfer mission of the Department. The Office of Naval Nuclear Reactors will continue to perform technology transfer in accordance with applicable law and existing program policies.

The Deputy Secretary will continue to coordinate Departmental efforts to implement this enhanced technology transfer strategy.

James D. Watkins
Admiral, U.S. Navy (Retired)

Public Law 96-480
96th Congress

An Act

To promote United States technological innovation for the achievement of national economic, environmental, and social goals, and for other purposes.

Oct. 21, 1980
[S. 1250]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Stevenson-Wydler Technology Innovation Act of 1980".

Stevenson-
Wydler
Technology
Innovation Act
of 1980.
15 USC 3701
note.
15 USC 3701.

SEC. 2. FINDINGS.

The Congress finds and declares that:

(1) Technology and industrial innovation are central to the economic, environmental, and social well-being of citizens of the United States.

(2) Technology and industrial innovation offer an improved standard of living, increased public and private sector productivity, creation of new industries and employment opportunities, improved public services and enhanced competitiveness of United States products in world markets.

(3) Many new discoveries and advances in science occur in universities and Federal laboratories, while the application of this new knowledge to commercial and useful public purposes depends largely upon actions by business and labor. Cooperation among academia, Federal laboratories, labor, and industry, in such forms as technology transfer, personnel exchange, joint research projects, and others, should be renewed, expanded, and strengthened.

(4) Small businesses have performed an important role in advancing industrial and technological innovation.

(5) Industrial and technological innovation in the United States may be lagging when compared to historical patterns and other industrialized nations.

(6) Increased industrial and technological innovation would reduce trade deficits, stabilize the dollar, increase productivity gains, increase employment, and stabilize prices.

(7) Government antitrust, economic, trade, patent, procurement, regulatory, research and development, and tax policies have significant impacts upon industrial innovation and development of technology, but there is insufficient knowledge of their effects in particular sectors of the economy.

(8) No comprehensive national policy exists to enhance technological innovation for commercial and public purposes. There is a need for such a policy, including a strong national policy supporting domestic technology transfer and utilization of the science and technology resources of the Federal Government.

(9) It is in the national interest to promote the adaptation of technological innovations to State and local government uses. Technological innovations can improve services, reduce their costs, and increase productivity in State and local governments.

(10) The Federal laboratories and other performers of federally funded research and development frequently provide scientific

and technological developments of potential use to State and local governments and private industry. These developments should be made accessible to those governments and industry. There is a need to provide means of access and to give adequate personnel and funding support to these means.

(11) The Nation should give fuller recognition to individuals and companies which have made outstanding contributions to the promotion of technology or technological manpower for the improvement of the economic, environmental, or social well-being of the United States.

15 USC 3702.

SEC. 3. PURPOSE.

It is the purpose of this Act to improve the economic, environmental, and social well-being of the United States by—

- (1) establishing organizations in the executive branch to study and stimulate technology;
- (2) promoting technology development through the establishment of centers for industrial technology;
- (3) stimulating improved utilization of federally funded technology developments by State and local governments and the private sector;
- (4) providing encouragement for the development of technology through the recognition of individuals and companies which have made outstanding contributions in technology; and
- (5) encouraging the exchange of scientific and technical personnel among academia, industry, and Federal laboratories.

15 USC 3703.

SEC. 4. DEFINITIONS.

As used in this Act, unless the context otherwise requires, the term—

- (1) "Office" means the Office of Industrial Technology established under section 5 of this Act.
- (2) "Secretary" means the Secretary of Commerce.
- (3) "Director" means the Director of the Office of Industrial Technology, appointed pursuant to section 5 of this Act.
- (4) "Centers" means the Centers for Industrial Technology established under section 6 or section 8 of this Act.
- (5) "Nonprofit institution" means an organization owned and operated exclusively for scientific or educational purposes, no part of the net earnings of which inures to the benefit of any private shareholder or individual.
- (6) "Board" means the National Industrial Technology Board established pursuant to section 10.
- (7) "Federal laboratory" means any laboratory, any federally funded research and development center, or any center established under section 6 or section 8 of this Act that is owned and funded by the Federal Government, whether operated by the Government or by a contractor.
- (8) "Supporting agency" means either the Department of Commerce or the National Science Foundation, as appropriate.

Office of
Industrial
Technology,
establishment.
15 USC 3704.

SEC. 5. COMMERCE AND TECHNOLOGICAL INNOVATION.

(a) **IN GENERAL.**—The Secretary shall establish and maintain an Office of Industrial Technology in accordance with the provisions, findings, and purposes of this Act.

(b) **DIRECTOR.**—The President shall appoint, by and with the advice and consent of the Senate, a Director of the Office, who shall be

compensated at the rate provided for level V of the Executive Schedule in section 5316 of title 5, United States Code.

(c) DUTIES.—The Secretary, through the Director, on a continuing basis, shall—

(1) determine the relationships of technological developments and international technology transfers to the output, employment, productivity, and world trade performance of United States and foreign industrial sectors;

(2) determine the influence of economic, labor and other conditions, industrial structure and management, and government policies on technological developments in particular industrial sectors worldwide;

(3) identify technological needs, problems, and opportunities within and across industrial sectors that, if addressed, could make a significant contribution to the economy of the United States;

(4) assess whether the capital, technical and other resources being allocated to domestic industrial sectors which are likely to generate new technologies are adequate to meet private and social demands for goods and services and to promote productivity and economic growth;

(5) propose and support studies and policy experiments, in cooperation with other Federal agencies, to determine the effectiveness of measures with the potential of advancing United States technological innovation;

(6) provide that cooperative efforts to stimulate industrial innovation be undertaken between the Director and other officials in the Department of Commerce responsible for such areas as trade and economic assistance;

(7) consider government measures with the potential of advancing United States technological innovation and exploiting innovations of foreign origin; and

(8) publish the results of studies and policy experiments.

(d) REPORT.—The Secretary shall prepare and submit to the President and Congress, within 3 years after the date of enactment of this Act, a report on the progress, findings, and conclusions of activities conducted pursuant to sections 5, 6, 8, 11, 12, and 13 of this Act and recommendations for possible modifications thereof.

Submittal to
President and
Congress.

SEC. 6. CENTERS FOR INDUSTRIAL TECHNOLOGY.

15 USC 3705.

(a) ESTABLISHMENT.—The Secretary shall provide assistance for the establishment of Centers for Industrial Technology. Such Centers shall be affiliated with any university, or other nonprofit institution, or group thereof, that applies for and is awarded a grant or enters into a cooperative agreement under this section. The objective of the Centers is to enhance technological innovation through—

(1) the participation of individuals from industry and universities in cooperative technological innovation activities;

(2) the development of the generic research base, important for technological advance and innovative activity, in which individual firms have little incentive to invest, but which may have significant economic or strategic importance, such as manufacturing technology;

(3) the education and training of individuals in the technological innovation process;

(4) the improvement of mechanisms for the dissemination of scientific, engineering, and technical information among universities and industry;

(5) the utilization of the capability and expertise, where appropriate, that exists in Federal laboratories; and

(6) the development of continuing financial support from other mission agencies, from State and local government, and from industry and universities through, among other means, fees, licenses, and royalties.

(b) **ACTIVITIES.**—The activities of the Centers shall include, but need not be limited to—

(1) research supportive of technological and industrial innovation including cooperative industry-university basic and applied research;

(2) assistance to individuals and small businesses in the generation, evaluation and development of technological ideas supportive of industrial innovation and new business ventures;

(3) technical assistance and advisory services to industry, particularly small businesses; and

(4) curriculum development, training, and instruction in invention, entrepreneurship, and industrial innovation.

Each Center need not undertake all of the activities under this subsection.

(c) **REQUIREMENTS.**—Prior to establishing a Center, the Secretary shall find that—

(1) consideration has been given to the potential contribution of the activities proposed under the Center to productivity, employment, and economic competitiveness of the United States;

(2) a high likelihood exists of continuing participation, advice, financial support, and other contributions from the private sector;

(3) the host university or other nonprofit institution has a plan for the management and evaluation of the activities proposed within the particular Center, including:

(A) the agreement between the parties as to the allocation of patent rights on a nonexclusive, partially exclusive, or exclusive license basis to and inventions conceived or made under the auspices of the Center; and

(B) the consideration of means to place the Center, to the maximum extent feasible, on a self-sustaining basis;

(4) suitable consideration has been given to the university's or other nonprofit institution's capabilities and geographical location; and

(5) consideration has been given to any effects upon competition of the activities proposed under the Center.

(d) **PLANNING GRANTS.**—The Secretary is authorized to make available nonrenewable planning grants to universities or nonprofit institutions for the purpose of developing a plan required under subsection (c)(3).

Inventions, title acquisition.

(e) **RESEARCH AND DEVELOPMENT UTILIZATION.**—(1) To promote technological innovation and commercialization of research and development efforts, each Center has the option of acquiring title to any invention conceived or made under the auspices of the Center that was supported at least in part by Federal funds: *Provided*, That—

(A) the Center reports the invention to the supporting agency together with a list of each country in which the Center elects to file a patent application on the invention;

(B) said option shall be exercised at the time of disclosure of invention or within such time thereafter as may be provided in the grant or cooperative agreement;

(C) the Center intends to promote the commercialization of the invention and file a United States patent application;

(D) royalties be used for compensation of the inventor or for educational or research activities of the Center;

(E) the Center make periodic reports to the supporting agency, and the supporting agency may treat information contained in such reports as privileged and confidential technical, commercial, and financial information and not subject to disclosures under the Freedom of Information Act; and

(F) any Federal department or agency shall have the royalty-free right to practice, or have practiced on its behalf, the invention for governmental purposes.

The supporting agency shall have the right to acquire title to any patent on an invention in any country in which the Center elects not to file a patent application or fails to file within a reasonable time.

(2) Where a Center has retained title to an invention under paragraph (1) of this subsection the supporting agency shall have the right to require the Center or its licensee to grant a nonexclusive, partially exclusive, or exclusive license to a responsible applicant or applicants, upon terms that are reasonable under the circumstances, if the supporting agency determines, after public notice and opportunity for hearing, that such action is necessary—

(A) because the Center or licensee has not taken and is not expected to take timely and effective action to achieve practical application of the invention;

(B) to meet health, safety, environmental, or national security needs which are not reasonably satisfied by the contractor or licensee; or

(C) because the granting of exclusive rights in the invention has tended substantially to lessen competition or to result in undue market concentration in the United States in any line of commerce to which the technology relates.

(3) Any individual, partnership, corporation, association, institution, or other entity adversely affected by a supporting agency determination made under paragraph (2) of this subsection may, at any time within 60 days after the determination is issued, file a petition to the United States Court of Claims which shall have jurisdiction to determine that matter de novo and to affirm, reverse, or modify as appropriate, the determination of the supporting agency.

(f) ADDITIONAL CONSIDERATION.—The supporting agency may request the Attorney General's opinion whether the proposed joint research activities of a Center would violate any of the antitrust laws. The Attorney General shall advise the supporting agency of his determination and the reasons for it within 120 days after receipt of such request.

SEC. 7. GRANTS AND COOPERATIVE AGREEMENTS.

(a) IN GENERAL.—The Secretary may make grants and enter into cooperative agreements according to the provisions of this section in order to assist any activity consistent with this Act, including activities performed by individuals. The total amount of any such grant or cooperative agreement may not exceed 75 percent of the total cost of the program.

(b) ELIGIBILITY AND PROCEDURE.—Any person or institution may apply to the Secretary for a grant or cooperative agreement available under this section. Application shall be made in such form and manner, and with such content and other submissions, as the Direc-

Applicant
licensing
requirement.

U.S. Courts of
Claims, petition.

Antitrust laws.

15 USC 3706.

tor shall prescribe. The Secretary shall act upon each such application within 90 days after the date on which all required information is received.

(c) **TERMS AND CONDITIONS.**—

(1) Any grant made, or cooperative agreement entered into, under this section shall be subject to the limitations and provisions set forth in paragraph (2) of this subsection, and to such other terms, conditions, and requirements as the Secretary deems necessary or appropriate.

(2) Any person who receives or utilizes any proceeds of any grant made or cooperative agreement entered into under this section shall keep such records as the Secretary shall by regulation prescribe as being necessary and appropriate to facilitate effective audit and evaluation, including records which fully disclose the amount and disposition by such recipient of such proceeds, the total cost of the program or project in connection with which such proceeds were used, and the amount, if any, of such costs which was provided through other sources.

15 USC 3707.

SEC. 8. NATIONAL SCIENCE FOUNDATION CENTERS FOR INDUSTRIAL TECHNOLOGY.

(a) **ESTABLISHMENT AND PROVISIONS.**—The National Science Foundation shall provide assistance for the establishment of Centers for Industrial Technology. Such Centers shall be affiliated with a university, or other nonprofit institution, or a group thereof. The objective of the Centers is to enhance technological innovation as provided in section 6(a) through the conduct of activities as provided in section 6(b). The provisions of sections 6(e) and 6(f) shall apply to Centers established under this section.

(b) **PLANNING GRANTS.**—The National Science Foundation is authorized to make available nonrenewable planning grants to universities or nonprofit institutions for the purpose of developing the plan, as described under section 6(c)(3).

(c) **TERMS AND CONDITIONS.**—Grants, contracts, and cooperative agreements entered into by the National Science Foundation in execution of the powers and duties of the National Science Foundation under this Act shall be governed by the National Science Foundation Act of 1950 and other pertinent Acts.

42 USC 1861
note.

15 USC 3708.

SEC. 9. ADMINISTRATIVE ARRANGEMENTS.

(a) **COORDINATION.**—The Secretary and the National Science Foundation shall, on a continuing basis, obtain the advice and cooperation of departments and agencies whose missions contribute to or are affected by the programs established under this Act, including the development of an agenda for research and policy experimentation. These departments and agencies shall include but not be limited to the Departments of Defense, Energy, Education, Health and Human Services, Housing and Urban Development, the Environmental Protection Agency, National Aeronautics and Space Administration, Small Business Administration, Council of Economic Advisers, Council on Environmental Quality, and Office of Science and Technology Policy.

(b) **COOPERATION.**—It is the sense of the Congress that departments and agencies, including the Federal laboratories, whose missions are affected by, or could contribute to, the programs established under this Act, should, within the limits of budgetary authorizations and appropriations, support or participate in activities or projects authorized by this Act.

(c) **ADMINISTRATIVE AUTHORIZATION.**—

(1) Departments and agencies described in subsection (b) are authorized to participate in, contribute to, and serve as resources for the Centers and for any other activities authorized under this Act.

(2) The Secretary and the National Science Foundation are authorized to receive moneys and to receive other forms of assistance from other departments or agencies to support activities of the Centers and any other activities authorized under this Act.

(d) **COOPERATIVE EFFORTS.**—The Secretary and the National Science Foundation shall, on a continuing basis, provide each other the opportunity to comment on any proposed program of activity under section 6, 8, or 13 of this Act before funds are committed to such program in order to mount complementary efforts and avoid duplication.

SEC. 10. NATIONAL INDUSTRIAL TECHNOLOGY BOARD.

15 USC 3709.

(a) **ESTABLISHMENT.**—There shall be established a committee to be known as the National Industrial Technology Board.

(b) **DUTIES.**—The Board shall take such steps as may be necessary to review annually the activities of the Office and advise the Secretary and the Director with respect to—

(1) the formulation and conduct of activities under section 5 of this title;

(2) the designation and operation of Centers and their programs under section 6 of this Act including assistance in establishing priorities;

(3) the preparation of the report required under section 5(d); and

(4) such other matters as the Secretary or Director refers to the Board, including the establishment of Centers under section 8 of this Act, for review and advice.

The Director shall make available to the Board such information, personnel, and administrative services and assistance as it may reasonably require to carry out its duties. The National Science Foundation shall make available to the Board such information and assistance as it may reasonably require to carry out its duties.

(c) **MEMBERSHIP, TERMS, AND POWERS.**—

(1) The Board shall consist of 15 voting members who shall be appointed by the Secretary. The Director shall serve as a nonvoting member of the Board. The members of the Board shall be individuals who, by reason of knowledge, experience, or training are especially qualified in one or more of the disciplines and fields dealing with technology, labor, and industrial innovation or who are affected by technological innovation. The majority of the members of the Board shall be individuals from industry and business.

(2) The term of office of a voting member of the Board shall be 3 years, except that of the original appointees, five shall be appointed for a term of 1 year, five shall be appointed for a term of 2 years, and five shall be appointed for a term of 3 years.

(3) Any individual appointed to fill a vacancy occurring before the expiration of the term for which his or her predecessor was appointed shall be appointed only for the remainder of such term. No individual may be appointed as a voting member after serving more than two full terms as such a member.

(4) The Board shall select a voting member to serve as the Chairperson and another voting member to serve as the Vice Chairperson. The Vice Chairperson shall perform the functions of the Chairperson in the absence or incapacity of the Chairperson.

(5) Voting members of the Board may receive compensation at a daily rate for GS-18 of the General Schedule under section 5332 of title 5, United States Code, when actually engaged in the performance of duties for such Board, and may be reimbursed for actual and reasonable expenses incurred in the performance of such duties.

15 USC 3710

SEC. 11. UTILIZATION OF FEDERAL TECHNOLOGY.

Technology
transfer

(a) **POLICY.**—It is the continuing responsibility of the Federal Government to ensure the full use of the results of the Nation's Federal investment in research and development. To this end the Federal Government shall strive where appropriate to transfer federally owned or originated technology to State and local governments and to the private sector.

Waiver.
Submittal to
Congress.

(b) **ESTABLISHMENT OF RESEARCH AND TECHNOLOGY APPLICATIONS OFFICES.**—Each Federal laboratory shall establish an Office of Research and Technology Applications. Laboratories having existing organizational structures which perform the functions of this section may elect to combine the Office of Research and Technology Applications within the existing organization. The staffing and funding levels for these offices shall be determined between each Federal laboratory and the Federal agency operating or directing the laboratory, except that (1) each laboratory having a total annual budget exceeding \$20,000,000 shall provide at least one professional individual full-time as staff for its Office of Research and Technology Applications, and (2) after September 30, 1981, each Federal agency which operates or directs one or more Federal laboratories shall make available not less than 0.5 percent of the agency's research and development budget to support the technology transfer function at the agency and at its laboratories, including support of the Offices of Research and Technology Applications. The agency head may waive the requirements set forth in (1) and/or (2) of this subsection. If the agency head waives either requirement (1) or (2), the agency head shall submit to Congress at the time the President submits the budget to Congress an explanation of the reasons for the waiver and alternate plans for conducting the technology transfer function at the agency.

(c) **FUNCTIONS OF RESEARCH AND TECHNOLOGY APPLICATIONS OFFICES.**—It shall be the function of each Office of Research and Technology Applications—

(1) to prepare an application assessment of each research and development project in which that laboratory is engaged which has potential for successful application in State or local government or in private industry;

(2) to provide and disseminate information on federally owned or originated products, processes, and services having potential application to State and local governments and to private industry;

(3) to cooperate with and assist the Center for the Utilization of Federal Technology and other organizations which link the research and development resources of that laboratory and the Federal Government as a whole to potential users in State and local government and private industry; and

(4) to provide technical assistance in response to requests from State and local government officials.

Agencies which have established organizational structures outside their Federal laboratories which have as their principal purpose the transfer of federally owned or originated technology to State and local government and to the private sector may elect to perform the functions of this subsection in such organizational structures. No Office of Research and Technology Applications or other organizational structures performing the functions of this subsection shall substantially compete with similar services available in the private sector.

(d) **CENTER FOR THE UTILIZATION OF FEDERAL TECHNOLOGY.**—There is hereby established in the Department of Commerce a Center for the Utilization of Federal Technology. The Center for the Utilization of Federal Technology shall—

Establishment.

(1) serve as a central clearinghouse for the collection, dissemination and transfer of information on federally owned or originated technologies having potential application to State and local governments and to private industry;

(2) coordinate the activities of the Offices of Research and Technology Applications of the Federal laboratories;

(3) utilize the expertise and services of the National Science Foundation and the existing Federal Laboratory Consortium for Technology Transfer; particularly in dealing with State and local governments;

(4) receive requests for technical assistance from State and local governments and refer these requests to the appropriate Federal laboratories;

(5) provide funding, at the discretion of the Secretary, for Federal laboratories to provide the assistance specified in subsection (c)(4); and

(6) use appropriate technology transfer mechanisms such as personnel exchanges and computer-based systems.

(e) **AGENCY REPORTING.**—Each Federal agency which operates or directs one or more Federal laboratories shall prepare biennially a report summarizing the activities performed by that agency and its Federal laboratories pursuant to the provisions of this section. The report shall be transmitted to the Center for the Utilization of Federal Technology by November 1 of each year in which it is due.

SEC. 12. NATIONAL TECHNOLOGY MEDAL.

15 USC 3711.

(a) **ESTABLISHMENT.**—There is hereby established a National Technology Medal, which shall be of such design and materials and bear such inscriptions as the President, on the basis of recommendations submitted by the Office of Science and Technology Policy, may prescribe.

(b) **AWARD.**—The President shall periodically award the medal, on the basis of recommendations received from the Secretary or on the basis of such other information and evidence as he deems appropriate, to individuals or companies, which in his judgment are deserving of special recognition by reason of their outstanding contributions to the promotion of technology or technological manpower for the improvement of the economic, environmental, or social well-being of the United States.

(c) **PRESENTATION.**—The presentation of the award shall be made by the President with such ceremonies as he may deem proper.

15 USC 3712. **SEC. 13. PERSONNEL EXCHANGES.**

The Secretary and the National Science Foundation, jointly, shall establish a program to foster the exchange of scientific and technical personnel among academia, industry, and Federal laboratories. Such program shall include both (1) federally supported exchanges and (2) efforts to stimulate exchanges without Federal funding.

15 USC 3713. **SEC. 14. AUTHORIZATION OF APPROPRIATIONS.**

(a) There is authorized to be appropriated to the Secretary for purposes of carrying out section 6, not to exceed \$19,000,000 for the fiscal year ending September 30, 1981, \$40,000,000 for the fiscal year ending September 30, 1982, \$50,000,000 for the fiscal year ending September 30, 1983, and \$60,000,000 for each of the fiscal years ending September 30, 1984, and 1985.

(b) In addition to authorizations of appropriations under subsection (a), there is authorized to be appropriated to the Secretary for purposes of carrying out the provisions of this Act, not to exceed \$5,000,000 for the fiscal year ending September 30, 1981, \$9,000,000 for the fiscal year ending September 30, 1982, and \$14,000,000 for each of the fiscal years ending September 30, 1983, 1984, and 1985.

(c) Such sums as may be appropriated under subsections (a) and (b) shall remain available until expended.

(d) To enable the National Science Foundation to carry out its powers and duties under this Act only such sums may be appropriated as the Congress may authorize by law.

15 USC 3714. **SEC. 15. SPENDING AUTHORITY.**

No payments shall be made or contracts shall be entered into pursuant to this Act except to such extent or in such amounts as are provided in advance in appropriation Acts.

Approved October 21, 1980.

LEGISLATIVE HISTORY:

HOUSE REPORT No. 96-1199 (Comm. on Science and Technology).
SENATE REPORT No. 96-781 (Comm. on Commerce, Science, and Transportation).
CONGRESSIONAL RECORD, Vol. 126 (1980):
May 28, considered and passed Senate.
Sept. 8, considered and passed House, amended.
Sept. 26, Senate concurred in certain House amendments, disagreed to others, and concurred in remainder with amendments.
Oct. 1, House receded from amendments in disagreement and concurred in Senate amendments.
WEEKLY COMPILATION OF PRESIDENTIAL DOCUMENTS, Vol. 16, No. 43:
Oct. 21, Presidential statement.

Public Law 96-517
96th Congress

An Act

To amend the patent and trademark laws.

Dec. 12, 1980

[H.R. 6933]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That title 35 of the United States Code, entitled "Patents", is amended by adding after chapter 29 the following new chapter 30:

Patent and
trademark laws,
amendment.**"CHAPTER 30—PRIOR ART CITATIONS TO OFFICE AND
REEXAMINATION OF PATENTS**

"Sec.

"301. Citation of prior art.

"302. Request for reexamination.

"303. Determination of issue by Commissioner.

"304. Reexamination order by Commissioner.

"305. Conduct of reexamination proceedings.

"306. Appeal.

"307. Certificate of patentability, unpatentability, and claim cancellation.

"§ 301. Citation of prior art

35 USC 301.

"Any person at any time may cite to the Office in writing prior art consisting of patents or printed publications which that person believes to have a bearing on the patentability of any claim of a particular patent. If the person explains in writing the pertinency and manner of applying such prior art to at least one claim of the patent, the citation of such prior art and the explanation thereof will become a part of the official file of the patent. At the written request of the person citing the prior art, his or her identity will be excluded from the patent file and kept confidential.

"§ 302. Request for reexamination

35 USC 302.

"Any person at any time may file a request for reexamination by the Office of any claim of a patent on the basis of any prior art cited under the provisions of section 301 of this title. The request must be in writing and must be accompanied by payment of a reexamination fee established by the Commissioner of Patents pursuant to the provisions of section 41 of this title. The request must set forth the pertinency and manner of applying cited prior art to every claim for which reexamination is requested. Unless the requesting person is the owner of the patent, the Commissioner promptly will send a copy of the request to the owner of record of the patent.

Fee.

Post, p. 3017.

"§ 303. Determination of issue by Commissioner

35 USC 303.

"(a) Within three months following the filing of a request for reexamination under the provisions of section 302 of this title, the Commissioner will determine whether a substantial new question of patentability affecting any claim of the patent concerned is raised by the request, with or without consideration of other patents or printed publications. On his own initiative, and any time, the Commissioner may determine whether a substantial new question of patentability is

- raised by patents and publications discovered by him or cited under the provisions of section 301 of this title.
- Record. “(b) A record of the Commissioner's determination under subsection (a) of this section will be placed in the official file of the patent, and a copy promptly will be given or mailed to the owner of record of the patent and to the person requesting reexamination, if any.
- Refund “(c) A determination by the Commissioner pursuant to subsection (a) of this section that no substantial new question of patentability has been raised will be final and nonappealable. Upon such a determination, the Commissioner may refund a portion of the reexamination fee required under section 302 of this title.
- 35 USC 304. **“§ 304. Reexamination order by Commissioner**
- Filing period. “If, in a determination made under the provisions of subsection 303(a) of this title, the Commissioner finds that a substantial new question of patentability affecting any claim of a patent is raised, the determination will include an order for reexamination of the patent for resolution of the question. The patent owner will be given a reasonable period, not less than two months from the date a copy of the determination is given or mailed to him, within which he may file a statement on such question, including any amendment to his patent and new claim or claims he may wish to propose, for consideration in the reexamination. If the patent owner files such a statement, he promptly will serve a copy of it on the person who has requested reexamination under the provisions of section 302 of this title. Within a period of two months from the date of service, that person may file and have considered in the reexamination a reply to any statement filed by the patent owner. That person promptly will serve on the patent owner a copy of any reply filed.
- 35 USC 305. **“§ 305. Conduct of reexamination proceedings**
- 35 USC 132, 133. “After the times for filing the statement and reply provided for by section 304 of this title have expired, reexamination will be conducted according to the procedures established for initial examination under the provisions of sections 132 and 133 of this title. In any reexamination proceeding under this chapter, the patent owner will be permitted to propose any amendment to his patent and a new claim or claims thereto, in order to distinguish the invention as claimed from the prior art cited under the provisions of section 301 of this title, or in response to a decision adverse to the patentability of a claim of a patent. No proposed amended or new claim enlarging the scope of a claim of the patent will be permitted in a reexamination proceeding under this chapter. All reexamination proceedings under this section, including any appeal to the Board of Appeals, will be conducted with special dispatch within the Office.
- 35 USC 306. **“§ 306. Appeal**
- 35 USC 134.
35 USC 141-145. “The patent owner involved in a reexamination proceeding under this chapter may appeal under the provisions of section 134 of this title, and may seek court review under the provisions of sections 141 to 145 of this title, with respect to any decision adverse to the patentability of any original or proposed amended or new claim of the patent.
- 35 USC 307. **“§ 307. Certificate of patentability, unpatentability, and claim cancellation**
- “(a) In a reexamination proceeding under this chapter, when the time for appeal has expired or any appeal proceeding has terminated,

the Commissioner will issue and publish a certificate canceling any claim of the patent finally determined to be unpatentable, confirming any claim of the patent determined to be patentable, and incorporating in the patent any proposed amended or new claim determined to be patentable.

"(b) Any proposed amended or new claim determined to be patentable and incorporated into a patent following a reexamination proceeding will have the same effect as that specified in section 252 of this title for reissued patents on the right of any person who made, purchased, or used anything patented by such proposed amended or new claim, or who made substantial preparation for the same, prior to issuance of a certificate under the provisions of subsection (a) of this section."

35 USC 252.

SEC. 2. Section 41 of title 35, United States Code, is amended to read as follows:

"§ 41. Patent fees

35 USC 41.

"(a) The Commissioner of Patents will establish fees for the processing of an application for a patent, from filing through disposition by issuance or abandonment, for maintaining a patent in force, and for providing all other services and materials related to patents. No fee will be established for maintaining a design patent in force.

"(b) By the first day of the first fiscal year beginning on or after one calendar year after enactment of this Act, fees for the actual processing of an application for a patent, other than for a design patent, from filing through disposition by issuance or abandonment, will recover in aggregate 25 per centum of the estimated average cost to the Office of such processing. By the first day of the first fiscal year beginning on or after one calendar year after enactment, fees for the processing of an application for a design patent, from filing through disposition by issuance or abandonment, will recover in aggregate 50 per centum of the estimated average cost to the Office of such processing.

"(c) By the fifteenth fiscal year following the date of enactment of this Act, fees for maintaining patents in force will recover 25 per centum of the estimated cost to the Office, for the year in which such maintenance fees are received, of the actual processing all applications for patents, other than for design patents, from filing through disposition by issuance or abandonment. Fees for maintaining a patent in force will be due three years and six months, seven years and six months, and eleven years and six months after the grant of the patent. Unless payment of the applicable maintenance fee is received in the Patent and Trademark Office on or before the date the fee is due or within a grace period of six months thereafter, the patent will expire as of the end of such grace period. The Commissioner may require the payment of a surcharge as a condition of accepting within such six-month grace period the late payment of an applicable maintenance fee.

"(d) By the first day of the first fiscal year beginning on or after one calendar year after enactment, fees for all other services or materials related to patents will recover the estimated average cost to the Office of performing the service or furnishing the material. The yearly fee for providing a library specified in section 13 of this title with uncertified printed copies of the specifications and drawings for all patents issued in that year will be \$50.

35 USC 13.

"(e) The Commissioner may waive the payment of any fee for any service or material related to patents in connection with an occasional or incidental request made by a department or agency of the

Waiver.

- 35 USC 132. Government, or any officer thereof. The Commissioner may provide any applicant issued a notice under section 132 of this title with a copy of the specifications and drawings for all patents referred to in that notice without charge.
- Notice. "(f) Fees will be adjusted by the Commissioner to achieve the levels of recovery specified in this section; however, no patent application processing fee or fee for maintaining a patent in force will be adjusted more than once every three years.
- "(g) No fee established by the Commissioner under this section will take effect prior to sixty days following notice in the Federal Register."
- SEC. 3. Section 42 of title 35, United States Code, is amended to read as follows:
- 35 USC 42. **"§ 42. Patent and Trademark Office funding**
- "(a) All fees for services performed by or materials furnished by the Patent and Trademark Office will be payable to the Commissioner.
- "(b) All fees paid to the Commissioner and all appropriations for defraying the costs of the activities of the Patent and Trademark Office will be credited to the Patent and Trademark Office Appropriation Account in the Treasury of the United States, the provisions of section 725e of title 31, United States Code, notwithstanding.
- "(c) Revenues from fees will be available to the Commissioner of Patents to carry out, to the extent provided for in appropriation Acts, the activities of the Patent and Trademark Office.
- Refund. "(d) The Commissioner may refund any fee paid by mistake or any amount paid in excess of that required."
- SEC. 4. Section 154 of title 35, United States Code, is amended by deleting the word "issue".
- SEC. 5. Section 31 of the Trademark Act of 1946, as amended (15 U.S.C. 1113), is amended to read as follows:
- "§ 31. Fees**
- "(a) The Commissioner of Patents will establish fees for the filing and processing of an application for the registration of a trademark or other mark and for all other services performed by and materials furnished by the Patent and Trademark Office related to trademarks and other marks. Fees will be set and adjusted by the Commissioner to recover in aggregate 50 per centum of the estimated average cost to the Office of such processing. Fees for all other services or materials related to trademarks and other marks will recover the estimated average cost to the Office of performing the service or furnishing the material. However, no fee for the filing or processing of an application for the registration of a trademark or other mark or for the renewal or assignment of a trademark or other mark will be adjusted more than once every three years. No fee established under this section will take effect prior to sixty days following notice in the Federal Register.
- Notice. "(b) The Commissioner may waive the payment of any fee for any service or material related to trademarks or other marks in connection with an occasional request made by a department or agency of the Government, or any officer thereof. The Indian Arts and Crafts Board will not be charged any fee to register Government trademarks of genuineness and quality for Indian products or for products of particular Indian tribes and groups."
- Waiver. "Indian products, exception.
- SEC. 6. (a) Title 35 of the United States Code, entitled "Patents", is amended by adding after chapter 37 the following new chapter 38:

**"CHAPTER 38—PATENT RIGHTS IN INVENTIONS MADE
WITH FEDERAL ASSISTANCE****"Sec.****"200. Policy and objective.****"201. Definitions.****"202. Disposition of rights.****"203. March-in rights.****"204. Preference for United States industry.****"205. Confidentiality.****"206. Uniform clauses and regulations.****"207. Domestic and foreign protection of federally owned inventions.****"208. Regulations governing Federal licensing.****"209. Restrictions on licensing of federally owned inventions.****"210. Precedence of chapter.****"211. Relationship to antitrust laws.****"§ 200. Policy and objective**

35 USC 200.

"It is the policy and objective of the Congress to use the patent system to promote the utilization of inventions arising from federally supported research or development; to encourage maximum participation of small business firms in federally supported research and development efforts; to promote collaboration between commercial concerns and nonprofit organizations, including universities; to ensure that inventions made by nonprofit organizations and small business firms are used in a manner to promote free competition and enterprise; to promote the commercialization and public availability of inventions made in the United States by United States industry and labor; to ensure that the Government obtains sufficient rights in federally supported inventions to meet the needs of the Government and protect the public against nonuse or unreasonable use of inventions; and to minimize the costs of administering policies in this area.

"§ 201. Definitions

35 USC 201.

"As used in this chapter—

"(a) The term 'Federal agency' means any executive agency as defined in section 105 of title 5, United States Code, and the military departments as defined by section 102 of title 5, United States Code.

"(b) The term 'funding agreement' means any contract, grant, or cooperative agreement entered into between any Federal agency, other than the Tennessee Valley Authority, and any contractor for the performance of experimental, developmental, or research work funded in whole or in part by the Federal Government. Such term includes any assignment, substitution of parties, or subcontract of any type entered into for the performance of experimental, developmental, or research work under a funding agreement as herein defined.

"(c) The term 'contractor' means any person, small business firm, or nonprofit organization that is a party to a funding agreement.

"(d) The term 'invention' means any invention or discovery which is or may be patentable or otherwise protectable under this title.

"(e) The term 'subject invention' means any invention of the contractor conceived or first actually reduced to practice in the performance of work under a funding agreement.

"(f) The term 'practical application' means to manufacture in the case of a composition or product, to practice in the case of a process or method, or to operate in the case of a machine or system; and, in each case, under such conditions as to establish

that the invention is being utilized and that its benefits are to the extent permitted by law or Government regulations available to the public on reasonable terms.

"(g) The term 'made' when used in relation to any invention means the conception or first actual reduction to practice of such invention.

"(h) The term 'small business firm' means a small business concern as defined at section 2 of Public Law 85-536 (15 U.S.C. 632) and implementing regulations of the Administrator of the Small Business Administration.

"(i) The term 'nonprofit organization' means universities and other institutions of higher education or an organization of the type described in section 501(c)(3) of the Internal Revenue Code of 1954 (26 U.S.C. 501(c)) and exempt from taxation under section 501(a) of the Internal Revenue Code (26 U.S.C. 501(a)) or any nonprofit scientific or educational organization qualified under a State nonprofit organization statute.

35 USC 202.

"§ 202. Disposition of rights

Funding
agreement.

"(a) Each nonprofit organization or small business firm may, within a reasonable time after disclosure as required by paragraph (c)(1) of this section, elect to retain title to any subject invention: *Provided, however,* That a funding agreement may provide otherwise (i) when the funding agreement is for the operation of a Government-owned research or production facility, (ii) in exceptional circumstances when it is determined by the agency that restriction or elimination of the right to retain title to any subject invention will better promote the policy and objectives of this chapter or (iii) when it is determined by a Government authority which is authorized by statute or Executive order to conduct foreign intelligence or counter-intelligence activities that the restriction or elimination of the right to retain title to any subject invention is necessary to protect the security of such activities. The rights of the nonprofit organization or small business firm shall be subject to the provisions of paragraph (c) of this section and the other provisions of this chapter.

Written
determination.

Copy to
Comptroller
General.

Copy to SBA.

Contrary agency
determinations.

Report to
congressional
committees.

"(b)(1) Any determination under (ii) of paragraph (a) of this section shall be in writing and accompanied by a written statement of facts justifying the determination. A copy of each such determination and justification shall be sent to the Comptroller General of the United States within thirty days after the award of the applicable funding agreement. In the case of determinations applicable to funding agreements with small business firms copies shall also be sent to the Chief Counsel for Advocacy of the Small Business Administration.

"(2) If the Comptroller General believes that any pattern of determinations by a Federal agency is contrary to the policy and objectives of this chapter or that an agency's policies or practices are otherwise not in conformance with this chapter, the Comptroller General shall so advise the head of the agency. The head of the agency shall advise the Comptroller General in writing within one hundred and twenty days of what action, if any, the agency has taken or plans to take with respect to the matters raised by the Comptroller General.

"(3) At least once each year, the Comptroller General shall transmit a report to the Committees on the Judiciary of the Senate and House of Representatives on the manner in which this chapter is being implemented by the agencies and on such other aspects of Government patent policies and practices with respect to federally funded inventions as the Comptroller General believes appropriate.

"(c) Each funding agreement with a small business firm or non-profit organization shall contain appropriate provisions to effectuate the following:

Funding
agreement
requirements.

"(1) A requirement that the contractor disclose each subject invention to the Federal agency within a reasonable time after it is made and that the Federal Government may receive title to any subject invention not reported to it within such time.

"(2) A requirement that the contractor make an election to retain title to any subject invention within a reasonable time after disclosure and that the Federal Government may receive title to any subject invention in which the contractor does not elect to retain rights or fails to elect rights within such time.

"(3) A requirement that a contractor electing rights file patent applications within reasonable times and that the Federal Government may receive title to any subject inventions in the United States or other countries in which the contractor has not filed patent applications on the subject invention within such times.

"(4) With respect to any invention in which the contractor elects rights, the Federal agency shall have a nonexclusive, nontransferable, irrevocable, paid-up license to practice or have practiced for or on behalf of the United States any subject invention throughout the world, and may, if provided in the funding agreement, have additional rights to sublicense any foreign government or international organization pursuant to any existing or future treaty or agreement.

"(5) The right of the Federal agency to require periodic reporting on the utilization or efforts at obtaining utilization that are being made by the contractor or his licensees or assignees: *Provided*, That any such information may be treated by the Federal agency as commercial and financial information obtained from a person and privileged and confidential and not subject to disclosure under section 552 of title 5 of the United States Code.

"(6) An obligation on the part of the contractor, in the event a United States patent application is filed by or on its behalf or by any assignee of the contractor, to include within the specification of such application and any patent issuing thereon, a statement specifying that the invention was made with Government support and that the Government has certain rights in the invention.

"(7) In the case of a nonprofit organization, (A) a prohibition upon the assignment of rights to a subject invention in the United States without the approval of the Federal agency, except where such assignment is made to an organization which has as one of its primary functions the management of inventions and which is not, itself, engaged in or does not hold a substantial interest in other organizations engaged in the manufacture or sale of products or the use of processes that might utilize the invention or be in competition with embodiments of the invention (provided that such assignee shall be subject to the same provisions as the contractor); (B) a prohibition against the granting of exclusive licenses under United States Patents or Patent Applications in a subject invention by the contractor to persons other than small business firms for a period in excess of the earlier of five years from first commercial sale or use of the invention or eight years from the date of the exclusive license excepting that time before regulatory agencies necessary to

obtain premarket clearance unless, on a case-by-case basis, the Federal agency approves a longer exclusive license. If exclusive field of use licenses are granted, commercial sale or use in one field of use shall not be deemed commercial sale or use as to other fields of use, and a first commercial sale or use with respect to a product of the invention shall not be deemed to end the exclusive period to different subsequent products covered by the invention; (C) a requirement that the contractor share royalties with the inventor; and (D) a requirement that the balance of any royalties or income earned by the contractor with respect to subject inventions, after payment of expenses (including payments to inventors) incidental to the administration of subject inventions, be utilized for the support of scientific research or education.

“(8) The requirements of sections 203 and 204 of this chapter.

Rights,
retention.

“(d) If a contractor does not elect to retain title to a subject invention in cases subject to this section, the Federal agency may consider and after consultation with the contractor grant requests for retention of rights by the inventor subject to the provisions of this Act and regulations promulgated hereunder.

Rights, transfer
or assignment.

“(e) In any case when a Federal employee is a coinventor of any invention made under a funding agreement with a nonprofit organization or small business firm, the Federal agency employing such coinventor is authorized to transfer or assign whatever rights it may acquire in the subject invention from its employee to the contractor subject to the conditions set forth in this chapter.

Third-party
licensing,
prohibition.

“(f)(1) No funding agreement with a small business firm or nonprofit organization shall contain a provision allowing a Federal agency to require the licensing to third parties of inventions owned by the contractor that are not subject inventions unless such provision has been approved by the head of the agency and a written justification has been signed by the head of the agency. Any such provision shall clearly state whether the licensing may be required in connection with the practice of a subject invention, a specifically identified work object, or both. The head of the agency may not delegate the authority to approve provisions or sign justifications required by this paragraph.

“(2) A Federal agency shall not require the licensing of third parties under any such provision unless the head of the agency determines that the use of the invention by others is necessary for the practice of a subject invention or for the use of a work object of the funding agreement and that such action is necessary to achieve the practical application of the subject invention or work object. Any such determination shall be on the record after an opportunity for an agency hearing. Any action commenced for judicial review of such determination shall be brought within sixty days after notification of such determination.

35 USC 203.

“§ 203. March-in rights

“With respect to any subject invention in which a small business firm or nonprofit organization has acquired title under this chapter, the Federal agency under whose funding agreement the subject invention was made shall have the right, in accordance with such procedures as are provided in regulations promulgated hereunder to require the contractor, an assignee or exclusive licensee of a subject invention to grant a nonexclusive, partially exclusive, or exclusive license in any field of use to a responsible applicant or applicants, upon terms that are reasonable under the circumstances, and if the contractor, assignee, or exclusive licensee refuses such request, to

grant such a license itself, if the Federal agency determines that such—

“(a) action is necessary because the contractor or assignee has not taken, or is not expected to take within a reasonable time, effective steps to achieve practical application of the subject invention in such field of use;

“(b) action is necessary to, alleviate health or safety needs which are not reasonably satisfied by the contractor, assignee, or their licensees;

“(c) action is necessary to meet requirements for public use specified by Federal regulations and such requirements are not reasonably satisfied by the contractor, assignee, or licensees; or

“(d) action is necessary because the agreement required by section 204 has not been obtained or waived or because a licensee of the exclusive right to use or sell any subject invention in the United States is in breach of its agreement obtained pursuant to section 204.

“§ 204. Preference for United States industry

35 USC 204.

“Notwithstanding any other provision of this chapter, no small business firm or nonprofit organization which receives title to any subject invention and no assignee of any such small business firm or nonprofit organization shall grant to any person the exclusive right to use or sell any subject invention in the United States unless such person agrees that any products embodying the subject invention or produced through the use of the subject invention will be manufactured substantially in the United States. However, in individual cases, the requirement for such an agreement may be waived by the Federal agency under whose funding agreement the invention was made upon a showing by the small business firm, nonprofit organization, or assignee that reasonable but unsuccessful efforts have been made to grant licenses on similar terms to potential licensees that would be likely to manufacture substantially in the United States or that under the circumstances domestic manufacture is not commercially feasible.

Waiver.

“§ 205. Confidentiality

35 USC 205.

“Federal agencies are authorized to withhold from disclosure to the public information disclosing any invention in which the Federal Government owns or may own a right, title, or interest (including a nonexclusive license) for a reasonable time in order for a patent application to be filed. Furthermore, Federal agencies shall not be required to release copies of any document which is part of an application for patent filed with the United States Patent and Trademark Office or with any foreign patent office.

“§ 206. Uniform clauses and regulations

35 USC 206.

“The Office of Federal Procurement Policy, after receiving recommendations of the Office of Science and Technology Policy, may issue regulations which may be made applicable to Federal agencies implementing the provisions of sections 202 through 204 of this chapter and the Office of Federal Procurement Policy shall establish standard funding agreement provisions required under this chapter.

“§ 207. Domestic and foreign protection of federally owned inventions

35 USC 207

“Each Federal agency is authorized to—

"(1) apply for, obtain, and maintain patents or other forms of protection in the United States and in foreign countries on inventions in which the Federal Government owns a right, title, or interest;

"(2) grant nonexclusive, exclusive, or partially exclusive licenses under federally owned patent applications, patents, or other forms of protection obtained, royalty-free or for royalties or other consideration, and on such terms and conditions, including the grant to the licensee of the right of enforcement pursuant to the provisions of chapter 29 of this title as determined appropriate in the public interest;

"(3) undertake all other suitable and necessary steps to protect and administer rights to federally owned inventions on behalf of the Federal Government either directly or through contract; and

"(4) transfer custody and administration, in whole or in part, to another Federal agency, of the right, title, or interest in any federally owned invention.

35 USC 281 *et seq.*

35 USC 208.

"§ 208. Regulations governing Federal licensing

"The Administrator of General Services is authorized to promulgate regulations specifying the terms and conditions upon which any federally owned invention, other than inventions owned by the Tennessee Valley Authority, may be licensed on a nonexclusive, partially exclusive, or exclusive basis.

35 USC 209.

"§ 209. Restrictions on licensing of federally owned inventions

Development or marketing plan.

"(a) No Federal agency shall grant any license under a patent or patent application on a federally owned invention unless the person requesting the license has supplied the agency with a plan for development and/or marketing of the invention, except that any such plan may be treated by the Federal agency as commercial and financial information obtained from a person and privileged and confidential and not subject to disclosure under section 552 of title 5 of the United States Code.

Manufacture in U.S.

"(b) A Federal agency shall normally grant the right to use or sell any federally owned invention in the United States only to a licensee that agrees that any products embodying the invention or produced through the use of the invention will be manufactured substantially in the United States.

"(c)(1) Each Federal agency may grant exclusive or partially exclusive licenses in any invention covered by a federally owned domestic patent or patent application only if, after public notice and opportunity for filing written objections, it is determined that—

"(A) the interests of the Federal Government and the public will best be served by the proposed license, in view of the applicant's intentions, plans, and ability to bring the invention to practical application or otherwise promote the invention's utilization by the public;

"(B) the desired practical application has not been achieved, or is not likely expeditiously to be achieved, under any nonexclusive license which has been granted, or which may be granted, on the invention;

"(C) exclusive or partially exclusive licensing is a reasonable and necessary incentive to call forth the investment of risk capital and expenditures to bring the invention to practical application or otherwise promote the invention's utilization by the public; and

“(D) the proposed terms and scope of exclusivity are not greater than reasonably necessary to provide the incentive for bringing the invention to practical application or otherwise promote the invention’s utilization by the public.

“(2) A Federal agency shall not grant such exclusive or partially exclusive license under paragraph (1) of this subsection if it determines that the grant of such license will tend substantially to lessen competition or result in undue concentration in any section of the country in any line of commerce to which the technology to be licensed relates, or to create or maintain other situations inconsistent with the antitrust laws. Antitrust factors.

“(3) First preference in the exclusive or partially exclusive licensing of federally owned inventions shall go to small business firms submitting plans that are determined by the agency to be within the capabilities of the firms and equally likely, if executed, to bring the invention to practical application as any plans submitted by applicants that are not small business firms. Small business preference.

“(d) After consideration of whether the interests of the Federal Government or United States industry in foreign commerce will be enhanced, any Federal agency may grant exclusive or partially exclusive licenses in any invention covered by a foreign patent application or patent, after public notice and opportunity for filing written objections, except that a Federal agency shall not grant such exclusive or partially exclusive license if it determines that the grant of such license will tend substantially to lessen competition or result in undue concentration in any section of the United States in any line of commerce to which the technology to be licensed relates, or to create or maintain other situations inconsistent with antitrust laws. Antitrust factors.

“(e) The Federal agency shall maintain a record of determinations to grant exclusive or partially exclusive licenses. Record.

“(f) Any grant of a license shall contain such terms and conditions as the Federal agency determines appropriate for the protection of the interests of the Federal Government and the public, including provisions for the following: Terms and conditions.

“(1) periodic reporting on the utilization or efforts at obtaining utilization that are being made by the licensee with particular reference to the plan submitted: *Provided*, That any such information may be treated by the Federal agency as commercial and financial information obtained from a person and privileged and confidential and not subject to disclosure under section 552 of title 5 of the United States Code;

“(2) the right of the Federal agency to terminate such license in whole or in part if it determines that the licensee is not executing the plan submitted with its request for a license and the licensee cannot otherwise demonstrate to the satisfaction of the Federal agency that it has taken or can be expected to take within a reasonable time, effective steps to achieve practical application of the invention;

“(3) the right of the Federal agency to terminate such license in whole or in part if the licensee is in breach of an agreement obtained pursuant to paragraph (b) of this section; and

“(4) the right of the Federal agency to terminate the license in whole or in part if the agency determines that such action is necessary to meet requirements for public use specified by Federal regulations issued after the date of the license and such requirements are not reasonably satisfied by the licensee.

35 USC 210

"§ 210. Precedence of chapter

"(a) This chapter shall take precedence over any other Act which would require a disposition of rights in subject inventions of small business firms or nonprofit organizations contractors in a manner that is inconsistent with this chapter, including but not necessarily limited to the following:

- "(1) section 10(a) of the Act of June 29, 1935, as added by title I of the Act of August 14, 1946 (7 U.S.C. 427i(a); 60 Stat. 1085);
- "(2) section 205(a) of the Act of August 14, 1946 (7 U.S.C. 1624(a); 60 Stat. 1090);
- 91 Stat. 1320 "(3) section 501(c) of the Federal Mine Safety and Health Act of 1977 (30 U.S.C. 951(c); 83 Stat. 742);
- "(4) section 106(c) of the National Traffic and Motor Vehicle Safety Act of 1966 (15 U.S.C. 1395(c); 80 Stat. 721);
- 64 Stat. 154. "(5) section 12 of the National Science Foundation Act of 1950 (42 U.S.C. 1871(a); 82 Stat. 360);
- "(6) section 152 of the Atomic Energy Act of 1954 (42 U.S.C. 2182; 68 Stat. 943);
- 68 Stat. 944. "(7) section 305 of the National Aeronautics and Space Act of 1958 (42 U.S.C. 2457);
- "(8) section 6 of the Coal Research Development Act of 1960 (30 U.S.C. 666; 74 Stat. 337);
- "(9) section 4 of the Helium Act Amendments of 1960 (50 U.S.C. 167b; 74 Stat. 920);
- "(10) section 32 of the Arms Control and Disarmament Act of 1961 (22 U.S.C. 2572; 75 Stat. 634);
- "(11) subsection (e) of section 302 of the Appalachian Regional Development Act of 1965 (40 U.S.C. App. 302(e); 79 Stat. 5);
- 88 Stat. 1887. "(12) section 9 of the Federal Nonnuclear Energy Research and Development Act of 1974 (42 U.S.C. 5901; 88 Stat. 1878);
- 42 USC 5908. "(13) section 5(d) of the Consumer Product Safety Act (15 U.S.C. 2054(d); 86 Stat. 1211);
- "(14) section 3 of the Act of April 5, 1944 (30 U.S.C. 323; 58 Stat. 191);
- "(15) section 8001(c)(3) of the Solid Waste Disposal Act (42 U.S.C. 6981(c); 90 Stat. 2829);
- "(16) section 219 of the Foreign Assistance Act of 1961 (22 U.S.C. 2179; 83 Stat. 806);
- "(17) section 427(b) of the Federal Mine Health and Safety Act of 1977 (30 U.S.C. 937(b); 86 Stat. 155);
- "(18) section 306(d) of the Surface Mining and Reclamation Act of 1977 (30 U.S.C. 1226(d); 91 Stat. 455);
- "(19) section 21(d) of the Federal Fire Prevention and Control Act of 1974 (15 U.S.C. 2218(d); 88 Stat. 1548);
- "(20) section 6(b) of the Solar Photovoltaic Energy Research Development and Demonstration Act of 1978 (42 U.S.C. 5585(b); 92 Stat. 2516);
- 7 USC 178j "(21) section 12 of the Native Latex Commercialization and Economic Development Act of 1978 (7 U.S.C. 178(j); 92 Stat. 2533); and
- 92 Stat. 1316 "(22) section 408 of the Water Resources and Development Act of 1978 (42 U.S.C. 7879; 92 Stat. 1360).

The Act creating this chapter shall be construed to take precedence over any future Act unless that Act specifically cites this Act and provides that it shall take precedence over this Act.

"(b) Nothing in this chapter is intended to alter the effect of the laws cited in paragraph (a) of this section or any other laws with respect to the disposition of rights in inventions made in the perform-

ance of funding agreements with persons other than nonprofit organizations or small business firms.

"(c) Nothing in this chapter is intended to limit the authority of agencies to agree to the disposition of rights in inventions made in the performance of work under funding agreements with persons other than nonprofit organizations or small business firms in accordance with the Statement of Government Patent Policy issued on August 23, 1971 (36 Fed. Reg. 16887), agency regulations, or other applicable regulations or to otherwise limit the authority of agencies to allow such persons to retain ownership of inventions. Any disposition of rights in inventions made in accordance with the Statement or implementing regulations, including any disposition occurring before enactment of this section, are hereby authorized.

Rights,
disposition.

"(d) Nothing in this chapter shall be construed to require the disclosure of intelligence sources or methods or to otherwise affect the authority granted to the Director of Central Intelligence by statute or Executive order for the protection of intelligence sources or methods.

Disclosure.

"§ 211. Relationship to antitrust laws

35 USC 211.

"Nothing in this chapter shall be deemed to convey to any person immunity from civil or criminal liability, or to create any defenses to actions, under any antitrust law."

(b) The table of chapters for title 35, United States Code, is amended by adding immediately after the item relating to chapter 37 the following:

"38. Patent rights in inventions made with Federal assistance."

SEC. 7. AMENDMENTS TO OTHER ACTS.—The following Acts are amended as follows:

(a) Section 156 of the Atomic Energy Act of 1954 (42 U.S.C. 2186; 68 Stat. 947) is amended by deleting the words "held by the Commission or".

(b) The National Aeronautics and Space Act of 1958 is amended by repealing paragraph (g) of section 305 (42 U.S.C. 2457(g); 72 Stat. 436).

(c) The Federal Nonnuclear Energy Research and Development Act of 1974 is amended by repealing paragraphs (g), (h), and (i) of section 9 (42 U.S.C. 5908 (g), (h), and (i); 88 Stat. 1889-1891).

SEC. 8. (a) Sections 2, 4, and 5 of this Act will take effect upon enactment.

Effective dates.
35 USC 41 note.

(b) Section 1 of this Act will take effect on the first day of the seventh month beginning after its enactment and will apply to patents in force as of that date or issued thereafter.

(c) Section 3 of this Act will take effect on the first day of the first fiscal year beginning on or after one calendar year after enactment. However, until section 3 takes effect, the Commissioner may credit the Patent and Trademark Office appropriation account in the Treasury of the United States with the revenues from collected reexamination fees, which will be available to pay the costs to the Office of reexamination proceedings.

(d) Any fee in effect as of the date of enactment of this Act will remain in effect until a corresponding fee established under section 41 of title 35, United States Code, or section 1113 of title 15, United States Code, takes effect.

(e) Fees for maintaining a patent in force will not be applicable to patents applied for prior to the date of enactment of this Act.

(f) Sections 6 and 7 of this Act will take effect on the first day of the seventh month beginning after its enactment. Implementing regulations may be issued earlier.

(g) Sections 8 and 9 will take effect on the date of enactment of this Act.

Computerized
data and
retrieval
system, report to
Congress.
35 USC 14 note.

SEC. 9. The Commissioner of Patents and Trademarks shall report to Congress, within two years after the effective date of this Act, a plan to identify, and if necessary develop or have developed, computerized data and retrieval systems equivalent to the latest state of the art which can be applied to all aspects of the operation of the Patent and Trademark Office, and particularly to the patent search file, the patent classification system, and the trademark search file. The report shall specify the cost of implementing the plan, how rapidly the plan can be implemented by the Patent and Trademark Office, without regard to funding which is or which may be available for this purpose in the future.

SEC. 10. (a) Section 101 of title 17 of the United States Code is amended to add at the end thereof the following new language:

"Computer
program."

"A 'computer program' is a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result."

(b) Section 117 of title 17 of the United States Code is amended to read as follows:

17 USC 117.
17 USC 106.

"§ 117. Limitations on exclusive rights: Computer programs

"Notwithstanding the provisions of section 106, it is not an infringement for the owner of a copy of a computer program to make or authorize the making of another copy or adaptation of that computer program provided:

"(1) that such a new copy or adaptation is created as an essential step in the utilization of the computer program in conjunction with a machine and that it is used in no other manner, or

"(2) that such new copy or adaptation is for archival purposes only and that all archival copies are destroyed in the event that continued possession of the computer program should cease to be rightful.

"Any exact copies prepared in accordance with the provisions of this section may be leased, sold, or otherwise transferred, along with the copy from which such copies were prepared, only as part of the lease, sale, or other transfer of all rights in the program. Adaptations so prepared may be transferred only with the authorization of the copyright owner."

Approved December 12, 1980.

LEGISLATIVE HISTORY:

HOUSE REPORTS: No. 96-1307, Pt. I (Comm. on the Judiciary) and No. 96-1307, Pt. 2 (Comm. on Government Operations).

CONGRESSIONAL RECORD, Vol. 126 (1980):

Mar. 20, S. 2446 considered and passed Senate.

Nov. 17, considered and passed House.

Nov. 20, considered and passed Senate, amended.

Nov. 21, House concurred in Senate amendment.

Government Patent Policy

Memorandum to the Heads of Executive Departments and Agencies

Subject: Government Patent Policy

To the extent permitted by law, agency policy with respect to the disposition of any invention made in the performance of a federally-funded research and development contract, grant or cooperative agreement award shall be the same or substantially the same as applied to small business firms and nonprofit organizations under Chapter 38 of Title 35 of the United States Code.

In awards not subject to Chapter 38 of Title 35 of the United States code, any of the rights of the Government or obligations of the performer described in 35 U.S.C. 202-204 may be waived or omitted if the agency determines (1) that the interests of the United States and the general public will be better served thereby as, for example, where this is necessary to obtain a uniquely or highly qualified performer; or (2) that the award involves co-sponsor or joint venturer is making substantial contribution of funds, facilities or equipment to the work performed under the award.

In addition, agencies should protect the confidentiality of invention disclosure, patent applications and utilization reports required in performance or in consequence of awards to the extent permitted by 35 U.S.C. 205 or other applicable laws.

Ronald Reagan

Public Law 98-462
98th Congress

An Act

To promote research and development, encourage innovation, stimulate trade, and make necessary and appropriate modifications in the operation of the antitrust laws.

Oct. 11, 1984
[S. 1841]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SHORT TITLE

SECTION 1. This Act may be cited as the "National Cooperative Research Act of 1984".

National
Cooperative
Research Act of
1984.

DEFINITIONS

15 USC 4301
note.

SEC. 2. (a) For purposes of this Act:

15 USC 4301.

(1) The term "antitrust laws" has the meaning given it in subsection (a) of the first section of the Clayton Act (15 U.S.C. 12), except that such term includes section 5 of the Federal Trade Commission Act (15 U.S.C. 45) to the extent that such section 5 applies to unfair methods of competition.

(2) The term "Attorney General" means the Attorney General of the United States.

(3) The term "Commission" means the Federal Trade Commission.

(4) The term "person" has the meaning given it in subsection (a) of the first section of the Clayton Act (15 U.S.C. 12(a)).

(5) The term "State" has the meaning given it in section 4G(2) of the Clayton Act (15 U.S.C. 15g(2)).

(6) The term "joint research and development venture" means any group of activities, including attempting to make, making, or performing a contract, by two or more persons for the purpose of—

(A) theoretical analysis, experimentation, or systematic study of phenomena or observable facts,

(B) the development or testing of basic engineering techniques,

(C) the extension of investigative findings or theory of a scientific or technical nature into practical application for experimental and demonstration purposes, including the experimental production and testing of models, prototypes, equipment, materials, and processes,

(D) the collection, exchange, and analysis of research information, or

(E) any combination of the purposes specified in subparagraphs (A), (B), (C), and (D),

and may include the establishment and operation of facilities for the conducting of research, the conducting of such venture on a protected and proprietary basis, and the prosecuting of applications for patents and the granting of licenses for the

results of such venture, but does not include any activity specified in subsection (b).

(b) The term "joint research and development venture" excludes the following activities involving two or more persons:

(1) exchanging information among competitors relating to costs, sales, profitability, prices, marketing, or distribution of any product, process, or service that is not reasonably required to conduct the research and development that is the purpose of such venture,

(2) entering into any agreement or engaging in any other conduct restricting, requiring, or otherwise involving the production or marketing by any person who is a party to such venture of any product, process, or service, other than the production or marketing of proprietary information developed through such venture, such as patents and trade secrets, and

(3) entering into any agreement or engaging in any other conduct—

(A) to restrict or require the sale, licensing, or sharing of inventions or developments not developed through such venture, or

(B) to restrict or require participation by such party in other research and development activities, that is not reasonably required to prevent misappropriation of proprietary information contributed by any person who is a party to such venture or of the results of such venture.

RULE OF REASON STANDARD

15 USC 4302.

SEC. 3. In any action under the antitrust laws, or under any State law similar to the antitrust laws, the conduct of any person in making or performing a contract to carry out a joint research and development venture shall not be deemed illegal per se; such conduct shall be judged on the basis of its reasonableness, taking into account all relevant factors affecting competition, including, but not limited to, effects on competition in properly defined, relevant research and development markets.

LIMITATION ON RECOVERY

Claims.
15 USC 4303.

SEC. 4. (a) Notwithstanding section 4 of the Clayton Act (15 U.S.C. 15) and in lieu of the relief specified in such section, any person who is entitled to recovery on a claim under such section shall recover the actual damages sustained by such person, interest calculated at the rate specified in section 1961 of title 28, United States Code, on such actual damages as specified in subsection (d), and the cost of suit attributable to such claim, including a reasonable attorney's fee pursuant to section 5 of this Act if such claim—

(1) results from conduct that is within the scope of a notification that has been filed under section 6(a) of this Act for a joint research and development venture, and

(2) is filed after such notification becomes effective pursuant to section 6(c) of this Act.

(b) Notwithstanding section 4C of the Clayton Act (15 U.S.C. 15c), and in lieu of the relief specified in such section, any State that is entitled to monetary relief on a claim under such section shall recover the total damage sustained as described in subsection (a)(1) of such section, interest calculated at the rate specified in section

1961 of title 28, United States Code, on such total damage as specified in subsection (d), and the cost of suit attributable to such claim, including a reasonable attorney's fee pursuant to section 4C of the Clayton Act if such claim—

15 USC 15c.

(1) results from conduct that is within the scope of a notification that has been filed under section 6(a) of this Act for a joint research and development venture, and

(2) is filed after such notification becomes effective pursuant to section 6(c) of this Act.

(c) Notwithstanding any provision of any State law providing damages for conduct similar to that forbidden by the antitrust laws, any person who is entitled to recovery on a claim under such provision shall not recover in excess of the actual damages sustained by such person, interest calculated at the rate specified in section 1961 of title 28, United States Code, on such actual damages as specified in subsection (d), and the cost of suit attributable to such claim, including a reasonable attorney's fee pursuant to section 5 of this Act if such claim—

(1) results from conduct that is within the scope of a notification that has been filed under section 6(a) of this Act for a joint research and development venture, and

(2) is filed after notification has become effective pursuant to section 6(c) of this Act.

(d) Interest shall be awarded on the damages involved for the period beginning on the earliest date for which injury can be established and ending on the date of judgment, unless the court finds that the award of all or part of such interest is unjust in the circumstances.

(e) This section shall be applicable only if the challenged conduct of a person defending against a claim is not in violation of any decree or order, entered or issued after the effective date of this Act, in any case or proceeding under the antitrust laws or any State law similar to the antitrust laws challenging such conduct as part of a joint research and development venture.

ATTORNEY'S FEES

SEC. 5. (a) Notwithstanding sections 4 and 16 of the Clayton Act, in any claim under the antitrust laws, or any State law similar to the antitrust laws, based on the conducting of a joint research and development venture, the court shall, at the conclusion of the action—

15 USC 4304.
15 USC 15, 26.

(1) award to a substantially prevailing claimant the cost of suit attributable to such claim, including a reasonable attorney's fee, or

(2) award to a substantially prevailing party defending against any such claim the cost of suit attributable to such claim, including a reasonable attorney's fee, if the claim, or the claimant's conduct during the litigation of the claim, was frivolous, unreasonable, without foundation, or in bad faith.

(b) The award made under subsection (a) may be offset in whole or in part by an award in favor of any other party for any part of the cost of suit, including a reasonable attorney's fee, attributable to conduct during the litigation by any prevailing party that the court finds to be frivolous, unreasonable, without foundation, or in bad faith.

DISCLOSURE OF JOINT RESEARCH AND DEVELOPMENT VENTURE

15 USC 4305.

SEC. 6. (a) Any party to a joint research and development venture, acting on such venture's behalf, may, not later than 90 days after entering into a written agreement to form such venture or not later than 90 days after the date of the enactment of this Act, whichever is later, file simultaneously with the Attorney General and the Commission a written notification disclosing—

- (1) the identities of the parties to such venture, and
- (2) the nature and objectives of such venture.

Any party to such venture, acting on such venture's behalf, may file additional disclosure notifications pursuant to this section as are appropriate to extend the protections of section 4. In order to maintain the protections of section 4, such venture shall, not later than 90 days after a change in its membership, file simultaneously with the Attorney General and the Commission a written notification disclosing such change.

Federal
Register,
publication.

(b) Except as provided in subsection (e), not later than 30 days after receiving a notification filed under subsection (a), the Attorney General or the Commission shall publish in the Federal Register a notice with respect to such venture that identifies the parties to such venture and that describes in general terms the area of planned activity of such venture. Prior to its publication, the contents of such notice shall be made available to the parties to such venture.

(c) If with respect to a notification filed under subsection (a), notice is published in the Federal Register, then such notification shall operate to convey the protections of section 4 as of the earlier of—

- (1) the date of publication of notice under subsection (b), or
- (2) if such notice is not so published within the time required by subsection (b), after the expiration of the 30-day period beginning on the date the Attorney General or the Commission receives the applicable information described in subsection (a).

Public informa-
tion.
Confidentiality.

(d) Except with respect to the information published pursuant to subsection (b)—

- (1) all information and documentary material submitted as part of a notification filed pursuant to this section, and
- (2) all other information obtained by the Attorney General or the Commission in the course of any investigation, administrative proceeding, or case, with respect to a potential violation of the antitrust laws by the joint research and development venture with respect to which such notification was filed,

shall be exempt from disclosure under section 552 of title 5, United States Code, and shall not be made publicly available by any agency of the United States to which such section applies except in a judicial or administrative proceeding in which such information and material is subject to any protective order.

(e) Any person who files a notification pursuant to this section may withdraw such notification before notice of the joint research and development venture involved is published under subsection (b). Any notification so withdrawn shall not be subject to subsection (b) and shall not confer the protections of section 4 on any person with respect to whom such notification was filed.

(f) Any action taken or not taken by the Attorney General or the Commission with respect to notifications filed pursuant to this section shall not be subject to judicial review.

(g)(1) Except as provided in paragraph (2), for the sole purpose of establishing that a person is entitled to the protections of section 4, the fact of disclosure of conduct under section 6(a) and the fact of publication of a notice under section 6(b) shall be admissible into evidence in any judicial or administrative proceeding.

(2) No action by the Attorney General or the Commission taken pursuant to this section shall be admissible into evidence in any such proceeding for the purpose of supporting or answering any claim under the antitrust laws or under any State law similar to the antitrust laws.

Approved October 11, 1984.

LEGISLATIVE HISTORY—S. 1841 (H.R. 5041):

HOUSE REPORTS: No. 98-1044 (Comm. of Conference) and No. 98-656 accompanying

H.R. 5041 (Comm. on the Judiciary).

SENATE REPORT No. 98-427 (Comm. on the Judiciary).

CONGRESSIONAL RECORD, Vol. 130 (1984):

May 1, H.R. 5041 considered and passed House.

July 31, considered and passed Senate.

Aug. 9, considered and passed House, amended, in lieu of H.R. 5041.

Sept. 26, Senate agreed to conference report.

Oct. 1, House agreed to conference report.

Public Law 98-620
98th Congress

An Act

To amend title 28, United States Code, with respect to the places where court shall be held in certain judicial districts, and for other purposes.

Nov. 8, 1984
[H. R. 6163]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

TITLE I

SHORT TITLE

Trademark
Clarification Act
of 1984.

SEC. 101. This title may be cited as the "Trademark Clarification Act of 1984".

15 USC 1051
note.

AMENDMENT TO THE TRADEMARK ACT

SEC. 102. Section 14(c) of the Trademark Act of 1946, commonly known as the Lanham Trademark Act (15 U.S.C. 1064(c)) is amended by adding before the semicolon at the end of such section a period and the following: "A registered mark shall not be deemed to be the common descriptive name of goods or services solely because such mark is also used as a name of or to identify a unique product or service. The primary significance of the registered mark to the relevant public rather than purchaser motivation shall be the test for determining whether the registered mark has become the common descriptive name of goods or services in connection with which it has been used".

DEFINITIONS

SEC. 103. Section 45 of such Act (15 U.S.C. 1127) is amended as follows:

(1) Strike out "The term 'trade-mark' includes any word, name, symbol, or device or any combination thereof adopted and used by a manufacturer or merchant to identify his goods and distinguish them from those manufactured or sold by others." and insert in lieu thereof the following: "The term 'trademark' includes any word, name, symbol, or device or any combination thereof adopted and used by a manufacturer or merchant to identify and distinguish his goods, including a unique product, from those manufactured or sold by others and to indicate the source of the goods, even if that source is unknown."

(2) Strike out "The term 'service mark' means a mark used in the sale or advertising of services to identify the services of one person and distinguish them from the services of others." and insert in lieu thereof the following: "The term 'service mark' means a mark used in the sale or advertising of services to identify and distinguish the services of one person, including a unique service, from the services of others and to indicate the source of the services, even if that source is unknown."

(3) Add at the end of subparagraph (b) in the paragraph which begins "A mark shall be deemed to be 'abandoned'", the following new sentence: "Purchaser motivation shall not be a test for determining abandonment under this subparagraph."

JUDGMENTS

SEC. 104. Nothing in this title shall be construed to provide a basis for reopening of any final judgment entered prior to the date of enactment of this title.

15 USC 1064
note.

TITLE III

Semiconductor
Chip Protection
Act of 1984.

SHORT TITLE

SEC. 301. This title may be cited as the "Semiconductor Chip Protection Act of 1984".

17 USC 901 note.

PROTECTION OF SEMICONDUCTOR CHIP PRODUCTS

SEC. 302. Title 17, United States Code, is amended by adding at the end thereof the following new chapter:

Computers.

**"CHAPTER 9—PROTECTION OF SEMICONDUCTOR
CHIP PRODUCTS**

- "Sec.
- "901. Definitions.
- "902. Subject matter of protection.
- "903. Ownership and transfer.
- "904. Duration of protection.
- "905. Exclusive rights in mask works.
- "906. Limitation on exclusive rights: reverse engineering; first sale.
- "907. Limitation on exclusive rights: innocent infringement.
- "908. Registration of claims of protection.
- "909. Mask work notice.
- "910. Enforcement of exclusive rights.
- "911. Civil actions.
- "912. Relation to other laws.
- "913. Transitional provisions.
- "914. International transitional provisions.

"§ 901. Definitions

17 USC 901.

"(a) As used in this chapter—

"(1) a 'semiconductor chip product' is the final or intermediate form of any product—

"(A) having two or more layers of metallic, insulating, or semiconductor material, deposited or otherwise placed on, or etched away or otherwise removed from, a piece of semiconductor material in accordance with a predetermined pattern; and

"(B) intended to perform electronic circuitry functions;

"(2) a 'mask work' is a series of related images, however fixed or encoded—

"(A) having or representing the predetermined, three-dimensional pattern of metallic, insulating, or semiconductor material present or removed from the layers of a semiconductor chip product; and

"(B) in which series the relation of the images to one another is that each image has the pattern of the surface of one form of the semiconductor chip product;

"(3) a mask work is 'fixed' in a semiconductor chip product when its embodiment in the product is sufficiently permanent or stable to permit the mask work to be perceived or reproduced from the product for a period of more than transitory duration;

"(4) to 'distribute' means to sell, or to lease, bail, or otherwise transfer, or to offer to sell, lease, bail, or otherwise transfer;

"(5) to 'commercially exploit' a mask work is to distribute to the public for commercial purposes a semiconductor chip product embodying the mask work; except that such term includes an offer to sell or transfer a semiconductor chip product only

when the offer is in writing and occurs after the mask work is fixed in the semiconductor chip product;

"(6) the 'owner' of a mask work is the person who created the mask work, the legal representative of that person if that person is deceased or under a legal incapacity, or a party to whom all the rights under this chapter of such person or representative are transferred in accordance with section 903(b); except that, in the case of a work made within the scope of a person's employment, the owner is the employer for whom the person created the mask work or a party to whom all the rights under this chapter of the employer are transferred in accordance with section 903(b);

"(7) an 'innocent purchaser' is a person who purchases a semiconductor chip product in good faith and without having notice of protection with respect to the semiconductor chip product;

"(8) having 'notice of protection' means having actual knowledge that, or reasonable grounds to believe that, a mask work is protected under this chapter; and

"(9) an 'infringing semiconductor chip product' is a semiconductor chip product which is made, imported, or distributed in violation of the exclusive rights of the owner of a mask work under this chapter.

"(b) For purposes of this chapter, the distribution or importation of a product incorporating a semiconductor chip product as a part thereof is a distribution or importation of that semiconductor chip product.

17 USC 902.

"§ 902. Subject matter of protection

"(a)(1) Subject to the provisions of subsection (b), a mask work fixed in a semiconductor chip product, by or under the authority of the owner of the mask work, is eligible for protection under this chapter if—

"(A) on the date on which the mask work is registered under section 908, or is first commercially exploited anywhere in the world, whichever occurs first, the owner of the mask work is (i) a national or domiciliary of the United States, (ii) a national, domiciliary, or sovereign authority of a foreign nation that is a party to a treaty affording protection to mask works to which the United States is also a party, or (iii) a stateless person, wherever that person may be domiciled;

"(B) the mask work is first commercially exploited in the United States; or

"(C) the mask work comes within the scope of a Presidential proclamation issued under paragraph (2).

President
of U.S.

"(2) Whenever the President finds that a foreign nation extends, to mask works of owners who are nationals or domiciliaries of the United States protection (A) on substantially the same basis as that on which the foreign nation extends protection to mask works of its own nationals and domiciliaries and mask works first commercially exploited in that nation, or (B) on substantially the same basis as provided in this chapter, the President may by proclamation extend protection under this chapter to mask works (i) of owners who are, on the date on which the mask works are registered under section 908, or the date on which the mask works are first commercially exploited anywhere in the world, whichever occurs first, nationals,

domiciliaries, or sovereign authorities of that nation, or (ii) which are first commercially exploited in that nation.

"(b) Protection under this chapter shall not be available for a mask work that—

"(1) is not original; or

"(2) consists of designs that are staple, commonplace, or familiar in the semiconductor industry, or variations of such designs, combined in a way that, considered as a whole, is not original.

"(c) In no case does protection under this chapter for a mask work extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such work.

"§ 903. Ownership, transfer, licensing, and recordation

17 USC 903.

"(a) The exclusive rights in a mask work subject to protection under this chapter belong to the owner of the mask work.

"(b) The owner of the exclusive rights in a mask work may transfer all of those rights, or license all or less than all of those rights, by any written instrument signed by such owner or a duly authorized agent of the owner. Such rights may be transferred or licensed by operation of law, may be bequeathed by will, and may pass as personal property by the applicable laws of intestate succession.

"(c)(1) Any document pertaining to a mask work may be recorded in the Copyright Office if the document filed for recordation bears the actual signature of the person who executed it, or if it is accompanied by a sworn or official certification that it is a true copy of the original, signed document. The Register of Copyrights shall, upon receipt of the document and the fee specified pursuant to section 908(d), record the document and return it with a certificate of recordation. The recordation of any transfer or license under this paragraph gives all persons constructive notice of the facts stated in the recorded document concerning the transfer or license.

"(2) In any case in which conflicting transfers of the exclusive rights in a mask work are made, the transfer first executed shall be void as against a subsequent transfer which is made for a valuable consideration and without notice of the first transfer, unless the first transfer is recorded in accordance with paragraph (1) within three months after the date on which it is executed, but in no case later than the day before the date of such subsequent transfer.

"(d) Mask works prepared by an officer or employee of the United States Government as part of that person's official duties are not protected under this chapter, but the United States Government is not precluded from receiving and holding exclusive rights in mask works transferred to the Government under subsection (b).

"§ 904. Duration of protection

17 USC 904.

"(a) The protection provided for a mask work under this chapter shall commence on the date on which the mask work is registered under section 908, or the date on which the mask work is first commercially exploited anywhere in the world, whichever occurs first.

"(b) Subject to subsection (c) and the provisions of this chapter, the protection provided under this chapter to a mask work shall end ten years after the date on which such protection commences under subsection (a).

"(c) All terms of protection provided in this section shall run to the end of the calendar year in which they would otherwise expire.

17 USC 905.

"§ 905. Exclusive rights in mask works

"The owner of a mask work provided protection under this chapter has the exclusive rights to do and to authorize any of the following:

"(1) to reproduce the mask work by optical, electronic, or any other means;

"(2) to import or distribute a semiconductor chip product in which the mask work is embodied; and

"(3) to induce or knowingly to cause another person to do any of the acts described in paragraphs (1) and (2).

17 USC 906.

"§ 906. Limitation on exclusive rights: reverse engineering; first sale

"(a) Notwithstanding the provisions of section 905, it is not an infringement of the exclusive rights of the owner of a mask work for—

"(1) a person to reproduce the mask work solely for the purpose of teaching, analyzing, or evaluating the concepts or techniques embodied in the mask work or the circuitry, logic flow, or organization of components used in the mask work; or

"(2) a person who performs the analysis or evaluation described in paragraph (1) to incorporate the results of such conduct in an original mask work which is made to be distributed.

"(b) Notwithstanding the provisions of section 905(2), the owner of a particular semiconductor chip product made by the owner of the mask work, or by any person authorized by the owner of the mask work, may import, distribute, or otherwise dispose of or use, but not reproduce, that particular semiconductor chip product without the authority of the owner of the mask work.

17 USC 907.

"§ 907. Limitation on exclusive rights: innocent infringement

"(a) Notwithstanding any other provision of this chapter, an innocent purchaser of an infringing semiconductor chip product—

"(1) shall incur no liability under this chapter with respect to the importation or distribution of units of the infringing semiconductor chip product that occurs before the innocent purchaser has notice of protection with respect to the mask work embodied in the semiconductor chip product; and

"(2) shall be liable only for a reasonable royalty on each unit of the infringing semiconductor chip product that the innocent purchaser imports or distributes after having notice of protection with respect to the mask work embodied in the semiconductor chip product.

"(b) The amount of the royalty referred to in subsection (a)(2) shall be determined by the court in a civil action for infringement unless the parties resolve the issue by voluntary negotiation, mediation, or binding arbitration.

"(c) The immunity of an innocent purchaser from liability referred to in subsection (a)(1) and the limitation of remedies with respect to an innocent purchaser referred to in subsection (a)(2) shall extend to any person who directly or indirectly purchases an infringing semiconductor chip product from an innocent purchaser.

ment of the rights set forth in section 905 with respect to importation. These regulations may require, as a condition for the exclusion of articles from the United States, that the person seeking exclusion take any one or more of the following actions:

"(A) Obtain a court order enjoining, or an order of the International Trade Commission under section 337 of the Tariff Act of 1930 excluding, importation of the articles.

19 USC 1337.

"(B) Furnish proof that the mask work involved is protected under this chapter and that the importation of the articles would infringe the rights in the mask work under this chapter.

"(C) Post a surety bond for any injury that may result if the detention or exclusion of the articles proves to be unjustified.

"(2) Articles imported in violation of the rights set forth in section 905 are subject to seizure and forfeiture in the same manner as property imported in violation of the customs laws. Any such forfeited articles shall be destroyed as directed by the Secretary of the Treasury or the court, as the case may be, except that the articles may be returned to the country of export whenever it is shown to the satisfaction of the Secretary of the Treasury that the importer had no reasonable grounds for believing that his or her acts constituted a violation of the law.

Seizure and forfeiture.

"§ 911. Civil actions

17 USC 911.

"(a) Any court having jurisdiction of a civil action arising under this chapter may grant temporary restraining orders, preliminary injunctions, and permanent injunctions on such terms as the court may deem reasonable to prevent or restrain infringement of the exclusive rights in a mask work under this chapter.

"(b) Upon finding an infringer liable, to a person entitled under section 910(b)(1) to institute a civil action, for an infringement of any exclusive right under this chapter, the court shall award such person actual damages suffered by the person as a result of the infringement. The court shall also award such person the infringer's profits that are attributable to the infringement and are not taken into account in computing the award of actual damages. In establishing the infringer's profits, such person is required to present proof only of the infringer's gross revenue, and the infringer is required to prove his or her deductible expenses and the elements of profit attributable to factors other than the mask work.

"(c) At any time before final judgment is rendered, a person entitled to institute a civil action for infringement may elect, instead of actual damages and profits as provided by subsection (b), an award of statutory damages for all infringements involved in the action, with respect to any one mask work for which any one infringer is liable individually, or for which any two or more infringers are liable jointly and severally, in an amount not more than \$250,000 as the court considers just.

"(d) An action for infringement under this chapter shall be barred unless the action is commenced within three years after the claim accrues.

"(e)(1) At any time while an action for infringement of the exclusive rights in a mask work under this chapter is pending, the court may order the impounding, on such terms as it may deem reasonable, of all semiconductor chip products, and any drawings, tapes, masks, or other products by means of which such products may be reproduced, that are claimed to have been made, imported, or used in violation of those exclusive rights. Insofar as practicable, applica-

tions for orders under this paragraph shall be heard and determined in the same manner as an application for a temporary restraining order or preliminary injunction.

"(2) As part of a final judgment or decree, the court may order the destruction or other disposition of any infringing semiconductor chip products, and any masks, tapes, or other articles by means of which such products may be reproduced.

"(f) In any civil action arising under this chapter, the court in its discretion may allow the recovery of full costs, including reasonable attorneys' fees, to the prevailing party.

17 USC 912.

"§ 912 Relation to other laws17 USC 1-801 *et seq.*

"(a) Nothing in this chapter shall affect any right or remedy held by any person under chapters 1 through 8 of this title, or under title 35.

"(b) Except as provided in section 908(b) of this title, references to 'this title' or 'title 17' in chapters 1 through 8 of this title shall be deemed not to apply to this chapter.

"(c) The provisions of this chapter shall preempt the laws of any State to the extent those laws provide any rights or remedies with respect to a mask work which are equivalent to those rights or remedies provided by this chapter, except that such preemption shall be effective only with respect to actions filed on or after January 1, 1986.

28 USC 1338, 1400, 1498.

"(d) The provisions of sections 1338, 1400(a), and 1498 (b) and (c) of title 28 shall apply with respect to exclusive rights in mask works under this chapter.

"(e) Notwithstanding subsection (c), nothing in this chapter shall detract from any rights of a mask work owner, whether under Federal law (exclusive of this chapter) or under the common law or the statutes of a State, heretofore or hereafter declared or enacted, with respect to any mask work first commercially exploited before July 1, 1983.

17 USC 913.

"§ 913. Transitional provisions

Prohibition.

"(a) No application for registration under section 908 may be filed, and no civil action under section 910 or other enforcement proceeding under this chapter may be instituted, until sixty days after the date of the enactment of this chapter.

Prohibition.

"(b) No monetary relief under section 911 may be granted with respect to any conduct that occurred before the date of the enactment of this chapter, except as provided in subsection (d).

"(c) Subject to subsection (a), the provisions of this chapter apply to all mask works that are first commercially exploited or are registered under this chapter, or both, on or after the date of the enactment of this chapter.

"(d)(1) Subject to subsection (a), protection is available under this chapter to any mask work that was first commercially exploited on or after July 1, 1983, and before the date of the enactment of this chapter, if a claim of protection in the mask work is registered in the Copyright Office before July 1, 1985, under section 908.

"(2) In the case of any mask work described in paragraph (1) that is provided protection under this chapter, infringing semiconductor chip product units manufactured before the date of the enactment of this chapter may, without liability under sections 910 and 911, be imported into or distributed in the United States, or both, until two years after the date of registration of the mask work under section

908, but only if the importer or distributor, as the case may be, first pays or offers to pay the reasonable royalty referred to in section 907(a)(2) to the mask work owner, on all such units imported or distributed, or both, after the date of the enactment of this chapter.

"(3) In the event that a person imports or distributes infringing semiconductor chip product units described in paragraph (2) of this subsection without first paying or offering to pay the reasonable royalty specified in such paragraph, or if the person refuses or fails to make such payment, the mask work owner shall be entitled to the relief provided in sections 910 and 911.

"§ 914. International transitional provisions

17 USC 914.

"(a) Notwithstanding the conditions set forth in subparagraphs (A) and (C) of section 902(a)(1) with respect to the availability of protection under this chapter to nationals, domiciliaries, and sovereign authorities of a foreign nation, the Secretary of Commerce may, upon the petition of any person, or upon the Secretary's own motion, issue an order extending protection under this chapter to such foreign nationals, domiciliaries, and sovereign authorities if the Secretary finds—

"(1) that the foreign nation is making good faith efforts and reasonable progress toward—

"(A) entering into a treaty described in section 902(a)(1)(A); or

"(B) enacting legislation that would be in compliance with subparagraph (A) or (B) of section 902(a)(2); and

"(2) that the nationals, domiciliaries, and sovereign authorities of the foreign nation, and persons controlled by them, are not engaged in the misappropriation, or unauthorized distribution or commercial exploitation, of mask works; and

"(3) that issuing the order would promote the purposes of this chapter and international comity with respect to the protection of mask works.

"(b) While an order under subsection (a) is in effect with respect to a foreign nation, no application for registration of a claim for protection in a mask work under this chapter may be denied solely because the owner of the mask work is a national, domiciliary, or sovereign authority of that foreign nation, or solely because the mask work was first commercially exploited in that foreign nation.

Prohibition.

"(c) Any order issued by the Secretary of Commerce under subsection (a) shall be effective for such period as the Secretary designates in the order, except that no such order may be effective after the date on which the authority of the Secretary of Commerce terminates under subsection (e). The effective date of any such order shall also be designated in the order. In the case of an order issued upon the petition of a person, such effective date may be no earlier than the date on which the Secretary receives such petition.

"(d)(1) Any order issued under this section shall terminate if—

Termination.

"(A) the Secretary of Commerce finds that any of the conditions set forth in paragraphs (1), (2), and (3) of subsection (a) no longer exist; or

"(B) mask works of nationals, domiciliaries, and sovereign authorities of that foreign nation or mask works first commercially exploited in that foreign nation become eligible for protection under subparagraph (A) or (C) of section 902(a)(1).

"(2) Upon the termination or expiration of an order issued under this section, registrations of claims of protection in mask works

made pursuant to that order shall remain valid for the period specified in section 904.

"(e) The authority of the Secretary of Commerce under this section shall commence on the date of the enactment of this chapter, and shall terminate three years after such date of enactment.

"(f)(1) The Secretary of Commerce shall promptly notify the Register of Copyrights and the Committees on the Judiciary of the Senate and the House of Representatives of the issuance or termination of any order under this section, together with a statement of the reasons for such action. The Secretary shall also publish such notification and statement of reasons in the Federal Register.

"(2) Two years after the date of the enactment of this chapter, the Secretary of Commerce, in consultation with the Register of Copyrights, shall transmit to the Committees on the Judiciary of the Senate and the House of Representatives a report on the actions taken under this section and on the current status of international recognition of mask work protection. The report shall include such recommendations for modifications of the protection accorded under this chapter to mask works owned by nationals, domiciliaries, or sovereign authorities of foreign nations as the Secretary, in consultation with the Register of Copyrights, considers would promote the purposes of this chapter and international comity with respect to mask work protection."

Federal
Register,
publication.
Report.

TECHNICAL AMENDMENT

SEC. 303. The table of chapters at the beginning of title 17, United States Code, is amended by adding at the end thereof the following new item:

"9. Protection of semiconductor chip products 901".

AUTHORIZATION OF APPROPRIATIONS

17 USC 901 note.

SEC. 304. There are authorized to be appropriated such sums as may be necessary to carry out the purposes of this title and the amendments made by this title.

TITLE V—GOVERNMENT RESEARCH AND DEVELOPMENT
PATENT POLICY

SEC. 501. Chapter 18 of title 35, United States Code, is amended—

35 USC 201.

(1) by adding "or any novel variety of plant which is or may be protectable under the Plant Variety Protection Act (7 U.S.C. 2321 et seq.);" immediately after "title" in section 201(d);

(2) by adding ": *Provided*, That in the case of a variety of plant, the date of determination (as defined in section 41(d) of the Plant Variety Protection Act (7 U.S.C. 2401(d))) must also occur during the period of contract performance" immediately after "agreement" in section 201(e);

Contracts with
U.S.
Grants.
35 USC 202.

(3) in section 202(a), by amending clause (i) to read as follows:
"(i) when the contractor is not located in the United States or does not have a place of business located in the United States or is subject to the control of a foreign government,"; by striking the word "or" before "ii", and by adding after the words "security of such activities" in the first sentence of such para-

graph, the following: "or, iv) when the funding agreement includes the operation of a Government-owned, contractor-operated facility of the Department of Energy primarily dedicated to that Department's naval nuclear propulsion or weapons related programs and all funding agreement limitations under this subparagraph on the contractor's right to elect title to a subject invention are limited to inventions occurring under the above two programs of the Department of Energy."

(4) by amending paragraphs (1) and (2) of section 202(b) to read as follows:

35 USC 202.

"(b)(1) The rights of the Government under subsection (a) shall not be exercised by a Federal agency unless it first determines that at least one of the conditions identified in clauses (i) through (iv) of subsection (a) exists. Except in the case of subsection (a)(iii), the agency shall file with the Secretary of Commerce, within thirty days after the award of the applicable funding agreement, a copy of such determination. In the case of a determination under subsection (a)(ii), the statement shall include an analysis justifying the determination. In the case of determinations applicable to funding agreements with small business firms, copies shall also be sent to the Chief Counsel for Advocacy of the Small Business Administration. If the Secretary of Commerce believes that any individual determination or pattern of determinations is contrary to the policies and objectives of this chapter or otherwise not in conformance with this chapter, the Secretary shall so advise the head of the agency concerned and the Administrator of the Office of Federal Procurement Policy, and recommend corrective actions.

Small business.

"(2) Whenever the Administrator of the Office of Federal Procurement Policy has determined that one or more Federal agencies are utilizing the authority of clause (i) or (ii) of subsection (a) of this section in a manner that is contrary to the policies and objectives of this chapter, the Administrator is authorized to issue regulations describing classes of situations in which agencies may not exercise the authorities of those clauses."

Regulations.

(4A) By adding at the end of section 202(b) the following new paragraph:

Contracts with
U.S.
Grants.

"(4) If the contractor believes that a determination is contrary to the policies and objectives of this chapter or constitutes an abuse of discretion by the agency, the determination shall be subject to the last paragraph of section 203(2)."

(5) by amending paragraphs (1), (2), (3), and (4) of section 202(c) to read as follows:

Contracts with
U.S.
Grants.

"(1) That the contractor disclose each subject invention to the Federal agency within a reasonable time after it becomes known to contractor personnel responsible for the administration of patent matters, and that the Federal Government may receive title to any subject invention not disclosed to it within such time.

"(2) That the contractor make a written election within two years after disclosure to the Federal agency (or such additional time as may be approved by the Federal agency) whether the contractor will retain title to a subject invention: *Provided*, That in any case where publication, on sale, or public use, has initiated the one year statutory period in which valid patent protection can still be obtained in the United States, the period for election may be shortened by the Federal agency to a date that is not more than sixty days prior to the end of the statutory

period: *And provided further*, That the Federal Government may receive title to any subject invention in which the contractor does not elect to retain rights or fails to elect rights within such times.

"(3) That a contractor electing rights in a subject invention agrees to file a patent application prior to any statutory bar date that may occur under this title due to publication, on sale, or public use, and shall thereafter file corresponding patent applications in other countries in which it wishes to retain title within reasonable times, and that the Federal Government may receive title to any subject inventions in the United States or other countries in which the contractor has not filed patent applications on the subject invention within such times.

"(4) With respect to any invention in which the contractor elects rights, the Federal agency shall have a nonexclusive, nontransferrable, irrevocable, paid-up license to practice or have practiced for or on behalf of the United States any subject invention throughout the world: *Provided*, That the funding agreement may provide for such additional rights; including the right to assign or have assigned foreign patent rights in the subject invention, as are determined by the agency as necessary for meeting the obligations of the United States under any treaty, international agreement, arrangement of cooperation, memorandum of understanding, or similar arrangement, including military agreement relating to weapons development and production."

(6) by striking out "may" in section 202(c)(5) and inserting in lieu thereof "as well as any information on utilization or efforts at obtaining utilization obtained as part of a proceeding under section 203 of this chapter shall";

(7) by striking out "and which is not, itself, engaged in or does not hold a substantial interest in other organizations engaged in the manufacture or sales of products or the use of processes that might utilize the invention or be in competition with embodiments of the invention" in clause (A) of section 202(c)(7);

(8) by amending clauses (B)-(D) of section 202(c)(7) to read as follows: "(B) a requirement that the contractor share royalties with the inventor; (C) except with respect to a funding agreement for the operation of a Government-owned-contractor-operated facility, a requirement that the balance of any royalties or income earned by the contractor with respect to subject inventions, after payment of expenses (including payments to inventors) incidental to the administration of subject inventions, be utilized for the support of scientific research or education; (D) a requirement that, except where it proves infeasible after a reasonable inquiry, in the licensing of subject inventions shall be given to small business firms; and (E) with respect to a funding agreement for the operation of a Government-owned-contractor-operated facility, requirements (i) that after payment of patenting costs, licensing costs, payments to inventors, and other expenses incidental to the administration of subject inventions, 100 percent of the balance of any royalties or income earned and retained by the contractor during any fiscal year up to an amount equal to 5 percent of the annual budget of the facility, shall be used by the contractor for scientific research, development, and education consistent with the research and development mission and objectives of the facility, including activities

International
agreements.
Defense and
national
security.

35 USC 202.

Contracts with
U.S.
Grants.

Small business.

that increase the licensing potential of other inventions of the facility; provided that if said balance exceeds 5 percent of the annual budget of the facility, that 75 percent of such excess shall be paid to the Treasury of the United States and the remaining 25 percent shall be used for the same purposes as described above in this clause (D); and (ii) that, to the extent it provides the most effective technology transfer, the licensing of subject inventions shall be administered by contractor employees on location at the facility."

(9) by adding "(1. before the word 'With' in the first line of section 203, and by adding at the end of section 203 the following:

35 USC 203.

"(2) A determination pursuant to this section or section 202(b)(4) shall not be subject to the Contract Disputes Act (41 U.S.C. § 601 et seq.). An administrative appeals procedure shall be established by regulations promulgated in accordance with section 206. Additionally, any contractor, inventor, assignee, or exclusive licensee adversely affected by a determination under this section may, at any time within sixty days after the determination is issued, file a petition in the United States Claims Court, which shall have jurisdiction to determine the appeal on the record and to affirm, reverse, remand or modify, "as appropriate, the determination of the Federal agency. In cases described in paragraphs (a) and (c), the agency's determination shall be held in abeyance pending the exhaustion of appeals or petitions filed under the preceding sentence.";

Regulations.

(10) by amending section 206 to read as follows:

35 USC 206.

"§ 206. Uniform clauses and regulations

"The Secretary of Commerce may issue regulations which may be made applicable to Federal agencies implementing the provisions of sections 202 through 204 of this chapter and shall establish standard funding agreement provisions required under this chapter. The regulations and the standard funding agreement shall be subject to public comment before their issuance.";

(11) in section 207 by inserting "(a)" before "Each Federal" and by adding the following new subsection at the end thereof: "(b) For the purpose of assuring the effective management of Government-owned inventions, the Secretary of Commerce is authorized to—

"(1) assist Federal agency efforts to promote the licensing and utilization of Government-owned inventions;

"(2) assist Federal agencies in seeking protection and maintaining inventions in foreign countries, including the payment of fees and costs connected therewith; and

"(3) consult with and advise Federal agencies as to areas of science and technology research and development with potential for commercial utilization."; and

(12) in section 208 by striking out "Administrator of General Services" and inserting in lieu thereof "Secretary of Commerce".

(13) by deleting from the first sentence of section 210(c), "August 23, 1971 (36 Fed. Reg. 16887)" and inserting in lieu thereof "February 18, 1983", and by inserting the following before the period at the end of the first sentence of section 210(c) "except that all funding agreements, including those with other than small business firms and nonprofit organizations, shall

Contracts with
U.S.
Grants.

include the requirements established in paragraph 202(c)(4) and section 203 of this title."

(14) by adding at the end thereof the following new section:

Prohibition.
35 USC 212.

"§ 212. Disposition of rights in educational awards

"No scholarship, fellowship, training grant, or other funding agreement made by a Federal agency primarily to an awardee for educational purposes will contain any provision giving the Federal agency any rights to inventions made by the awardee."; and

(15) by adding at the end of the table of sections for the chapter the following new item:

"212. Disposition of rights in educational awards."

Approved November 8, 1984.

LEGISLATIVE HISTORY—H.R. 6163:

HOUSE REPORT No. 98-1062 (Comm. on the Judiciary).

CONGRESSIONAL RECORD, Vol. 130 (1984):

Sept. 24, considered and passed House.

Oct. 3, considered and passed Senate, amended.

Oct. 9, House concurred in Senate amendments.

WEEKLY COMPILATION OF PRESIDENTIAL DOCUMENTS, Vol. 20, No. 45 (1984):

July 9, Presidential statement.

Public Law 99-502
99th Congress

An Act

To amend the Stevenson-Wydler Technology Innovation Act of 1980 to promote technology transfer by authorizing Government-operated laboratories to enter into cooperative research agreements and by establishing a Federal Laboratory Consortium for Technology Transfer within the National Bureau of Standards, and for other purposes.

Oct. 20, 1986
[H.R. 3773]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "Federal Technology Transfer Act of 1986".

SEC. 2. COOPERATIVE RESEARCH AND DEVELOPMENT AGREEMENTS.

The Stevenson-Wydler Technology Innovation Act of 1980 is amended by redesignating sections 12 through 15 as sections 16 through 19, and by inserting immediately after section 11 the following:

"SEC. 12. COOPERATIVE RESEARCH AND DEVELOPMENT AGREEMENTS.

"(a) GENERAL AUTHORITY.—Each Federal agency may permit the director of any of its Government-operated Federal laboratories—

"(1) to enter into cooperative research and development agreements on behalf of such agency (subject to subsection (c) of this section) with other Federal agencies; units of State or local government; industrial organizations (including corporations, partnerships, and limited partnerships, and industrial development organizations); public and private foundations; nonprofit organizations (including universities); or other persons (including licensees of inventions owned by the Federal agency); and

"(2) to negotiate licensing agreements under section 207 of title 35, United States Code, or under other authorities for Government-owned inventions made at the laboratory and other inventions of Federal employees that may be voluntarily assigned to the Government.

"(b) ENUMERATED AUTHORITY.—Under agreements entered into pursuant to subsection (a)(1), a Government-operated Federal laboratory may (subject to subsection (c) of this section)—

"(1) accept, retain, and use funds, personnel, services, and property from collaborating parties and provide personnel, services, and property to collaborating parties;

"(2) grant or agree to grant in advance, to a collaborating party, patent licenses or assignments, or options thereto, in any invention made in whole or in part by a Federal employee under the agreement, retaining a nonexclusive, nontransferrable, irrevocable, paid-up license to practice the invention or have the invention practiced throughout the world by or on behalf of the Government and such other rights as the Federal laboratory deems appropriate; and

Federal
Technology
Transfer Act of
1986.
Commerce and
trade.
Government
organization and
employees.
15 USC 3701
note.
15 USC 3701
note.
15 USC
3711-3714.
15 USC 3710a.

State and local
governments.
Business and
industry.
Schools and
colleges.

Patents and
trademarks.

"(3) waive, subject to reservation by the Government of a nonexclusive, irrevocable, paid-up license to practice the invention or have the invention practiced throughout the world by or on behalf of the Government, in advance, in whole or in part, any right of ownership which the Federal Government may have to any subject invention made under the agreement by a collaborating party or employee of a collaborating party; and

"(4) to the extent consistent with any applicable agency requirements and standards of conduct, permit employees or former employees of the laboratory to participate in efforts to commercialize inventions they made while in the service of the United States.

Regulations.

"(c) **CONTRACT CONSIDERATIONS.**—(1) A Federal agency may issue regulations on suitable procedures for implementing the provisions of this section; however, implementation of this section shall not be delayed until issuance of such regulations.

"(2) The agency in permitting a Federal laboratory to enter into agreements under this section shall be guided by the purposes of this Act.

"(3)(A) Any agency using the authority given it under subsection (a) shall review employee standards of conduct for resolving potential conflicts of interest to make sure they adequately establish guidelines for situations likely to arise through the use of this authority, including but not limited to cases where present or former employees or their partners negotiate licenses or assignments of titles to inventions or negotiate cooperative research and development agreements with Federal agencies (including the agency with which the employee involved is or was formerly employed).

"(B) If, in implementing subparagraph (A), an agency is unable to resolve potential conflicts of interest within its current statutory framework, it shall propose necessary statutory changes to be forwarded to its authorizing committees in Congress.

"(4) The laboratory director in deciding what cooperative research and development agreements to enter into shall—

Small business.

"(A) give special consideration to small business firms, and consortia involving small business firms; and

Business and
industry.
International
agreements.

"(B) give preference to business units located in the United States which agree that products embodying inventions made under the cooperative research and development agreement or produced through the use of such inventions will be manufactured substantially in the United States and, in the case of any industrial organization or other person subject to the control of a foreign company or government, as appropriate, take into consideration whether or not such foreign government permits United States agencies, organizations, or other persons to enter into cooperative research and development agreements and licensing agreements.

"(5)(A) If the head of the agency or his designee desires an opportunity to disapprove or require the modification of any such agreement, the agreement shall provide a 30-day period within which such action must be taken beginning on the date the agreement is presented to him or her by the head of the laboratory concerned.

"(B) In any case in which the head of an agency or his designee disapproves or requires the modification of an agreement presented under this section, the head of the agency or such designee shall

transmit a written explanation of such disapproval or modification to the head of the laboratory concerned.

"(6) Each agency shall maintain a record of all agreements entered into under this section. Records.

"(d) DEFINITION.—As used in this section—

"(1) the term 'cooperative research and development agreement' means any agreement between one or more Federal laboratories and one or more non-Federal parties under which the Government, through its laboratories, provides personnel, services, facilities, equipment, or other resources with or without reimbursement (but not funds to non-Federal parties) and the non-Federal parties provide funds, personnel, services, facilities, equipment, or other resources toward the conduct of specified research or development efforts which are consistent with the missions of the laboratory; except that such term does not include a procurement contract or cooperative agreement as those terms are used in sections 6303, 6304, and 6305 of title 31, United States Code; and

"(2) the term 'laboratory' means a facility or group of facilities owned, leased, or otherwise used by a Federal agency, a substantial purpose of which is the performance of research, development, or engineering by employees of the Federal Government.

"(e) DETERMINATION OF LABORATORY MISSIONS.—For purposes of this section, an agency shall make separate determinations of the mission or missions of each of its laboratories.

"(f) RELATIONSHIP TO OTHER LAWS.—Nothing in this section is intended to limit or diminish existing authorities of any agency."

SEC. 3. ESTABLISHMENT OF FEDERAL LABORATORY CONSORTIUM FOR TECHNOLOGY TRANSFER.

Section 11 of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3710) is amended—

- (1) by redesignating subsection (e) as subsection (f); and
- (2) by inserting after subsection (d) the following:

"(e) ESTABLISHMENT OF FEDERAL LABORATORY CONSORTIUM FOR TECHNOLOGY TRANSFER.—(1) There is hereby established the Federal Laboratory Consortium for Technology Transfer (hereinafter referred to as the 'Consortium') which, in cooperation with Federal Laboratories and the private sector, shall—

"(A) develop and (with the consent of the Federal laboratory concerned) administer techniques, training courses, and materials concerning technology transfer to increase the awareness of Federal laboratory employees regarding the commercial potential of laboratory technology and innovations;

"(B) furnish advice and assistance requested by Federal agencies and laboratories for use in their technology transfer programs (including the planning of seminars for small business and other industry);

"(C) provide a clearinghouse for requests, received at the laboratory level, for technical assistance from States and units of local governments, businesses, industrial development organizations, not-for-profit organizations including universities, Federal agencies and laboratories, and other persons, and—

"(i) to the extent that such requests can be responded to with published information available to the National Tech-

Post, p. 1791.

nical Information Service, refer such requests to that Service, and

“(ii) otherwise refer these requests to the appropriate Federal laboratories and agencies;

“(D) facilitate communication and coordination between Offices of Research and Technology Applications of Federal laboratories;

“(E) utilize (with the consent of the agency involved) the expertise and services of the National Science Foundation, the Department of Commerce, the National Aeronautics and Space Administration, and other Federal agencies, as necessary;

“(F) with the consent of any Federal laboratory, facilitate the use by such laboratory of appropriate technology transfer mechanisms such as personnel exchanges and computer-based systems;

“(G) with the consent of any Federal laboratory, assist such laboratory to establish programs using technical volunteers to provide technical assistance to communities related to such laboratory;

“(H) facilitate communication and cooperation between Offices of Research and Technology Applications of Federal laboratories and regional, State, and local technology transfer organizations;

“(I) when requested, assist colleges or universities, businesses, nonprofit organizations, State or local governments, or regional organizations to establish programs to stimulate research and to encourage technology transfer in such areas as technology program development, curriculum design, long-term research planning, personnel needs projections, and productivity assessments; and

“(J) seek advice in each Federal laboratory consortium region from representatives of State and local governments, large and small business, universities, and other appropriate persons on the effectiveness of the program (and any such advice shall be provided at no expense to the Government).

“(2) The membership of the Consortium shall consist of the Federal laboratories described in clause (1) of subsection (b) and such other laboratories as may choose to join the Consortium. The representatives to the Consortium shall include a senior staff member of each Federal laboratory which is a member of the Consortium and a representative appointed from each Federal agency with one or more member laboratories.

“(3) The representatives to the Consortium shall elect a Chairman of the Consortium.

“(4) The Director of the National Bureau of Standards shall provide the Consortium, on a reimbursable basis, with administrative services, such as office space, personnel, and support services of the Bureau, as requested by the Consortium and approved by such Director.

“(5) Each Federal laboratory or agency shall transfer technology directly to users or representatives of users, and shall not transfer technology directly to the Consortium. Each Federal laboratory shall conduct and transfer technology only in accordance with the practices and policies of the Federal agency which owns, leases, or otherwise uses such Federal laboratory.

“(6) Not later than one year after the date of the enactment of this subsection, and every year thereafter, the Chairman of the Consor-

tium shall submit a report to the President, to the appropriate authorization and appropriation committees of both Houses of the Congress, and to each agency with respect to which a transfer of funding is made (for the fiscal year or years involved) under paragraph (7), concerning the activities of the Consortium and the expenditures made by it under this subsection during the year for which the report is made.

"(7)(A) Subject to subparagraph (B), an amount equal to 0.005 percent of that portion of the research and development budget of each Federal agency that is to be utilized by the laboratories of such agency for a fiscal year referred to in subparagraph (B)(ii) shall be transferred by such agency to the National Bureau of Standards at the beginning of the fiscal year involved. Amounts so transferred shall be provided by the Bureau to the Consortium for the purpose of carrying out activities of the Consortium under this subsection.

"(B) A transfer shall be made by any Federal agency under subparagraph (A), for any fiscal year, only if—

"(i) the amount so transferred by that agency (as determined under such subparagraph) would exceed \$10,000; and

"(ii) such transfer is made with respect to the fiscal year 1987, 1988, 1989, 1990, or 1991.

"(C) The heads of Federal agencies and their designees, and the directors of Federal laboratories, may provide such additional support for operations of the Consortium as they deem appropriate.

"(8)(A) The Consortium shall use 5 percent of the funds provided in paragraph (7)(A) to establish demonstration projects in technology transfer. To carry out such projects, the Consortium may arrange for grants or awards to, or enter into agreements with, nonprofit State, local, or private organizations or entities whose primary purposes are to facilitate cooperative research between the Federal laboratories and organizations not associated with the Federal laboratories, to transfer technology from the Federal laboratories, and to advance State and local economic activity.

"(B) The demonstration projects established under subparagraph (A) shall serve as model programs. Such projects shall be designed to develop programs and mechanisms for technology transfer from the Federal laboratories which may be utilized by the States and which will enhance Federal, State, and local programs for the transfer of technology.

"(C) Application for such grants, awards, or agreements shall be in such form and contain such information as the Consortium or its designee shall specify.

"(D) Any person who receives or utilizes any proceeds of a grant or award made, or agreement entered into, under this paragraph shall keep such records as the Consortium or its designee shall determine are necessary and appropriate to facilitate effective audit and evaluation, including records which fully disclose the amount and disposition of such proceeds and the total cost of the project in connection with which such proceeds were used."

Records.

SEC. 4. UTILIZATION OF FEDERAL TECHNOLOGY.

(a) RESPONSIBILITY FOR TECHNOLOGY TRANSFER.—Section 11(a) of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3710(a)) is amended—

(1) by inserting "(1)" after "POLICY.—"; and

(2) by adding at the end thereof the following new paragraphs:

(2) Technology transfer, consistent with mission responsibilities, is a responsibility of each laboratory science and engineering professional.

"(3) Each laboratory director shall ensure that efforts to transfer technology are considered positively in laboratory job descriptions, employee promotion policies, and evaluation of the job performance of scientists and engineers in the laboratory."

(b) RESEARCH AND TECHNOLOGY APPLICATIONS OFFICES.—(1) Section 11(b) of such Act (15 U.S.C. 3710(b)) is amended—

(A) by striking out "a total annual budget exceeding \$20,000,000 shall provide at least one professional individual full-time" and inserting in lieu thereof "200 or more full-time equivalent scientific, engineering, and related technical positions shall provide one or more full-time equivalent positions";

(B) by inserting immediately before the next to last sentence the following new sentence: "Furthermore, individuals filling positions in an Office of Research and Technology Applications shall be included in the overall laboratory/agency management development program so as to ensure that highly competent technical managers are full participants in the technology transfer process.";

(C) by striking out "requirements set forth in (1) and/or (2) of this subsection" in the next to last sentence and inserting in lieu thereof "requirement set forth in clause (2) of the preceding sentence"; and

(D) by striking out "either requirement (1) or (2)" in the last sentence and inserting in lieu thereof "such requirement".

(2) Section 11(c) of such Act (15 U.S.C. 3710(c)) is amended—

(A) by striking out paragraph (1) and inserting in lieu thereof the following:

"(1) to prepare application assessments for selected research and development projects in which that laboratory is engaged and which in the opinion of the laboratory may have potential commercial applications;"

(B) by striking out "the Center for the Utilization of Federal Technology" in paragraph (3) and inserting in lieu thereof "the National Technical Information Service, the Federal Laboratory Consortium for Technology Transfer," and by striking out "and" after the semicolon;

(C) by striking out "in response to requests from State and local government officials." in paragraph (4) and inserting in lieu thereof "to State and local government officials; and"; and

(D) by inserting immediately after paragraph (4) the following new paragraph:

"(5) to participate, where feasible, in regional, State, and local programs designed to facilitate or stimulate the transfer of technology for the benefit of the region, State, or local jurisdiction in which the Federal laboratory is located."

(c) DISSEMINATION OF TECHNICAL INFORMATION.—Section 11(d) of such Act (15 U.S.C. 3710(d)) is amended—

(1) by striking out "(d)" and all that follows down through "shall—" and inserting in lieu thereof the following:

(d) DISSEMINATION OF TECHNICAL INFORMATION.—The National Technical Information Service shall—

(2) by striking out paragraph (2);

(3) by striking out "existing" in paragraph (3), and redesignating such paragraph as paragraph (2);

State and local
governments.

(4) by striking out paragraph (4) and inserting in lieu thereof the following:

"(3) receive requests for technical assistance from State and local governments, respond to such requests with published information available to the Service, and refer such requests to the Federal Laboratory Consortium for Technology Transfer to the extent that such requests require a response involving more than the published information available to the Service;"

State and local
governments.

(5) by redesignating paragraphs (5) and (6) as paragraphs (4) and (5), respectively; and

(6) by striking out "(c)(4)" in paragraph (4) as so redesignated and inserting in lieu thereof "(c)(3)".

(d) AGENCY REPORTING.—Section 11(f) of such Act (15 U.S.C. 3710(e)) (as redesignated by section 3(1) of this Act) is amended—

(1) by striking out "prepare biennially a report summarizing the activities" in the first sentence and inserting in lieu thereof "report annually to the Congress, as part of the agency's annual budget submission, on the activities"; and

Reports.

(2) by striking out the second sentence.

SEC. 5. FUNCTIONS OF THE SECRETARY OF COMMERCE.

15 USC 3710.

Section 11 of the Stevenson-Wydler Technology Innovation Act of 1980 (as amended by the preceding provisions of this Act) is further amended by adding at the end thereof the following new subsection:

"(g) FUNCTIONS OF THE SECRETARY.—(1) The Secretary, in consultation with other Federal agencies, may—

"(A) make available to interested agencies the expertise of the Department of Commerce regarding the commercial potential of inventions and methods and options for commercialization which are available to the Federal laboratories, including research and development limited partnerships;

"(B) develop and disseminate to appropriate agency and laboratory personnel model provisions for use on a voluntary basis in cooperative research and development arrangements; and

"(C) furnish advice and assistance, upon request, to Federal agencies concerning their cooperative research and development programs and projects.

"(2) Two years after the date of the enactment of this subsection and every two years thereafter, the Secretary shall submit a summary report to the President and the Congress on the use by the agencies and the Secretary of the authorities specified in this Act. Other Federal agencies shall cooperate in the report's preparation.

Reports.

"(3) Not later than one year after the date of the enactment of the Federal Technology Transfer Act of 1986, the Secretary shall submit to the President and the Congress a report regarding—

Reports.

"(A) any copyright provisions or other types of barriers which tend to restrict or limit the transfer of federally funded computer software to the private sector and to State and local governments, and agencies of such State and local governments; and

Copyrights.
State and local
governments.

"(B) the feasibility and cost of compiling and maintaining a current and comprehensive inventory of all federally funded training software."

SEC. 6. REWARDS FOR SCIENTIFIC, ENGINEERING, AND TECHNICAL PERSONNEL OF FEDERAL AGENCIES.

The Stevenson-Wydler Technology Innovation Act of 1980 (as amended by the preceding provisions of this Act) is further amended by inserting after section 12 the following new section:

15 USC 3710b. **"SEC. 13. REWARDS FOR SCIENTIFIC, ENGINEERING, AND TECHNICAL PERSONNEL OF FEDERAL AGENCIES.**

"The head of each Federal agency that is making expenditures at a rate of more than \$50,000,000 per fiscal year for research and development in its Government-operated laboratories shall use the appropriate statutory authority to develop and implement a cash awards program to reward its scientific, engineering, and technical personnel for—

"(1) inventions, innovations, or other outstanding scientific or technological contributions of value to the United States due to commercial application or due to contributions to missions of the Federal agency or the Federal government, or

"(2) exemplary activities that promote the domestic transfer of science and technology development within the Federal Government and result in utilization of such science and technology by American industry or business, universities, State or local governments, or other non-Federal parties."

SEC. 7. DISTRIBUTION OF ROYALTIES RECEIVED BY FEDERAL AGENCIES.

The Stevenson-Wydler Technology Innovation Act of 1980 (as amended by the preceding provisions of this Act) is further amended by inserting after section 13 the following new section:

15 USC 3710c. **"SEC. 14. DISTRIBUTION OF ROYALTIES RECEIVED BY FEDERAL AGENCIES.**

"(a) IN GENERAL.—(1) Except as provided in paragraphs (2) and (4), any royalties or other income received by a Federal agency from the licensing or assignment of inventions under agreements entered into under section 12, and inventions of Government-operated Federal laboratories licensed under section 207 of title 35, United States Code, or under any other provision of law, shall be retained by the agency whose laboratory produced the invention and shall be disposed of as follows:

"(A)(i) The head of the agency or his designee shall pay at least 15 percent of the royalties or other income the agency receives on account of any invention to the inventor (or co-inventors) if the inventor (or each such co-inventor) was an employee of the agency at the time the invention was made. This clause shall take effect on the date of the enactment of this section unless the agency publishes a notice in the Federal Register within 90 days of such date indicating its election to file a Notice of Proposed Rulemaking pursuant to clause (ii).

Effective date.
Federal
Register,
publication.

Regulations.

"(ii) An agency may promulgate, in accordance with section 553 of title 5, United States Code, regulations providing for an alternative program for sharing royalties with inventors who were employed by the agency at the time the invention was made and whose names appear on licensed inventions. Such regulations must—

"(I) guarantee a fixed minimum payment to each such inventor, each year that the agency receives royalties from that inventor's invention;

"(II) provide a percentage royalty share to each such inventor, each year that the agency receives royalties from that inventor's invention in excess of a threshold amount;

"(III) provide that total payments to all such inventors shall exceed 15 percent of total agency royalties in any given fiscal year; and

"(IV) provide appropriate incentives from royalties for those laboratory employees who contribute substantially to the technical development of a licensed invention between the time of the filing of the patent application and the licensing of the invention.

"(iii) An agency that has published its intention to promulgate regulations under clause (ii) may elect not to pay inventors under clause (i) until the expiration of two years after the date of the enactment of this Act or until the date of the promulgation of such regulations, whichever is earlier. If an agency makes such an election and after two years the regulations have not been promulgated, the agency shall make payments (in accordance with clause (i)) of at least 15 percent of the royalties involved, retroactive to the date of the enactment of this Act. If promulgation of the regulations occurs within two years after the date of the enactment of this Act, payments shall be made in accordance with such regulations, retroactive to the date of the enactment of this Act. The agency shall retain its royalties until the inventor's portion is paid under either clause (i) or (ii). Such royalties shall not be transferred to the agency's Government-operated laboratories under subparagraph (B) and shall not revert to the Treasury pursuant to paragraph (2) as a result of any delay caused by rulemaking under this subparagraph.

"(B) The balance of the royalties or other income shall be transferred by the agency to its Government-operated laboratories, with the majority share of the royalties or other income from any invention going to the laboratory where the invention occurred; and the funds so transferred to any such laboratory may be used or obligated by that laboratory during the fiscal year in which they are received or during the succeeding fiscal year—

"(i) for payment of expenses incidental to the administration and licensing of inventions by that laboratory or by the agency with respect to inventions which occurred at that laboratory, including the fees or other costs for the services of other agencies, persons, or organizations for invention management and licensing services;

"(ii) to reward scientific, engineering, and technical employees of that laboratory;

"(iii) to further scientific exchange among the Government-operated laboratories of the agency; or

"(iv) for education and training of employees consistent with the research and development mission and objectives of the agency, and for other activities that increase the licensing potential for transfer of the technology of the Government-operated laboratories of the agency.

Any of such funds not so used or obligated by the end of the fiscal year succeeding the fiscal year in which they are received shall be paid into the Treasury of the United States.

"(2) If, after payments to inventors under paragraph (1), the royalties received by an agency in any fiscal year exceed 5 percent of the budget of the Government-operated laboratories of the agency for that year, 75 percent of such excess shall be paid to the Treasury

of the United States and the remaining 25 percent may be used or obligated for the purposes described in clauses (i) through (iv) of paragraph (1)(B) during that fiscal year or the succeeding fiscal year. Any funds not so used or obligated shall be paid into the Treasury of the United States.

Wages.

"(3) Any payment made to an employee under this section shall be in addition to the regular pay of the employee and to any other awards made to the employee, and shall not affect the entitlement of the employee to any regular pay, annuity, or award to which he is otherwise entitled or for which he is otherwise eligible or limit the amount thereof. Any payment made to an inventor as such shall continue after the inventor leaves the laboratory or agency. Payments made under this section shall not exceed \$100,000 per year to any one person, unless the President approves a larger award (with the excess over \$100,000 being treated as a Presidential award under section 4504 of title 5, United States Code).

"(4) A Federal agency receiving royalties or other income as a result of invention management services performed for another Federal agency or laboratory under section 207 of title 35, United States Code, shall retain such royalties or income to the extent required to offset the payment of royalties to inventors under clause (i) of paragraph (1)(A), costs and expenses incurred under clause (i) of paragraph (1)(B), and the cost of foreign patenting and maintenance for such invention performed at the request of the other agency or laboratory. All royalties and other income remaining after payment of the royalties, costs, and expenses described in the preceding sentence shall be transferred to the agency for which the services were performed, for distribution in accordance with clauses (i) through (iv) of paragraph (1)(B).

"(b) CERTAIN ASSIGNMENTS.—If the invention involved was one assigned to the Federal agency—

"(1) by a contractor, grantee, or participant in a cooperative agreement with the agency, or

"(2) by an employee of the agency who was not working in the laboratory at the time the invention was made, the agency unit that was involved in such assignment shall be considered to be a laboratory for purposes of this section.

"(c) REPORTS.—(1) In making their annual budget submissions Federal agencies shall submit, to the appropriate authorization and appropriation committees of both Houses of the Congress, summaries of the amount of royalties or other income received and expenditures made (including inventor awards) under this section.

"(2) The Comptroller General, five years after the date of the enactment of this section, shall review the effectiveness of the various royalty-sharing programs established under this section and report to the appropriate committees of the House of Representatives and the Senate, in a timely manner, his findings, conclusions, and recommendations for improvements in such programs."

SEC. 8. EMPLOYEE ACTIVITIES.

The Stevenson-Wydler Technology Innovation Act of 1980 (as amended by the preceding provisions of this Act) is further amended by inserting after section 14 the following new section:

"SEC. 15. EMPLOYEE ACTIVITIES.

"(a) IN GENERAL.—If a Federal agency which has the right of ownership to an invention under this Act does not intend to file for

a patent application or otherwise to promote commercialization of such invention, the agency shall allow the inventor, if the inventor is a Government employee or former employee who made the invention during the course of employment with the Government, to retain title to the invention (subject to reservation by the Government of a nonexclusive, nontransferrable, irrevocable, paid-up license to practice the invention or have the invention practiced throughout the world by or on behalf of the Government). In addition, the agency may condition the inventor's right to title on the timely filing of a patent application in cases when the Government determines that it has or may have a need to practice the invention.

“(b) DEFINITION.—For purposes of this section, Federal employees include ‘special Government employees’ as defined in section 202 of title 18, United States Code.

“(c) RELATIONSHIP TO OTHER LAWS.—Nothing in this section is intended to limit or diminish existing authorities of any agency.”.

SEC. 9. MISCELLANEOUS AND CONFORMING AMENDMENTS.

(a) REPEAL OF NATIONAL INDUSTRIAL TECHNOLOGY BOARD.—Section 10 of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3709) is repealed.

(b) CHANGES IN TERMINOLOGY OR ADMINISTRATIVE STRUCTURE.—(1) Section 3(2) of the Stevenson-Wydler Technology Innovation Act of 1980 is amended by striking out “centers for industrial technology” and inserting in lieu thereof “cooperative research centers”.

15 USC 3702.

(2) Section 4 of such Act is amended—

15 USC 3703.

(A) by striking out “Industrial Technology” in paragraph (1) and inserting in lieu thereof “Productivity, Technology, and Innovation”;

(B) by striking out “‘Director’ means the Director of the Office of Industrial Technology” in paragraph (3) and inserting in lieu thereof “‘Assistant Secretary’ means the Assistant Secretary for Productivity, Technology, and Innovation”;

(C) by striking out “Centers for Industrial Technology” in paragraph (4) and inserting in lieu thereof “Cooperative Research Centers”;

(D) by striking out paragraph (6), and redesignating paragraphs (7) and (8) as paragraphs (6) and (7), respectively; and

(E) by striking out “owned and funded” in paragraph (6) as so redesignated and inserting in lieu thereof “owned, leased, or otherwise used by a Federal agency and funded”.

(3) Section 5(a) of such Act is amended by striking out “Industrial Technology” and inserting in lieu thereof “Productivity, Technology, and Innovation”.

15 USC 3704.

(4) Section 5(b) of such Act is amended by striking out “DIRECTOR” and inserting in lieu thereof “ASSISTANT SECRETARY”, and by striking out “a Director of the Office” and all that follows and inserting in lieu thereof “an Assistant Secretary for Productivity, Technology, and Innovation.”.

(5) Section 5(c) of such Act is amended—

(A) by striking out “the Director” each place it appears and inserting in lieu thereof “the Assistant Secretary”;

(B) by redesignating paragraphs (7) and (8) as paragraphs (9) and (10), respectively; and

(C) by inserting immediately after paragraph (6) the following new paragraphs:

"(7) encourage and assist the creation of centers and other joint initiatives by State or local governments, regional organizations, private businesses, institutions of higher education, nonprofit organizations, or Federal laboratories to encourage technology transfer, to stimulate innovation, and to promote an appropriate climate for investment in technology-related industries;

"(8) propose and encourage cooperative research involving appropriate Federal entities, State or local governments, regional organizations, colleges or universities, nonprofit organizations, or private industry to promote the common use of resources, to improve training programs and curricula, to stimulate interest in high technology careers, and to encourage the effective dissemination of technology skills within the wider community;"

15 USC 3705.

(6) The heading of section 6 of such Act is amended to read as follows:

"SEC. 6. COOPERATIVE RESEARCH CENTERS."

(7) Section 6(a) of such Act is amended by striking out "Centers for Industrial Technology" and inserting in lieu thereof "Cooperative Research Centers".

(8) Section 6(b)(1) of such Act is amended by striking out "basic and applied".

(9) Section 6(e) of such Act is amended to read as follows:

35 USC 200 *et seq.*

"(e) **RESEARCH AND DEVELOPMENT UTILIZATION.**—In the promotion of technology from research and development efforts by Centers under this section, chapter 18 of title 35, United States Code, shall apply to the extent not inconsistent with this section."

(10) Section 6(f) of such Act is repealed.

15 USC 3707.

(11) The heading of section 8 of such Act is amended by striking out "CENTERS FOR INDUSTRIAL TECHNOLOGY" and inserting in lieu thereof "COOPERATIVE RESEARCH CENTERS".

(12) Section 8(a) of such Act is amended by striking out "Centers for Industrial Technology" and inserting in lieu thereof "Cooperative Research Centers".

15 USC 3714.

(13) Section 19 of such Act (as redesignated by section 2 of this Act) is amended by striking out "pursuant to this Act" and inserting in lieu thereof "pursuant to the provisions of this Act (other than sections 12, 13, and 14)".

(c) **RELATED CONFORMING AMENDMENT.**—Section 210 of title 35, United States Code, is amended by adding at the end thereof the following new subsection:

Ante, p. 1785.

"(e) The provisions of the Stevenson-Wydler Technology Innovation Act of 1980, as amended by the Federal Technology Transfer Act of 1986, shall take precedence over the provisions of this chapter to the extent that they permit or require a disposition of rights in subject inventions which is inconsistent with this chapter."

15 USC 3703.

(d) **ADDITIONAL DEFINITIONS.**—Section 4 of such Act (as amended by subsection (b)(2) of this section) is further amended by adding at the end thereof the following new paragraphs:

"(8) 'Federal agency' means any executive agency as defined in section 105 of title 5, United States Code, and the military departments as defined in section 102 of such title.

"(9) 'Invention' means any invention or discovery which is or may be patentable or otherwise protected under title 35, United States Code, or any novel variety of plant which is or may be

protectable under the Plant Variety Protection Act (7 U.S.C. 2321 et seq.).

"(10) 'Made' when used in conjunction with any invention means the conception or first actual reduction to practice of such invention.

"(11) 'Small business firm' means a small business concern as defined in section 2 of Public Law 85-536 (15 U.S.C. 632) and implementing regulations of the Administrator of the Small Business Administration.

"(12) 'Training technology' means computer software and related materials which are developed by a Federal agency to train employees of such agency, including but not limited to software for computer-based instructional systems and for interactive video disc systems."

(e) REDESIGNATION OF SECTIONS TO REFLECT CHANGES MADE BY PRECEDING PROVISIONS.—(1) Such Act (as amended by the preceding provisions of this Act) is further amended by redesignating sections 11 through 19 as sections 10 through 18, respectively.

(2)(A) Section 5(d) of such Act is amended by inserting "(as then in effect)" after "sections 5, 6, 8, 11, 12, and 13 of this Act".

(B) Section 8(a) of such Act is amended by striking out the last sentence.

(C) Section 9(d) of such Act is amended by striking out "or 13" and inserting in lieu thereof "10, 14, or 16".

(3) Section 13(a)(1) of such Act (as redesignated by paragraph (1) of this subsection) is amended by striking out "section 12" in the matter preceding subparagraph (A) and inserting in lieu thereof "section 11".

(4) Section 18 of such Act (as redesignated by paragraph (1) of this subsection) is amended by striking out "sections 12, 13, and 14" and inserting in lieu thereof "sections 11, 12, and 13".

(f) CLARIFICATION OF FINDINGS AND PURPOSES.—(1) The second sentence of section 2(10) of such Act (15 U.S.C. 3701(10)) is amended by inserting ", which include inventions, computer software, and training technologies," immediately after "developments".

(2) Section 3(3) of such Act (15 U.S.C. 3702(3)) is amended by inserting ", including inventions, software, and training technologies," immediately after "developments".

Approved October 20, 1986.

15 USC
3710-3714.
15 USC 3704.

15 USC 3707.

15 USC 3708.

15 USC 3710c.

15 USC 3714.

LEGISLATIVE HISTORY—H.R. 3773:

HOUSE REPORTS: No. 99-415 (Comm. on Science and Technology) and No. 99-953 (Comm. of Conference).

SENATE REPORTS: No. 99-283 (Comm. on Commerce, Science, and Transportation).

CONGRESSIONAL RECORD:

Vol. 131 (1985): Dec. 9, considered and passed House.

Vol. 132 (1986): Aug. 9, considered and passed Senate, amended.

Oct. 3, Senate agreed to conference report.

Oct. 7, House agreed to conference report.

Presidential Documents

Executive Order 12591 of April 10, 1987

Facilitating Access to Science and Technology

By the authority vested in me as President by the Constitution and laws of the United States of America, including the Federal Technology Transfer Act of 1986 (Public Law 99-502), the Trademark Clarification Act of 1984 (Public Law 98-620), and the University and Small Business Patent Procedure Act of 1980 (Public Law 96-517), and in order to ensure that Federal agencies and laboratories assist universities and the private sector in broadening our technology base by moving new knowledge from the research laboratory into the development of new products and processes, it is hereby ordered as follows:

Section 1. *Transfer of Federally Funded Technology.*

(a) The head of each Executive department and agency, to the extent permitted by law, shall encourage and facilitate collaboration among Federal laboratories, State and local governments, universities, and the private sector, particularly small business, in order to assist in the transfer of technology to the marketplace.

(b) The head of each Executive department and agency shall, within overall funding allocations and to the extent permitted by law:

(1) delegate authority to its government-owned, government-operated Federal laboratories:

(A) to enter into cooperative research and development agreements with other Federal laboratories, State and local governments, universities, and the private sector; and

(B) to license, assign, or waive rights to intellectual property developed by the laboratory either under such cooperative research or development agreements and from within individual laboratories.

(2) identify and encourage persons to act as conduits between and among Federal laboratories, universities, and the private sector for the transfer of technology developed from federally funded research and development efforts;

(3) ensure that State and local governments, universities, and the private sector are provided with information on the technology, expertise, and facilities available in Federal laboratories;

(4) promote the commercialization, in accord with my Memorandum to the Heads of Executive Departments and Agencies of February 18, 1983, of patentable results of federally funded research by granting to all contractors, regardless of size, the title to patents made in whole or in part with Federal funds, in exchange for royalty-free use by or on behalf of the government;

(5) implement, as expeditiously as practicable, royalty-sharing programs with inventors who were employees of the agency at the time their inventions were made, and cash award programs; and

(6) cooperate, under policy guidance provided by the Office of Federal Procurement Policy, with the heads of other affected departments and agencies in the development of a uniform policy permitting Federal contractors to retain rights to software, engineering drawings, and other technical data generated by Federal grants and contracts, in exchange for royalty-free use by or on behalf of the government.

Sec. 2. Establishment of the Technology Share Program. The Secretaries of Agriculture, Commerce, Energy, and Health and Human Services and the Administrator of the National Aeronautics and Space Administration shall select one or more of their Federal laboratories to participate in the Technology Share Program. Consistent with its mission and policies and within its overall funding allocation in any year, each Federal laboratory so selected shall:

(a) Identify areas of research and technology of potential importance to long-term national economic competitiveness and in which the laboratory possesses special competence and/or unique facilities;

(b) Establish a mechanism through which the laboratory performs research in areas identified in Section 2(a) as a participant of a consortium composed of United States industries and universities. All consortia so established shall have, at a minimum, three individual companies that conduct the majority of their business in the United States; and

(c) Limit its participation in any consortium so established to the use of laboratory personnel and facilities. However, each laboratory may also provide financial support generally not to exceed 25 percent of the total budget for the activities of the consortium. Such financial support by any laboratory in all such consortia shall be limited to a maximum of \$5 million per annum.

Sec. 3. Technology Exchange—Scientists and Engineers. The Executive Director of the President's Commission on Executive Exchange shall assist Federal agencies, where appropriate, by developing and implementing an exchange program whereby scientists and engineers in the private sector may take temporary assignments in Federal laboratories, and scientists and engineers in Federal laboratories may take temporary assignments in the private sector.

Sec. 4. International Science and Technology. In order to ensure that the United States benefits from and fully exploits scientific research and technology developed abroad,

(a) The head of each Executive department and agency, when negotiating or entering into cooperative research and development agreements and licensing arrangements with foreign persons or industrial organizations (where these entities are directly or indirectly controlled by a foreign company or government), shall, in consultation with the United States Trade Representative, give appropriate consideration:

(1) to whether such foreign companies or governments permit and encourage United States agencies, organizations, or persons to enter into cooperative research and development agreements and licensing arrangements on a comparable basis;

(2) to whether those foreign governments have policies to protect the United States intellectual property rights; and

(3) where cooperative research will involve data, technologies, or products subject to national security export controls under the laws of the United States, to whether those foreign governments have adopted adequate measures to prevent the transfer of strategic technology to destinations prohibited under such national security export controls, either through participation in the Coordinating Committee for Multilateral Export Controls (COCOM) or through other international agreements to which the United States and such foreign governments are signatories.

(b) The Secretary of State shall develop a recruitment policy that encourages scientists and engineers from other Federal agencies, academic institutions, and industry to apply for assignments in embassies of the United States; and

(c) The Secretaries of State and Commerce and the Director of the National Science Foundation shall develop a central mechanism for the prompt and efficient dissemination of science and technology information developed abroad to users in Federal laboratories, academic institutions, and the private sector on a fee-for-service basis.

Sec. 5. *Technology Transfer from the Department of Defense.* Within 6 months of the date of this Order, the Secretary of Defense shall identify a list of funded technologies that would be potentially useful to United States industries and universities. The Secretary shall then accelerate efforts to make these technologies more readily available to United States industries and universities.

Sec. 6. *Basic Science and Technology Centers.* The head of each Executive department and agency shall examine the potential for including the establishment of university research centers in engineering, science, or technology in the strategy and planning for any future research and development programs. Such university centers shall be jointly funded by the Federal Government, the private sector, and, where appropriate, the States and shall focus on areas of fundamental research and technology that are both scientifically promising and have the potential to contribute to the Nation's long-term economic competitiveness.

Sec. 7. *Reporting Requirements.* (a) Within 1 year from the date of this Order, the Director of the Office of Science and Technology Policy shall convene an interagency task force comprised of the heads of representative agencies and the directors of representative Federal laboratories, or their designees, in order to identify and disseminate creative approaches to technology transfer from Federal laboratories. The task force will report to the President on the progress of and problems with technology transfer from Federal laboratories.

(b) Specifically, the report shall include:

- (1) a listing of current technology transfer programs and an assessment of the effectiveness of these programs;
- (2) identification of new or creative approaches to technology transfer that might serve as model programs for Federal laboratories;
- (3) criteria to assess the effectiveness and impact on the Nation's economy of planned or future technology transfer efforts; and
- (4) a compilation and assessment of the Technology Share Program established in Section 2 and, where appropriate, related cooperative research and development venture programs.

Sec. 8. *Relation to Existing Law.* Nothing in this Order shall affect the continued applicability of any existing laws or regulations relating to the transfer of United States technology to other nations. The head of any Executive department or agency may exclude from consideration, under this Order, any technology that would be, if transferred, detrimental to the interests of national security.

THE WHITE HOUSE,
April 10, 1987.

[FR Doc. 87-9270

Filed 4-21-87; 11:10 am]

Billing code 3195-01-M

Editorial note: For the President's statement of Apr. 10, on signing EO 12591, see the *Weekly Compilation of Presidential Documents* (vol. 23, no. 15).

PUBLIC LAW 100-418 [H.R. 4848]; August 23, 1988

OMNIBUS TRADE AND COMPETITIVENESS ACT OF 1988

For Legislative History of Act, see p. 1547.

An Act to enhance the competitiveness of American industry, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE AND TABLE OF CONTENTS.

(a) **SHORT TITLE.**—This Act may be cited as the “Omnibus Trade and Competitiveness Act of 1988”.

(b) **TABLE OF CONTENTS.**—

Sec. 1. Short title and table of contents.

Sec. 2. Legislative history of H.R. 3 applicable

Omnibus Trade
and
Competitiveness
Act of 1988
Exports
Imports
International
agreements

Subtitle B—Technology

PART I—TECHNOLOGY COMPETITIVENESS

Technology
Competitiveness
Act.
Research and
development.
15 USC 271 note.

SEC. 5101. SHORT TITLE.

This part may be cited as the “Technology Competitiveness Act”.

102 STAT. 1426

Subtitle B—Technology

PART I—TECHNOLOGY COMPETITIVENESS

Sec. 5101. Short title.

SUBPART A—NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY

Sec. 5111. Findings and purposes.

Sec. 5112. Establishment, functions, and activities.

Sec. 5113. Repeal of provisions.

Sec. 5114. Reports to Congress; studies by the National Academies of Engineering and Sciences.

Sec. 5115. Technical amendments.

SUBPART B—TECHNOLOGY EXTENSION ACTIVITIES AND CLEARINGHOUSE ON STATE AND LOCAL INITIATIVES

Sec. 5121. Technology extension activities.

Sec. 5122. Clearinghouse on State and local initiatives.

SUBPART C—ADVANCED TECHNOLOGY PROGRAM

Sec. 5131. Advanced technology.

SUBPART D—TECHNOLOGY REVIEWS

Sec. 5141. Report of President.

Sec. 5142. Semiconductor research and development.

Sec. 5143. Review of research and development priorities in superconductors.

SUBPART E—AUTHORIZATION OF APPROPRIATIONS

Sec. 5151. Authorization of appropriations for technology activities.

Sec. 5152. Stevenson-Wydler Act authorizations.

SUBPART F—MISCELLANEOUS TECHNOLOGY AND COMMERCE PROVISIONS

Sec. 5161. Savings provision and user fees.

Sec. 5162. Miscellaneous amendments to the Stevenson-Wydler Act.

Sec. 5163. Miscellaneous technology and commerce provisions.

Sec. 5164. Metric usage.

Subpart A—National Institute of Standards and Technology

SEC. 5111. FINDINGS AND PURPOSES.

Section 1 of the Act of March 3, 1901 (15 U.S.C. 271) is amended to read as follows:

"FINDINGS AND PURPOSES

"SECTION 1. (a) The Congress finds and declares the following:

"(1) The future well-being of the United States economy depends on a strong manufacturing base and requires continual improvements in manufacturing technology, quality control, and techniques for ensuring product reliability and cost-effectiveness.

"(2) Precise measurements, calibrations, and standards help United States industry and manufacturing concerns compete strongly in world markets.

"(3) Improvements in manufacturing and product technology depend on fundamental scientific and engineering research to develop (A) the precise and accurate measurement methods and measurement standards needed to improve quality and reliability, and (B) new technological processes by which such improved methods may be used in practice to improve manufacturing and to assist industry to transfer important laboratory discoveries into commercial products.

"(4) Scientific progress, public safety, and product compatibility and standardization also depend on the development of precise measurement methods, standards, and related basic technologies.

"(5) The National Bureau of Standards since its establishment has served as the Federal focal point in developing basic measurement standards and related technologies, has taken a lead role in stimulating cooperative work among private industrial organizations in efforts to surmount technological hurdles, and otherwise has been responsible for assisting in the improvement of industrial technology.

"(6) The Federal Government should maintain a national science, engineering, and technology laboratory which provides measurement methods, standards, and associated technologies and which aids United States companies in using new technologies to improve products and manufacturing processes.

"(7) Such national laboratory also should serve industry, trade associations, State technology programs, labor organizations, professional societies, and educational institutions by disseminating information on new basic technologies including automated manufacturing processes.

"(b) It is the purpose of this Act—

"(1) to rename the National Bureau of Standards as the National Institute of Standards and Technology and to modernize and restructure that agency to augment its unique ability to enhance the competitiveness of American industry while maintaining its traditional function as lead national laboratory for providing the measurements, calibrations, and quality assurance techniques which underpin United States commerce, technological progress, improved product reliability and manufacturing processes, and public safety;

"(2) to assist private sector initiatives to capitalize on advanced technology;

"(3) to advance, through cooperative efforts among industries, universities, and government laboratories, promising research and development projects, which can be optimized by the private sector for commercial and industrial applications; and

"(4) to promote shared risks, accelerated development, and pooling of skills which will be necessary to strengthen America's manufacturing industries."

SEC. 5112. ESTABLISHMENT, FUNCTIONS, AND ACTIVITIES.

(a) **ESTABLISHMENT, FUNCTIONS, AND ACTIVITIES OF THE INSTITUTE.**—Section 2 of the Act of March 3, 1901 (15 U.S.C. 272) is amended to read as follows:

"ESTABLISHMENT, FUNCTIONS, AND ACTIVITIES

National
Institute of
Standards and
Technology.

"SEC. 2. (a) There is established within the Department of Commerce a science, engineering, technology, and measurement laboratory to be known as the National Institute of Standards and Technology (hereafter in this Act referred to as the 'Institute').

"(b) The Secretary of Commerce (hereafter in this Act referred to as the 'Secretary') acting through the Director of the Institute (hereafter in this Act referred to as the 'Director') and, if appropriate, through other officials, is authorized to take all actions necessary and appropriate to accomplish the purposes of this Act, including the following functions of the Institute—

"(1) to assist industry in the development of technology and procedures needed to improve quality, to modernize manufacturing processes, to ensure product reliability, manufacturability, functionality, and cost-effectiveness, and to facilitate the more rapid commercialization, especially by small- and medium-sized companies throughout the United States, of products based on new scientific discoveries in fields such as automation, electronics, advanced materials, biotechnology, and optical technologies;

"(2) to develop, maintain, and retain custody of the national standards of measurement, and provide the means and methods for making measurements consistent with those standards, including comparing standards used in scientific investigations, engineering, manufacturing, commerce, industry, and educational institutions with the standards adopted or recognized by the Federal Government;

"(3) to enter into contracts, including cooperative research and development arrangements, in furtherance of the purposes of this Act;

"(4) to provide United States industry, Government, and educational institutions with a national clearinghouse of current information, techniques, and advice for the achievement of higher quality and productivity based on current domestic and international scientific and technical development;

"(5) to assist industry in the development of measurements, measurement methods, and basic measurement technology;

"(6) to determine, compile, evaluate, and disseminate physical constants and the properties and performance of conventional and advanced materials when they are important to science,

engineering, manufacturing, education, commerce, and industry and are not available with sufficient accuracy elsewhere;

"(7) to develop a fundamental basis and methods for testing materials, mechanisms, structures, equipment, and systems, including those used by the Federal Government;

"(8) to assure the compatibility of United States national measurement standards with those of other nations;

"(9) to cooperate with other departments and agencies of the Federal Government, with industry, with State and local governments, with the governments of other nations and international organizations, and with private organizations in establishing standard practices, codes, specifications, and voluntary consensus standards;

"(10) to advise government and industry on scientific and technical problems; and

"(11) to invent, develop, and (when appropriate) promote transfer to the private sector of measurement devices to serve special national needs.

"(c) In carrying out the functions specified in subsection (b), the Secretary, acting through the Director and, if appropriate, through other appropriate officials, may, among other things—

"(1) construct physical standards;

"(2) test, calibrate, and certify standards and standard measuring apparatus;

"(3) study and improve instruments, measurement methods, and industrial process control and quality assurance techniques;

"(4) cooperate with the States in securing uniformity in weights and measures laws and methods of inspection;

"(5) cooperate with foreign scientific and technical institutions to understand technological developments in other countries better;

"(6) prepare, certify, and sell standard reference materials for use in ensuring the accuracy of chemical analyses and measurements of physical and other properties of materials;

"(7) in furtherance of the purposes of this Act, accept research associates, cash donations, and donated equipment from industry, and also engage with industry in research to develop new basic and generic technologies for traditional and new products and for improved production and manufacturing;

"(8) study and develop fundamental scientific understanding and improved measurement, analysis, synthesis, processing, and fabrication methods for chemical substances and compounds, ferrous and nonferrous metals, and all traditional and advanced materials, including processes of degradation;

"(9) investigate ionizing and nonionizing radiation and radioactive substances, their uses, and ways to protect people, structures, and equipment from their harmful effects;

"(10) determine the atomic and molecular structure of matter, through analysis of spectra and other methods, to provide a basis for predicting chemical and physical structures and reactions and for designing new materials and chemical substances, including biologically active macromolecules;

"(11) perform research on electromagnetic waves, including optical waves, and on properties and performance of electrical, electronic, and electromagnetic devices and systems and their essential materials, develop and maintain related standards,

and disseminate standard signals through broadcast and other means;

"(12) develop and test standard interfaces, communication protocols, and data structures for computer and related telecommunications systems;

"(13) study computer systems (as that term is defined in section 20(d) of this Act) and their use to control machinery and processes;

"(14) perform research to develop standards and test methods to advance the effective use of computers and related systems and to protect the information stored, processed, and transmitted by such systems and to provide advice in support of policies affecting Federal computer and related telecommunications systems;

"(15) determine properties of building materials and structural elements, and encourage their standardization and most effective use, including investigation of fire-resisting properties of building materials and conditions under which they may be most efficiently used, and the standardization of types of appliances for fire prevention;

"(16) undertake such research in engineering, pure and applied mathematics, statistics, computer science, materials science, and the physical sciences as may be necessary to carry out and support the functions specified in this section;

"(17) compile, evaluate, publish, and otherwise disseminate general, specific and technical data resulting from the performance of the functions specified in this section or from other sources when such data are important to science, engineering, or industry, or to the general public, and are not available elsewhere;

"(18) collect, create, analyze, and maintain specimens of scientific value;

"(19) operate national user facilities;

"(20) evaluate promising inventions and other novel technical concepts submitted by inventors and small companies and work with other Federal agencies, States, and localities to provide appropriate technical assistance and support for those inventions which are found in the evaluation process to have commercial promise;

"(21) demonstrate the results of the Institute's activities by exhibits or other methods of technology transfer, including the use of scientific or technical personnel of the Institute for part-time or intermittent teaching and training activities at educational institutions of higher learning as part of and incidental to their official duties; and

"(22) undertake such other activities similar to those specified in this subsection as the Director determines appropriate."

15 USC 1532.

(b) OTHER FUNCTIONS OF SECRETARY.—The Secretary of Commerce is authorized to—

(1) conduct research on all of the telecommunications sciences, including wave propagation and reception, the conditions which affect electromagnetic wave propagation and reception, electromagnetic noise and interference, radio system characteristics, operating techniques affecting the use of the electromagnetic spectrum, and methods for improving the use of the electromagnetic spectrum for telecommunications purposes;

(2) prepare and issue predictions of electromagnetic wave propagation conditions and warnings of disturbances in such conditions;

(3) investigate conditions which affect the transmission of radio waves from their source to a receiver and the compilation and distribution of information on such transmission of radio waves as a basis for choice of frequencies to be used in radio operations;

(4) conduct research and analysis in the general field of telecommunications sciences in support of assigned functions and in support of other Government agencies;

(5) investigate nonionizing electromagnetic radiation and its uses, as well as methods and procedures for measuring and assessing electromagnetic environments, for the purpose of developing and coordinating policies and procedures affecting Federal Government use of the electromagnetic spectrum for telecommunications purposes;

(6) compile, evaluate, publish, and otherwise disseminate general scientific and technical data resulting from the performance of the functions specified in this section or from other sources when such data are important to science, engineering, or industry, or to the general public, and are not available elsewhere; and

(7) undertake such other activities similar to those specified in this subsection as the Secretary of Commerce determines appropriate.

(c) **DIRECTOR OF INSTITUTE.**—(1) Section 5 of the Act of March 3, 1901 (15 U.S.C. 274) is amended to read as follows:

"Sec. 5. The Director shall be appointed by the President, by and with the advice and consent of the Senate. The Director shall have the general supervision of the Institute, its equipment, and the exercise of its functions. The Director shall make an annual report to the Secretary of Commerce. The Director may issue, when necessary, bulletins for public distribution, containing such information as may be of value to the public or facilitate the exercise of the functions of the Institute. The Director shall be compensated at the rate in effect for level IV of the Executive Schedule under section 5315 of title 5, United States Code. Until such time as the Director assumes office under this section, the most recent Director of the National Bureau of Standards shall serve as Director."

Reports.

(2) Section 5315 of title 5, United States Code, is amended by striking "National Bureau of Standards" and inserting in lieu thereof "National Institute of Standards and Technology".

(d) **ORGANIZATION PLAN.**—(1) At least 60 days before its effective date and within 120 days after the date of the enactment of this Act, an initial organization plan for the National Institute of Standards and Technology (hereafter in this part referred to as the "Institute") shall be submitted by the Director of the Institute (hereafter in this part referred to as the "Director") after consultation with the Visiting Committee on Advanced Technology, to the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate. Such plan shall—

15 USC 272 note.

(A) establish the major operating units of the Institute;

(B) assign each of the activities listed in section 2(c) of the Act of March 3, 1901, and all other functions and activities of the

Institute, to at least one of the major operating units established under subparagraph (A);

(C) provide details of a 2-year program for the Institute, including the Advanced Technology Program;

(D) provide details regarding how the Institute will expand and fund the Inventions program in accordance with section 27 of the Act of March 3, 1901; and

(E) make no changes in the Center for Building Technology or the Center for Fire Research.

(2) The Director may revise the organization plan. Any revision of the organization plan submitted under paragraph (1) shall be submitted to the appropriate committees of the House of Representatives and the Senate at least 60 days before the effective date of such revision.

(3) Until the effective date of the organization plan, the major operating units of the Institute shall be the major operating units of the National Bureau of Standards that were in existence on the date of the enactment of this Act and the Advanced Technology Program.

SEC. 5113. REPEAL OF PROVISIONS.

The second paragraph of the material relating to the Bureau of Standards in the first section of the Act of July 16, 1914 (15 U.S.C. 280), the last paragraph of the material relating to Contingent and Miscellaneous Expenses in the first section of the Act of March 4, 1913 (15 U.S.C. 281), and the first section of the Act of May 14, 1930 (15 U.S.C. 282) are repealed.

SEC. 5114. REPORTS TO CONGRESS; STUDIES BY THE NATIONAL ACADEMIES OF ENGINEERING AND SCIENCES.

The Act of March 3, 1901 (15 U.S.C. 271 et seq.) is amended—

15 USC 271 note.

(1) by redesignating section 23 as section 31; and

(2) by adding after section 22 the following new sections:

"REPORTS TO CONGRESS

15 USC 278i.

"SEC. 23. (a) The Director shall keep the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives fully and currently informed with regard to all of the activities of the Institute.

"(b) The Director shall justify in writing all changes in policies regarding fees for standard reference materials and calibration services occurring after June 30, 1987, including a description of the anticipated impact of any proposed changes on demand for and anticipated revenues from the materials and services. Changes in policy and fees shall not be effective unless and until the Director has submitted the proposed schedule and justification to the Congress and 30 days on which both Houses of Congress are in session have elapsed since such submission, except that the requirement of this sentence shall not apply with respect to adjustments which are based solely on changes in the costs of raw materials or of producing and delivering standard reference materials or calibration services.

"STUDIES BY THE NATIONAL RESEARCH COUNCIL

Contracts.
15 USC 278j.

"SEC. 24. The Director may periodically contract with the National Research Council for advice and studies to assist the Institute

Aug. 23

TRADE AND COMPETITIVENESS ACT

P.L. 100-418

Sec. 5121

to serve United States industry and science. The subjects of such advice and studies may include—

"(1) the competitive position of the United States in key areas of manufacturing and emerging technologies and research activities which would enhance that competitiveness;

"(2) potential activities of the Institute, in cooperation with industry and the States, to assist in the transfer and dissemination of new technologies for manufacturing and quality assurance; and

"(3) identification and assessment of likely barriers to widespread use of advanced manufacturing technology by the United States workforce, including training and other initiatives which could lead to a higher percentage of manufacturing jobs of United States companies being located within the borders of our country."

SEC. 5115. TECHNICAL AMENDMENTS.

(a) AMENDMENTS TO ORGANIC ACT.—(1) Except as provided in paragraph (2), the Act of March 3, 1901 (15 U.S.C. 271 et seq.) is amended by striking "National Bureau of Standards", "Bureau" and "bureau" wherever they appear and inserting in lieu thereof "Institute".

(2) Section 31 of such Act, as so redesignated by section 5114(1) of this part, is amended by striking "National Bureau of Standards" and inserting in lieu thereof "National Institute of Standards and Technology".

15 USC 271 note.

(b) AMENDMENTS TO STEVENSON-WYDLER TECHNOLOGY INNOVATION ACT OF 1980.—(1) Section 8(b) of the Stevenson-Wydler Technology Innovation Act of 1980, as so redesignated by section 5122 of this part, is amended by striking "Director" and inserting in lieu thereof "Assistant Secretary".

15 USC 3706.

(2) Sections 11(e) and 17(d) and (e) of the Stevenson-Wydler Technology Innovation Act of 1980, as so redesignated by section 5122(a)(1) of this part, are amended—

15 USC 3710, 3711a.

(A) by striking "National Bureau of Standards" wherever it appears and inserting in lieu thereof "National Institute of Standards and Technology"; and

(B) by striking "Bureau" wherever it appears and inserting in lieu thereof "Institute".

15 USC 3710.

(c) AMENDMENTS TO OTHER LAWS.—References in any other Federal law to the National Bureau of Standards shall be deemed to refer to the National Institute of Standards and Technology.

15 USC 271 note.

Subpart B—Technology Extension Activities and Clearinghouse on State and Local Initiatives

SEC. 5121. TECHNOLOGY EXTENSION ACTIVITIES.

(a) TECHNOLOGY CENTERS AND TECHNICAL ASSISTANCE.—The Act of March 3, 1901, as amended by this part, is further amended by adding after section 24 the following new sections:

"REGIONAL CENTERS FOR THE TRANSFER OF MANUFACTURING TECHNOLOGY

"Sec. 25. (a) The Secretary, through the Director and, if appropriate, through other officials, shall provide assistance for the creation and support of Regional Centers for the Transfer of Manu-

15 USC 278k.

facturing Technology (hereafter in this Act referred to as the 'Centers'). Such centers shall be affiliated with any Unit 1 States-based nonprofit institution or organization, or group thereof, that applies for and is awarded financial assistance under this section in accordance with the description published by the Secretary in the Federal Register under subsection (c)(2). Individual awards shall be decided on the basis of merit review. The objective of the Centers is to enhance productivity and technological performance in United States manufacturing through—

Schools and
colleges.

"(1) the transfer of manufacturing technology and techniques developed at the Institute to Centers and, through them, to manufacturing companies throughout the United States;

"(2) the participation of individuals from industry, universities, State governments, other Federal agencies, and, when appropriate, the Institute in cooperative technology transfer activities;

"(3) efforts to make new manufacturing technology and processes usable by United States-based small- and medium-sized companies;

"(4) the active dissemination of scientific, engineering, technical, and management information about manufacturing to industrial firms, including small- and medium-sized manufacturing companies; and

"(5) the utilization, when appropriate, of the expertise and capability that exists in Federal laboratories other than the Institute.

"(b) The activities of the Centers shall include—

"(1) the establishment of automated manufacturing systems and other advanced production technologies, based on research by the Institute, for the purpose of demonstrations and technology transfer;

"(2) the active transfer and dissemination of research findings and Center expertise to a wide range of companies and enterprises, particularly small- and medium-sized manufacturers; and

"(3) loans, on a selective, short-term basis, of items of advanced manufacturing equipment to small manufacturing firms with less than 100 employees.

"(c)(1) The Secretary may provide financial support to any Center created under subsection (a) for a period not to exceed six years. The Secretary may not provide to a Center more than 50 percent of the capital and annual operating and maintenance funds required to create and maintain such Center.

Federal
Register,
publication.

"(2) The Secretary shall publish in the Federal Register, within 90 days after the date of the enactment of this section, a draft description of a program for establishing Centers, including—

"(A) a description of the program;

"(B) procedures to be followed by applicants;

"(C) criteria for determining qualified applicants;

"(D) criteria, including those listed under paragraph (4), for choosing recipients of financial assistance under this section from among the qualified applicants; and

"(E) maximum support levels expected to be available to Centers under the program in the fourth through sixth years of assistance under this section.

The Secretary shall publish a final description under this paragraph after the expiration of a 30-day comment period.

"(3) Any nonprofit institution, or group thereof, or consortia of nonprofit institutions, including entities existing on the date of the enactment of this section, may submit to the Secretary an application for financial support under this subsection, in accordance with the procedures established by the Secretary and published in the Federal Register under paragraph (2). In order to receive assistance under this section, an applicant shall provide adequate assurances that it will contribute 50 percent or more of the proposed Center's capital and annual operating and maintenance costs for the first three years and an increasing share for each of the last three years. Each applicant shall also submit a proposal for the allocation of the legal rights associated with any invention which may result from the proposed Center's activities.

"(4) The Secretary shall subject each such application to merit review. In making a decision whether to approve such application and provide financial support under this subsection, the Secretary shall consider at a minimum (A) the merits of the application, particularly those portions of the application regarding technology transfer, training and education, and adaptation of manufacturing technologies to the needs of particular industrial sectors, (B) the quality of service to be provided, (C) geographical diversity and extent of service area, and (D) the percentage of funding and amount of in-kind commitment from other sources.

"(5) Each Center which receives financial assistance under this section shall be evaluated during its third year of operation by an evaluation panel appointed by the Secretary. Each such evaluation panel shall be composed of private experts, none of whom shall be connected with the involved Center, and Federal officials. An official of the Institute shall chair the panel. Each evaluation panel shall measure the involved Center's performance against the objectives specified in this section. The Secretary shall not provide funding for the fourth through the sixth years of such Center's operation unless the evaluation is positive. If the evaluation is positive, the Secretary may provide continued funding through the sixth year at declining levels, which are designed to ensure that the Center no longer needs financial support from the Institute by the seventh year. In no event shall funding for a Center be provided by the Department of Commerce after the sixth year of the operation of a Center.

"(6) The provisions of chapter 18 of title 35, United States Code, shall (to the extent not inconsistent with this section) apply to the promotion of technology from research by Centers under this section.

"(d) There are authorized to be appropriated for the purposes of carrying out this section, a combined total of not to exceed \$40,000,000 for fiscal years 1989 and 1990. Such sums shall remain available until expended.

Appropriation
authorization.

"ASSISTANCE TO STATE TECHNOLOGY PROGRAMS

"Sec. 26. (a) In addition to the Centers program created under section 25, the Secretary, through the Director and, if appropriate, through other officials, shall provide technical assistance to State technology programs throughout the United States, in order to help those programs help businesses, particularly small- and medium-sized businesses, to enhance their competitiveness through the application of science and technology.

15 USC 2781.

Contracts.

15 USC 2781
note.

"(b) Such assistance from the Institute to State technology programs shall include, but not be limited to—

"(1) technical information and advice from Institute personnel;

"(2) workshops and seminars for State officials interested in transferring Federal technology to businesses; and

"(3) entering into cooperative agreements when authorized to do so under this or any other Act."

(b) TECHNOLOGY EXTENSION SERVICES.—(1) The Secretary shall conduct a nationwide study of current State technology extension services. The study shall include—

(A) a thorough description of each State program, including its duration, its annual budget, and the number and types of businesses it has aided;

(B) a description of any anticipated expansion of each State program and its associated costs;

(C) an evaluation of the success of the services in transferring technology, modernizing manufacturing processes, and improving the productivity and profitability of businesses;

(D) an assessment of the degree to which State services make use of Federal programs, including the Small Business Innovative Research program and the programs of the Federal Laboratory Consortium, the National Technical Information Service, the National Science Foundation, the Office of Productivity, Technology, and Innovation, and the Small Business Administration;

(E) a survey of what additional Federal information and technical assistance the services could utilize; and

(F) an assessment of how the services could be more effective agents for the transfer of Federal scientific and technical information, including the results and application of Federal and federally funded research.

The Secretary shall submit to the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate, at the time of submission of the organization plan for the Institute under section 5112(d)(1), the results of the study and an initial implementation plan for the programs under section 26 of the Act of March 3, 1901, and under this section. The implementation plan shall include methods of providing technical assistance to States and criteria for awarding financial assistance under this section. The Secretary may make use of contractors and experts for any or all of the studies and findings called for in this section.

Contracts.

(2)(A) The Institute shall enter into cooperative agreements with State technology extension services to—

(i) demonstrate methods by which the States can, in cooperation with Federal agencies, increase the use of Federal technology by businesses within their States to improve industrial competitiveness; or

(ii) help businesses in their States take advantage of the services and information offered by the Regional Centers for the Transfer of Manufacturing Technology created under section 25 of the Act of March 3, 1901.

(B) Any State, for itself or for a consortium of States, may submit to the Secretary an application for a cooperative agreement under this subsection, in accordance with procedures established by the Secretary. To qualify for a cooperative agreement under this subsec-

Aug. 23

TRADE AND COMPETITIVENESS ACT

P.L. 100-418

Sec. 5122

tion, a State shall provide adequate assurances that it will increase its spending on technology extension services by an amount at least equal to the amount of Federal assistance.

(C) In evaluating each application, the Secretary shall consider—

- (i) the number and types of additional businesses that will be assisted under the cooperative agreement;
- (ii) the extent to which the State extension service will demonstrate new methods to increase the use of Federal technology;
- (iii) geographic diversity; and
- (iv) the ability of the State to maintain the extension service after the cooperative agreement has expired.

(D) States which are party to cooperative agreements under this subsection may provide services directly or may arrange for the provision of any or all of such services by institutions of higher education or other non-profit institutions or organizations.

(3) In carrying out section 26 of the Act of March 3, 1901, and this subsection, the Secretary shall coordinate the activities with the Federal Laboratory Consortium; the National Technical Information Service; the National Science Foundation; the Office of Productivity, Technology, and Innovation; the Small Business Administration; and other appropriate Federal agencies.

(4) There are authorized to be appropriated for the purposes of this subsection \$2,000,000 for each of the fiscal years 1989, 1990, and 1991.

(5) Cooperative agreements entered into under paragraph (2) shall terminate no later than September 30, 1991.

(c) **FEDERAL TECHNOLOGY TRANSFER ACT OF 1986.**—Nothing in sections 25 or 26 of the Act of March 3, 1901, or in subsection (b) of this section shall be construed as limiting the authorities contained in the Federal Technology Transfer Act of 1986 (Public Law 99-502).

(d) **NON-ENERGY INVENTIONS PROGRAM.**—The Act of March 3, 1901, as amended by this part, is further amended by adding after section 26 the following new section:

“NON-ENERGY INVENTIONS PROGRAM

“SEC. 27. In conjunction with the initial organization of the Institute, the Director shall establish a program for the evaluation of inventions that are not energy-related to complement but not replace the Energy-Related Inventions Program established under section 14 of the Federal Nonnuclear Energy Research and Development Act of 1974 (Public Law 93-577). The Director shall submit an initial implementation plan for this program to accompany the organization plan for the Institute. The implementation plan shall include specific cost estimates, implementation schedules, and mechanisms to help finance the development of technologies the program has determined to have potential. In the preparation of the plan, the Director shall consult with appropriate Federal agencies, including the Small Business Administration and the Department of Energy, State and local government organizations, university officials, and private sector organizations in order to obtain advice on how those agencies and organizations might cooperate with the expansion of this program of the Institute.”.

SEC. 5122. CLEARINGHOUSE ON STATE AND LOCAL INITIATIVES.

(a) **CLEARINGHOUSE.**—The Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3701 et seq.) is amended—

Appropriation
authorization.

Contracts.
Termination date.

15 USC 278/
note.

15 USC 278m.

Sec. 5122

15 USC
3705-3708,
3710-3710d,
3711, 3711a,
3712-3714.
15 USC 3704a.

(1) by redesignating sections 6 through 19 as sections 7 through 20, respectively; and

(2) by inserting after section 5 the following new section:

"SEC. 6. CLEARINGHOUSE FOR STATE AND LOCAL INITIATIVES ON PRODUCTIVITY, TECHNOLOGY, AND INNOVATION.

"(a) ESTABLISHMENT.—There is established within the Office of Productivity, Technology, and Innovation a Clearinghouse for State and Local Initiatives on Productivity, Technology, and Innovation. The Clearinghouse shall serve as a central repository of information on initiatives by State and local governments to enhance the competitiveness of American business through the stimulation of productivity, technology, and innovation and Federal efforts to assist State and local governments to enhance competitiveness.

"(b) RESPONSIBILITIES.—The Clearinghouse may—

"(1) establish relationships with State and local governments, and regional and multistate organizations of such governments, which carry out such initiatives;

"(2) collect information on the nature, extent, and effects of such initiatives, particularly information useful to the Congress, Federal agencies, State and local governments, regional and multistate organizations of such governments, businesses, and the public throughout the United States;

"(3) disseminate information collected under paragraph (2) through reports, directories, handbooks, conferences, and seminars;

"(4) provide technical assistance and advice to such governments with respect to such initiatives, including assistance in determining sources of assistance from Federal agencies which may be available to support such initiatives;

"(5) study ways in which Federal agencies, including Federal laboratories, are able to use their existing policies and programs to assist State and local governments, and regional and multistate organizations of such governments, to enhance the competitiveness of American business;

"(6) make periodic recommendations to the Secretary, and to other Federal agencies upon their request, concerning modifications in Federal policies and programs which would improve Federal assistance to State and local technology and business assistance programs;

"(7) develop methodologies to evaluate State and local programs, and, when requested, advise State and local governments, and regional and multistate organizations of such governments, as to which programs are most effective in enhancing the competitiveness of American business through the stimulation of productivity, technology, and innovation; and

"(8) make use of, and disseminate, the nationwide study of State industrial extension programs conducted by the Secretary.

"(c) CONTRACTS.—In carrying out subsection (b), the Secretary may enter into contracts for the purpose of collecting information on the nature, extent, and effects of initiatives.

"(d) TRIENNIAL REPORT.—The Secretary shall prepare and transmit to the Congress once each 3 years a report on initiatives by State and local governments to enhance the competitiveness of American businesses through the stimulation of productivity, technology, and innovation. The report shall include recommendations to the Presi-

dent, the Congress, and to Federal agencies on the appropriate Federal role in stimulating State and local efforts in this area. The first of these reports shall be transmitted to the Congress before January 1, 1989."

(b) **DEFINITION.**—Section 4 of such Act is amended by adding at the end thereof the following new paragraph: 15 USC 3703.

"(13) 'Clearinghouse' means the Clearinghouse for State and Local Initiatives on Productivity, Technology, and Innovation established by section 6."

(c) **CONFORMING AMENDMENT.**—Section 10(d) of such Act, as so redesignated by section 5122(a)(1) of this part, is amended by striking "6, 8, 10, 14, 16, or 17" and inserting in lieu thereof "7, 9, 11, 15, 17, or 18". 15 USC 3708.

Subpart C—Advanced Technology Program

SEC. 5131. ADVANCED TECHNOLOGY.

(a) **ADVANCED TECHNOLOGY PROGRAM.**—The Act of March 3, 1901, as amended by this part, is further amended by adding after section 27 the following new section:

"ADVANCED TECHNOLOGY PROGRAM

"Sec. 28. (a) There is established in the Institute an Advanced Technology Program (hereafter in this Act referred to as the 'Program') for the purpose of assisting United States businesses in creating and applying the generic technology and research results necessary to— 15 USC 278n.

"(1) commercialize significant new scientific discoveries and technologies rapidly; and

"(2) refine manufacturing technologies.

The Secretary, acting through the Director, shall assure that the Program focuses on improving the competitive position of the United States and its businesses, gives preference to discoveries and to technologies that have great economic potential, and avoids providing undue advantage to specific companies.

"(b) Under the Program established in subsection (a), and consistent with the mission and policies of the Institute, the Secretary, acting through the Director, and subject to subsections (c) and (d), may—

"(1) aid United States joint research and development ventures (hereafter in this section referred to as 'joint ventures') (which may also include universities and independent research organizations), including those involving collaborative technology demonstration projects which develop and test prototype equipment and processes, through—

"(A) provision of organizational and technical advice; and

"(B) participation in such joint ventures, if the Secretary, acting through the Director, determines participation to be appropriate, which may include (i) partial start-up funding, (ii) provision of a minority share of the cost of such joint ventures for up to 5 years, and (iii) making available equipment, facilities, and personnel.

provided that emphasis is placed on areas where the Institute has scientific or technological expertise, on solving generic problems of specific industries, and on making those industries more competitive in world markets;

Contracts.

"(2) enter into contracts and cooperative agreements with United States businesses, especially small businesses, and with independent research organizations, provided that emphasis is placed on applying the Institute's research, research techniques, and expertise to those organizations' research programs;

"(3) involve the Federal laboratories in the Program, where appropriate, using among other authorities the cooperative research and development agreements provided for under section 12 of the Stevenson-Wydler Technology Innovation Act of 1980; and

"(4) carry out, in a manner consistent with the provisions of this section, such other cooperative research activities with joint ventures as may be authorized by law or assigned to the Program by the Secretary.

"(c) The Secretary, acting through the Director, is authorized to take all actions necessary and appropriate to establish and operate the Program, including—

Federal
Register,
publication.

"(1) publishing in the Federal Register draft criteria and, no later than six months after the date of the enactment of this section, following a public comment period, final criteria, for the selection of recipients of assistance under subsection (b) (1) and (2);

Reports.

"(2) monitoring how technologies developed in its research program are used, and reporting annually to the Congress on the extent of any overseas transfer of these technologies;

Contracts.

"(3) establishing procedures regarding financial reporting and auditing to ensure that contracts and awards are used for the purposes specified in this section, are in accordance with sound accounting practices, and are not funding existing or planned research programs that would be conducted in the same time period in the absence of financial assistance under the Program;

"(4) assuring that the advice of the Committee established under section 10 is considered routinely in carrying out the responsibilities of the Institute; and

"(5) providing for appropriate dissemination of Program research results.

Contracts.

"(d) When entering into contracts or making awards under subsection (b), the following shall apply:

"(1) No contract or award may be made until the research project in question has been subject to a merit review, and has, in the opinion of the reviewers appointed by the Director and the Secretary, acting through the Director, been shown to have scientific and technical merit.

"(2) In the case of joint ventures, the Program shall not make an award unless, in the judgment of the Secretary, acting through the Director, Federal aid is needed if the industry in question is to form a joint venture quickly.

"(3) No Federal contract or cooperative agreement under subsection (b)(2) shall exceed \$2,000,000 over 3 years, or be for more than 3 years unless a full and complete explanation of such proposed award, including reasons for exceeding these limits, is submitted in writing by the Secretary to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives. The proposed contract or cooperative agreement may be executed only after 30 calendar days on which both Houses of Congress are in session have elapsed since such submission. Federal funds made available under subsec-

tion (b)(2) shall be used only for direct costs and not for indirect costs, profits, or management fees of the contractor.

"(4) In determining whether to make an award to a particular joint venture, the Program shall consider whether the members of the joint venture have made provisions for the appropriate participation of small United States businesses in such joint venture.

"(5) Section 552 of title 5, United States Code, shall not apply to the following information obtained by the Federal Government on a confidential basis in connection with the activities of any business or any joint venture receiving funding under the Program—

Classified
information.

"(A) information on the business operation of any member of the business or joint venture; and

"(B) trade secrets possessed by any business or any member of the joint venture.

"(6) Intellectual property owned and developed by any business or joint venture receiving funding or by any member of such a joint venture may not be disclosed by any officer or employee of the Federal Government except in accordance with a written agreement between the owner or developer and the Program.

Intellectual
property.
Classified
information.

"(7) The Federal Government shall be entitled to a share of the licensing fees and royalty payments made to and retained by any business or joint venture to which it contributes under this section in an amount proportional to the Federal share of the costs incurred by the business or joint venture as determined by independent audit.

"(8) If a business or joint venture fails before the completion of the period for which a contract or award has been made, after all allowable costs have been paid and appropriate audits conducted, the unspent balance of the Federal funds shall be returned by the recipient to the Program.

"(9) Upon dissolution of any joint venture or at the time otherwise agreed upon, the Federal Government shall be entitled to a share of the residual assets of the joint venture proportional to the Federal share of the costs of the joint venture as determined by independent audit.

"(e) As used in this section, the term 'joint research and development venture' has the meaning given to such term in section 2(a)(6) of the National Cooperative Research Act of 1984 (15 U.S.C. 4301(a)(6))."

(b) VISITING COMMITTEE ON ADVANCED TECHNOLOGY.—Section 10 of the Act of March 3, 1901, is amended to read as follows:

"VISITING COMMITTEE ON ADVANCED TECHNOLOGY

"Sec. 10. (a) There is established within the Institute a Visiting Committee on Advanced Technology (hereafter in this Act referred to as the 'Committee'). The Committee shall consist of nine members appointed by the Director, at least five of whom shall be from United States industry. The Director shall appoint as original members of the Committee any final members of the National Bureau of Standards Visiting Committee who wish to serve in such capacity. In addition to any powers and functions otherwise granted to it by this Act, the Committee shall review and make recommendations regarding general policy for the Institute, its organization, its

Establishment.
15 USC 278.

budget, and its programs within the framework of applicable national policies as set forth by the President and the Congress.

"(b) The persons appointed as members of the Committee—

"(1) shall be eminent in fields such as business, research, new product development, engineering, labor, education, management consulting, environment, and international relations;

"(2) shall be selected solely on the basis of established records of distinguished service;

"(3) shall not be employees of the Federal Government; and

"(4) shall be so selected as to provide representation of a cross-section of the traditional and emerging United States industries.

The Director is requested, in making appointments of persons as members of the Committee, to give due consideration to any recommendations which may be submitted to the Director by the National Academies, professional societies, business associations, labor associations, and other appropriate organizations.

"(c)(1) The term of office of each member of the Committee, other than the original members, shall be 3 years; except that any member appointed to fill a vacancy occurring prior to the expiration of the term for which his predecessor was appointed shall be appointed for the remainder of such term. Any person who has completed two consecutive full terms of service on the Committee shall thereafter be ineligible for appointment during the one-year period following the expiration of the second such term.

"(2) The original members of the Committee shall be elected to three classes of three members each; one class shall have a term of one year, one a term of two years, and the other a term of three years.

"(d) The Committee shall meet at least quarterly at the call of the Chairman or whenever one-third of the members so request in writing. A majority of the members of the Committee not having a conflict of interest in the matter being considered by the Committee shall constitute a quorum. Each member shall be given appropriate notice, whenever possible, not less than 15 days prior to any meeting, of the call of such meeting.

"(e) The Committee shall have an executive committee, and may delegate to it or to the Secretary such of the powers and functions granted to the Committee by this Act as it deems appropriate. The Committee is authorized to appoint from among its members such other committees as it deems necessary, and to assign to committees so appointed such survey and advisory functions as the Committee deems appropriate to assist it in exercising its powers and functions under this Act.

"(f) The election of the Chairman and Vice Chairman of the Committee shall take place at each annual meeting occurring in an even-numbered year. The Vice Chairman shall perform the duties of the Chairman in his absence. In case a vacancy occurs in the chairmanship or vice chairmanship, the Committee shall elect a member to fill such vacancy.

"(g) The Committee may, with the concurrence of a majority of its members, permit the appointment of a staff consisting of not more than four professional staff members and such clerical staff members as may be necessary. Such staff shall be appointed by the Director, after consultation with the Chairman of the Committee, and assigned at the direction of the Committee. The professional members of such staff may be appointed without regard to the

Aug. 23

TRADE AND COMPETITIVENESS ACT

P.L. 100-418

Sec. 5131

provisions of title 5, United States Code, governing appointments in the competitive service and the provisions of chapter 51 of title 5 of such Code relating to classification, and compensated at a rate not exceeding the appropriate rate provided for individuals in grade GS-18 of the General Schedule under section 5332 of title 5 of such Code, as may be necessary to provide for the performance of such duties as may be prescribed by the Committee in connection with the exercise of its powers and functions under this Act.

"(h)(1) The Committee shall render an annual report to the Secretary for submission to the Congress on or before January 31 in each year. Such report shall deal essentially, though not necessarily exclusively, with policy issues or matters which affect the Institute, including the Program established under section 28, or with which the Committee in its official role as the private sector policy advisor of the Institute is concerned. Each such report shall identify areas of research and research techniques of the Institute of potential importance to the long-term competitiveness of United States industry, in which the Institute possesses special competence, which could be used to assist United States enterprises and United States industrial joint research and development ventures.

Reports.

"(2) The Committee shall render to the Secretary and the Congress such additional reports on specific policy matters as it deems appropriate."

Reports.

(c) NATIONAL ACADEMIES OF SCIENCES AND ENGINEERING STUDY OF GOVERNMENT-INDUSTRY COOPERATION IN CIVILIAN TECHNOLOGY.—(1) Within 90 days after the date of enactment of this Act, the Secretary of Commerce shall enter into contracts with the National Academies of Sciences and Engineering for a thorough review of the various types of arrangements under which the private sector in the United States and the Federal Government cooperate in civilian research and technology transfer, including activities to create or apply generic, nonproprietary technologies. The purpose of the review is to provide the Secretary and Congress with objective information regarding the uses, strengths, and limitations of the various types of cooperative technology arrangements that have been used in the United States. The review is to provide both an analysis of the ways in which these arrangements can help improve the technological performance and international competitiveness of United States industry, and also to provide the Academies' recommendations regarding ways to improve the effectiveness and efficiency of these types of cooperative arrangements. A special emphasis shall be placed on discussions of these subjects among industry leaders, labor leaders, and officials of the executive branch and Congress. The Secretary is authorized to seek and accept funding for this study from both Federal agencies and private industry.

Contracts.
15 USC 278n
note.

(2) The members of the review panel shall be drawn from among industry and labor leaders, entrepreneurs, former government officials with great experience in civilian research and technology, and scientific and technical experts, including experts with experience with Federal laboratories.

(3) The review shall analyze the strengths and weaknesses of different types of Federal-industry cooperative arrangements in civilian technology, including but not limited to—

(A) Federal programs which provide technical services and information to United States companies;

Reports.

(B) cooperation between Federal laboratories and United States companies, including activities under the Technology Share Program created by Executive Order 12591;

(C) Federal research and technology transfer arrangements with selected business sectors;

(D) Federal encouragement of, and assistance to, private joint research and development ventures; and

(E) such other mechanisms of Federal-industry cooperation as may be identified by the Secretary.

(4) A report based on the findings and recommendations of the review panel shall be submitted to the Secretary, the President, and Congress within 18 months after the Secretary signs the contracts with the National Academies of Sciences and Engineering.

Subpart D—Technology Reviews

SEC. 5141. REPORT OF PRESIDENT.

The President shall, at the time of submission of the budget request for fiscal year 1990 to Congress, also submit to the Congress a report on—

(1) the President's policies and budget proposals regarding Federal research in semiconductors and semiconductor manufacturing technology, including a discussion of the respective roles of the various Federal departments and agencies in such research;

(2) the President's policies and budget proposals regarding Federal research and acquisition policies for fiber optics and optical-electronic technologies generally;

(3) the President's policies and budget proposals, identified by agency, regarding superconducting materials, including descriptions of research priorities, the scientific and technical barriers to commercialization which such research is designed to overcome, steps taken to ensure coordination among Federal agencies conducting research on superconducting materials, and steps taken to consult with private United States industry and to ensure that no unnecessary duplication of research exists and that all important scientific and technical barriers to the commercialization of superconducting materials will be addressed; and

(4) the President's policies and budget proposals, identified by agency, regarding Federal research to assist United States industry to develop and apply advanced manufacturing technologies for the production of durable and nondurable goods.

SEC. 5142. SEMICONDUCTOR RESEARCH AND DEVELOPMENT.

(a) **SHORT TITLE.**—This section may be cited as the "National Advisory Committee on Semiconductor Research and Development Act of 1988".

(b) **FINDINGS AND PURPOSES.**—(1) The Congress finds and declares that—

(A) semiconductor technology is playing an ever-increasing role in United States industrial and commercial products and processes, making secure domestic sources of state-of-the-art semiconductors highly desirable;

(B) modern weapons systems are highly dependent on leading edge semiconductor devices, and it is counter to the national

National
Advisory
Committee on
Semiconductor
Research and
Development
Act of 1988.
15 USC 4632

security interest to be heavily dependent upon foreign sources for this technology;

(C) governmental responsibilities related to the semiconductor industry are divided among many Federal departments and agencies; and

(D) joint industry-government consideration of semiconductor industry problems is needed at this time.

(2) The purposes of this section are—

(A) to establish the National Advisory Committee on Semiconductors; and

(B) to assign to such Committee the responsibility for devising and promulgating a national semiconductor strategy, including research and development, the implementation of which will assure the continued leadership of the United States in semiconductor technology.

(c) **CREATION OF COMMITTEE.**—There is hereby created in the executive branch of the Government an independent advisory body to be known as the National Advisory Committee on Semiconductors (hereafter in this section referred to as the "Committee").

(d) **FUNCTIONS.**—(1) The Committee shall—

(A) collect and analyze information on the needs and capabilities of industry, the Federal Government, and the scientific and research communities related to semiconductor technology;

(B) identify the components of a successful national semiconductor strategy in accordance with subsection (b)(2)(B);

(C) analyze options, establish priorities, and recommend roles for participants in the national strategy;

(D) assess the roles for government and national laboratories and other laboratories supported largely for government purposes in contributing to the semiconductor technology base of the Nation, as well as to access the effective use of the resources of United States private industry, United States universities, and private-public research and development efforts; and

(E) provide results and recommendations to agencies of the Federal Government involved in legislative, policymaking, administrative, management, planning, and technology activities that affect or are part of a national semiconductor strategy, and to the industry and other nongovernmental groups or organizations affected by or contributing to that strategy.

(2) In fulfilling this responsibility, the Committee shall—

(A) monitor the competitiveness of the United States semiconductor technology base;

(B) determine technical areas where United States semiconductor technology is deficient relative to international competition;

(C) identify new or emerging semiconductor technologies that will impact the national defense or United States competitiveness or both;

(D) develop research and development strategies, tactics, and plans whose execution will assure United States semiconductor competitiveness; and

(E) recommend appropriate actions that support the national semiconductor strategy.

(e) **MEMBERSHIP AND PROCEDURES.**—(1)(A) The Committee shall be composed of 13 members, 7 of whom shall constitute a quorum.

(B) The Secretary of Defense, the Secretary of Commerce, the Secretary of Energy, the Director of the Office of Science and

President of U.S.

Technology Policy, and the Director of the National Science Foundation, or their designees, shall serve as members of the Committee.

(C) The President, acting through the Director of the Office of Science and Technology Policy, shall appoint, as additional members of the Committee, 4 members from outside the Federal Government who are eminent in the semiconductor industry, and 4 members from outside the Federal Government who are eminent in the fields of technology, defense, and economic development.

(D) One of the members appointed under subparagraph (C), as designated by the President at the time of appointment, shall be chairman of the Committee.

(2) Funding and administrative support for the Committee shall be provided to the Office of Science and Technology Policy through an arrangement with an appropriate agency or organization designated by the Committee, in accordance with a memorandum of understanding entered into between them.

(3) Members of the Committee, other than full-time employees of the Federal Government, while attending meetings of the Committee or otherwise performing duties at the request of the Chairman while away from their homes or regular places of business, shall be allowed travel expenses in accordance with subchapter I of chapter 57 of title 5, United States Code.

(4) The Chairman shall call the first meeting of the Committee not later than 90 days after the date of the enactment of this Act.

Reports.

(5) At the close of each fiscal year the Committee shall submit to the President and the Congress a report on its activities conducted during such year and its planned activities for the coming year, including specific findings and recommendations with respect to the national semiconductor strategy devised and promulgated under subsection (b)(2)(B). The first report shall include an analysis of those technical areas, including manufacturing, which are of importance to the United States semiconductor industry, and shall make specific recommendations regarding the appropriate Federal role in correcting any deficiencies identified by the analysis. Each report shall include an estimate of the length of time the Committee must continue before the achievement of its purposes and the issuance of its final report.

(f) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to carry out the purposes of this section such sums as may be necessary for the fiscal years 1988, 1989, and 1990.

30 USC 1803
note.

SEC. 5143. REVIEW OF RESEARCH AND DEVELOPMENT PRIORITIES IN SUPERCONDUCTORS.

President of U.S.

(a) NATIONAL COMMISSION ON SUPERCONDUCTIVITY.—The President shall appoint a National Commission on Superconductivity to review all major policy issues regarding United States applications of recent research advances in superconductors in order to assist the Congress in devising a national strategy, including research and development priorities, the development of which will assure United States leadership in the development and application of superconducting technologies.

(b) MEMBERSHIP.—The membership of the National Commission on Superconductivity shall include representatives of—

(1) the National Critical Materials Council, the National Academy of Sciences, the National Academy of Engineering, the National Science Foundation, the National Aeronautics and Space Administration, the Department of Energy, the Depart-

ment of Justice, the Department of Commerce (including the National Institute of Standards and Technology), the Department of Transportation, the Department of the Treasury, and the Department of Defense;

(2) organizations whose membership is comprised of physicists, engineers, chemical scientists, or material scientists; and

(3) industries, universities, and national laboratories engaged in superconductivity research.

(c) **CHAIRMAN.**—A representative of the private sector shall be designated as chairman of the Commission.

(d) **COORDINATION.**—The National Critical Materials Council shall be the coordinating body of the National Commission on Superconductivity and shall provide staff support for the Commission.

(e) **REPORT.**—Within 6 months after the date of the enactment of this Act, the National Commission on Superconductivity shall submit a report to the President and the Congress with recommendations regarding methods of enhancing the research, development, and implementation of improved superconductor technologies in all major applications.

(f) **SCOPE OF REVIEW.**—In preparing the report required by subsection (e), the Commission shall consider addressing, but need not limit, its review to—

(1) the state of United States competitiveness in the development of improved superconductors;

(2) methods to improve and coordinate the collection and dissemination of research data relating to superconductivity;

(3) methods to improve and coordinate funding of research and development of improved superconductors;

(4) methods to improve and coordinate the development of viable commercial and military applications of improved superconductors;

(5) foreign government activities designed to promote research, development, and commercial application of improved superconductors;

(6) the need to provide increased Federal funding of research and development of improved superconductors;

(7) the impact on the United States national security if the United States must rely on foreign producers of superconductors;

(8) the benefit, if any, of granting private companies partial exemptions from United States antitrust laws to allow them to coordinate research, development, and products containing improved superconductors;

(9) options for providing income tax incentives for encouraging research, development, and production in the United States of products containing improved superconductors; and

(10) methods to strengthen domestic patent and trademark laws to ensure that qualified superconductivity discoveries receive the fullest protection from infringement.

(g) **SUNSET.**—The Commission shall disband within a year of its establishment. Thereafter the National Critical Materials Council may review and update the report required by subsection (e) and make further recommendations as it deems appropriate.

Termination
date.

Subpart E—Authorization of Appropriations

SEC. 5151. AUTHORIZATION OF APPROPRIATIONS FOR TECHNOLOGY ACTIVITIES.

(a) **AUTHORIZATION OF APPROPRIATIONS.**—There are authorized to be appropriated for fiscal year 1988 to the Secretary of Commerce to carry out activities performed by the Institute the sums set forth in the following line items:

- (1) Measurement Research and Technology: \$41,939,000.
- (2) Engineering Measurements and Manufacturing: \$40,287,000.
- (3) Materials Science and Engineering: \$23,521,000.
- (4) Computer Science and Technology: \$7,941,000.
- (5) Research Support Activities: \$19,595,000.
- (6) Cold Neutron Source Facility: \$6,500,000 (for a total authorization of \$13,000,000).

(7) Programs established under sections 25, 26, and 27 of the Act of March 3, 1901 and section 5121 of this part: \$5,000,000.

(b) **LIMITATIONS.**—Notwithstanding any other provision of this or any other Act—

- (1) of the total of the amounts authorized under subsection (a), \$2,000,000 is authorized only for steel technology;
- (2) of the amount authorized under paragraph (1) of subsection (a) of this section, \$3,550,000 is authorized only for the purpose of research in process and quality control;
- (3) of the amount authorized under paragraph (2) of subsection (a) of this section, \$3,710,000 is authorized only for the Center for Building Technology, \$5,662,000 is authorized only for the Center for Fire Research, and the two Centers shall not be merged;
- (4) of the amount authorized under paragraph (3) of subsection (a) of this section, \$1,500,000 is authorized only for the purpose of research to improve high-performance composites; and
- (5) of the amount authorized under paragraph (5) of subsection (a) of this section, \$7,371,000 is authorized only for technical competence fund projects in new areas of high technical importance, and \$1,091,000 is authorized only for the Postdoctoral Research Associates Program and related new personnel.

(c) **TRANSFER.**—(1) Funds may be transferred among the line items listed in subsection (a) of this section so long as the net funds transferred to or from any line item do not exceed 10 percent of the amount authorized for that line item in such subsection and the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives are notified in advance of any such transfer.

(2) In addition, the Secretary of Commerce may propose transfers to or from any line item exceeding 10 percent of the amount authorized for the line item in subsection (a) of this section, but a full and complete explanation of any such proposed transfer and the reason for such transfer must be transmitted in writing to the President of the Senate, the Speaker of the House of Representatives, and the appropriate authorizing committees of the Senate and House of Representatives. The proposed transfer may be made only when 30 calendar days have passed after the transmission of such written explanation.

(d) **COLD NEUTRON SOURCE FACILITY.**—In addition to any sums otherwise authorized by this part, there are authorized to be appropriated to the Secretary of Commerce for fiscal years 1988, 1989, and 1990 such sums as were authorized but not appropriated for the Cold Neutron Source Facility for fiscal year 1987. Furthermore, the Secretary may accept contributions for funds, to remain available until expended, for the design, construction, and equipment of the Cold Neutron Source Facility, notwithstanding the limitations of section 14 of the Act of March 3, 1901 (15 U.S.C. 278d).

Gifts and
property.

(e) **EMPLOYEE BENEFIT ADJUSTMENTS.**—In addition to any sums otherwise authorized by this part, there are authorized to be appropriated to the Secretary of Commerce for fiscal year 1988 such additional sums as may be necessary to make any adjustments in salary, pay, retirement, and other employee benefits which may be provided for by law.

(f) **AVAILABILITY.**—Appropriations made under the authority provided in this section shall remain available for obligation, for expenditure, or for obligations and expenditure for periods specified in the Acts making such appropriations.

SEC. 5152. STEVENSON-WYDLER ACT AUTHORIZATIONS.

15 USC 3713.

Section 19 (a) and (b) of the Stevenson-Wydler Technology Innovation Act of 1980, as so redesignated by section 5122(a)(1) of this part, is amended to read as follows:

"(a)(1) There is authorized to be appropriated to the Secretary for the purposes of carrying out sections 5, 11(g), and 16 of this Act not to exceed \$3,400,000 for the fiscal year ending September 30, 1988.

"(2) Of the amount authorized under paragraph (1) of this subsection, \$2,400,000 is authorized only for the Office of Productivity, Technology, and Innovation; \$500,000 is authorized only for the purpose of carrying out the requirements of the Japanese technical literature program established under section 5(d) of this Act; and \$500,000 is authorized only for the patent licensing activities of the National Technical Information Service.

"(b) In addition to the authorization of appropriations provided under subsection (a) of this section, there is authorized to be appropriated to the Secretary for the purposes of carrying out section 6 of this Act not to exceed \$500,000 for the fiscal year ending September 30, 1988, \$1,000,000 for the fiscal year ending September 30, 1989, and \$1,500,000 for the fiscal year ending September 30, 1990."

Subpart F—Miscellaneous Technology and Commerce Provisions

SEC. 5161. SAVINGS PROVISION AND USER FEES.

The Act of March 3, 1901 (15 U.S.C. 271 et seq.), as amended by this part, is further amended by adding after section 28 the following new sections:

"SAVINGS PROVISION

"Sec. 29. All rules and regulations, determinations, standards, contracts, certifications, authorizations, delegations, results and findings of investigations, or other actions duly issued, made, or taken by or pursuant to this Act, or under the authority of any other statutes which resulted in the assignment of functions or activities to the Secretary, the Department, the Director, or the Institute, as

Contracts
15 USC 271 note

are in effect immediately before the date of enactment of this section, and not suspended by the Secretary, the Director, the Institute or the courts, shall continue in full force and effect after the date of enactment of this section until modified or rescinded.

"USER FEES

15 USC 278o.

"SEC. 30. The Institute shall not implement a policy of charging fees with respect to the use of Institute research facilities by research associates in the absence of express statutory authority to charge such fees."

SEC. 5162. MISCELLANEOUS AMENDMENTS TO THE STEVENSON-WYDLER ACT.

(a) **INVENTION MANAGEMENT SERVICES.**—The first sentence of section 14(a)(4) of the Stevenson-Wydler Technology Innovation Act of 1980, as so redesignated by section 5122(a)(1) of this part (15 U.S.C. 3710c) is amended by striking out "shall" and inserting in lieu thereof "may", and by striking out "such invention performed at the request of the other agency or laboratory" and inserting in lieu thereof "any invention of the other agency".

(b) **FEDERAL LABORATORY CONSORTIUM.**—Section 11(e)(7)(A) of the Stevenson-Wydler Technology Innovation Act of 1980, as so redesignated by section 5122(a)(1) of this part (15 U.S.C. 3710) is amended by striking out "0.005 percent of that portion of the research and development budget of each Federal agency that is to be utilized by" and inserting in lieu thereof "0.008 percent of the budget of each Federal agency from any Federal source, including related overhead, that is to be utilized by or on behalf of".

SEC. 5163. MISCELLANEOUS TECHNOLOGY AND COMMERCE PROVISIONS.

15 USC 282a.

(a) **ASSESSMENT OF EMERGING TECHNOLOGIES.**—The Board of Assessment of the National Institute of Standards and Technology shall include, as part of its annual review, an assessment of emerging technologies which are expected to require research in metrology to keep the Institute abreast of its mission, including process and quality control, engineering databases, advanced materials, electronics and fiber optics, bioprocess engineering, and advanced computing concepts. Such review shall include estimates of the cost of the required effort, required staffing levels, appropriate interaction with industry, including technology transfer, and the period over which the research will be required.

15 USC 272 note.

(b) **SMALL BUSINESS PLAN.**—The Director of the National Institute of Standards and Technology shall prepare a plan detailing the manner in which the Institute will make small businesses more aware of the Institute's activities and research, and the manner in which the Institute will seek to increase the application by small businesses of the Institute's research, particularly in manufacturing. The plan shall be submitted to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives not later than 120 days after the date of the enactment of this Act.

15 USC 3710.

(c) **NATIONAL TECHNICAL INFORMATION SERVICE.**—(1) Section 11 of the Stevenson-Wydler Technology Innovation Act of 1980, as so redesignated by section 5122(a)(1) of this part, is amended by inserting at the end the following new subsection:

"(h) None of the activities or functions of the National Technical Information Service which are not performed by contractors as of September 30, 1987, shall be contracted out or otherwise transferred from the Federal Government unless such transfer is expressly authorized by statute, or unless the value of all work performed under the contract and related contracts in each fiscal year does not exceed \$250,000."

Contracts.

(2) The Secretary of Commerce shall report the Secretary's recommendations for improvements in the National Technical Information Service (including methods for automating document distribution and inventory control), and any statutory changes required to make such improvements, to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives by January 31, 1989.

Reports.

(3) Section 11(d) of the Stevenson-Wydler Technology Innovation Act of 1980, as so redesignated by section 5122(a)(1) of this part, is amended—

15 USC 3710.

(A) by striking "and" at the end of paragraph (4);

(B) by striking the period at the end of paragraph (5) and inserting in lieu thereof "; and"; and

(C) by adding at the end thereof the following new paragraph:

"(6) maintain a permanent archival repository and clearinghouse for the collection and dissemination of nonclassified scientific, technical, and engineering information."

(d) **FELLOWSHIP PROGRAM.**—There is established within the Department of Commerce a Commerce, Science, and Technology Fellowship Program with the stated purpose of providing a select group of employees of the executive branch of the Government with the opportunity of learning how the legislative branch and other parts of the executive branch function through work experiences of up to one year. The Secretary of Commerce shall report to the Congress within six months after the date of enactment of this Act on the Department of Commerce's plans for implementing such Program by March 31, 1989.

15 USC 1533.

Reports.

SEC. 5164. METRIC USAGE.

(a) **FINDINGS.**—Section 2 of the Metric Conversion Act of 1975 is amended by adding at the end thereof the following new paragraphs:

15 USC 205o.

"(3) World trade is increasingly geared towards the metric system of measurement.

"(4) Industry in the United States is often at a competitive disadvantage when dealing in international markets because of its nonstandard measurement system, and is sometimes excluded when it is unable to deliver goods which are measured in metric terms.

"(5) The inherent simplicity of the metric system of measurement and standardization of weights and measures has led to major cost savings in certain industries which have converted to that system.

"(6) The Federal Government has a responsibility to develop procedures and techniques to assist industry, especially small business, as it voluntarily converts to the metric system of measurement.

"(7) The metric system of measurement can provide substantial advantages to the Federal Government in its own operations."

15 USC 205b.

(b) **POLICY.**—Section 3 of the Metric Conversion Act of 1975 is amended to read as follows:

"Sec. 3. It is therefore the declared policy of the United States—

"(1) to designate the metric system of measurement as the preferred system of weights and measures for United States trade and commerce;

"(2) to require that each Federal agency, by a date certain and to the extent economically feasible by the end of the fiscal year 1992, use the metric system of measurement in its procurements, grants, and other business-related activities, except to the extent that such use is impractical or is likely to cause significant inefficiencies or loss of markets to United States firms, such as when foreign competitors are producing competing products in non-metric units;

"(3) to seek out ways to increase understanding of the metric system of measurement through educational information and guidance and in Government publications; and

"(4) to permit the continued use of traditional systems of weights and measures in nonbusiness activities."

15 USC 205k

(c) **IMPLEMENTATION.**—The Metric Conversion Act of 1975 is further amended by redesignating section 12 as section 13, and by inserting after section 11 the following new section:

Reports.
15 USC 205j-1.

"Sec. 12. (a) As soon as possible after the date of the enactment of this section, each agency of the Federal Government shall establish guidelines to carry out the policy set forth in section 3 (with particular emphasis upon the policy set forth in paragraph (2) of that section), and as part of its annual budget submission for each fiscal year beginning after such date shall report to the Congress on the actions which it has taken during the previous fiscal year, as well as the actions which it plans for the fiscal year involved, to implement fully the metric system of measurement in accordance with that policy. Such reporting shall cease for an agency in the fiscal year after it has fully implemented its efforts under section 3(2). As used in this section, the term 'agency of the Federal Government' means an Executive agency or military department as those terms as defined in chapter 1 of title 5, United States Code.

"(b) At the end of the fiscal year 1992, the Comptroller General shall review the implementation of this Act, and upon completion of such review shall report his findings to the Congress along with any legislative recommendations he may have."

NATIONAL DEFENSE AUTHORIZATION ACT FOR
FISCAL YEARS 1990 AND 1991

For Legislative History of Act, see p. 838.

An Act to authorize appropriations for fiscal years 1990 and 1991 for military activities of the Department of Defense, for military construction, and for defense activities of the Department of Energy, to prescribe personnel strengths for such fiscal years for the Armed Forces, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

National
Defense
Authorization
Act for Fiscal
Years 1990
and 1991.
Arms and
munitions.
Uniformed
services.
Contracts.

SECTION 1. SHORT TITLE

This Act may be cited as the "National Defense Authorization Act for Fiscal Years 1990 and 1991".

SEC. 2. ORGANIZATION OF ACT INTO DIVISIONS; TABLE OF CONTENTS

(a) ORGANIZATION OF ACT INTO DIVISIONS.—This Act is organized into three divisions as follows:

- (1) Division A—Department of Defense Authorizations.
- (2) Division B—Military Construction Authorizations.
- (3) Division C—Department of Energy National Security Authorizations and Other Authorizations.

DIVISION C—DEPARTMENT OF ENERGY NATIONAL SECURITY
AUTHORIZATIONS AND OTHER AUTHORIZATIONS

TITLE XXXI—DEPARTMENT OF ENERGY NATIONAL SECURITY PROGRAMS

PART A—NATIONAL SECURITY PROGRAMS AUTHORIZATIONS

- Sec. 3101. Operating expenses.
- Sec. 3102. Plant and capital equipment.
- Sec. 3103. Funding limitations.

PART B—RECURRING GENERAL PROVISIONS

- Sec. 3121. Reprogramming.
- Sec. 3122. Limits on general plant projects.
- Sec. 3123. Limits on construction projects.
- Sec. 3124. Fund transfer authority.
- Sec. 3125. Authority for construction design.
- Sec. 3126. Authority for emergency construction design.
- Sec. 3127. Funds available for all national security programs of the Department of Energy.
- Sec. 3128. Availability of funds.

PART C—TECHNOLOGY TRANSFER

- Sec. 3131. Short title.
- Sec. 3132. Findings and purposes.
- Sec. 3133. Authority to enter into cooperative research and development agreements.

103 STAT. 1363

P.L. 101-189

LAWS OF 101st CONG.—1st SESS.

Nov. 29

Sec. 2

PART D—ENVIRONMENT, SAFETY, AND MANAGEMENT

- Sec. 3141. Defense waste cleanup technology program.
- Sec. 3142. Executive management training in the Department of Energy.
- Sec. 3143. Major Department of Energy national security programs.
- Sec. 3144. Five-year budget plan requirement.

PART E—MISCELLANEOUS PROVISIONS

- Sec. 3151. Prohibition and report on bonuses to contractors operating defense nuclear facilities.
- Sec. 3152. Preference for Rocky Flats workers.
- Sec. 3153. Authorization and funding for Rocky Flats agreement.
- Sec. 3154. Moratorium on incineration of radioactive waste at Los Alamos National Laboratory.
- Sec. 3155. Production of the 155-millimeter artillery-fired, atomic projectile.
- Sec. 3156. Reports in connection with permanent closures of Department of Energy defense nuclear facilities.
- Sec. 3157. Defense program missions.

National
Competitiveness
Technology
Transfer
Act of 1989.
15 USC 3701
note.
15 USC 3701
note.

PART C—TECHNOLOGY TRANSFER

SEC. 3131. SHORT TITLE

This part may be cited as the "National Competitiveness Technology Transfer Act of 1989".

SEC. 3132. FINDINGS AND PURPOSES

(a) FINDINGS.—Congress finds that—

(1) technology advancement is a key component in the growth of the United States industrial economy, and a strong industrial base is an essential element of the security of this country;

(2) there is a need to enhance United States competitiveness in both domestic and international markets;

(3) innovation and the rapid application of commercially valuable technology are assuming a more significant role in near-term marketplace success;

(4) the Federal laboratories and other facilities have outstanding capabilities in a variety of advanced technologies and skilled scientists, engineers, and technicians who could contribute substantially to the posture of United States industry in international competition;

(5) improved opportunities for cooperative research and development agreements between contractor-managers of certain Federal laboratories and the private sector in the United States,

consistent with the program missions at those facilities, particularly the national security functions involved in atomic energy defense activities, would contribute to our national well-being; and

(6) more effective cooperation between those laboratories and the private sector in the United States is required to provide speed and certainty in the technology transfer process.

(b) **PURPOSES.**—The purposes of this part are to—

(1) enhance United States national security by promoting technology transfer between Government-owned, contractor-operated laboratories and the private sector in the United States; and

(2) enhance collaboration between universities, the private sector, and Government-owned, contractor-operated laboratories in order to foster the development of technologies in areas of significant economic potential.

SEC. 3133. AUTHORITY TO ENTER INTO COOPERATIVE RESEARCH AND DEVELOPMENT AGREEMENTS

(a) **TECHNOLOGY TRANSFER ACTIVITIES.**—Section 12 of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3710a) is amended—

(1) in subsection (a)—

(A) by inserting “, and, to the extent provided in an agency-approved joint work statement, the director of any of its Government-owned, contractor-operated laboratories” after “Government-operated Federal laboratories”;

(B) by striking “for Government-owned” and inserting in lieu thereof “(in the case of a Government-owned, contractor-operated laboratory, subject to subsection (c) of this section) for” in paragraph (2); and

(C) by striking “of Federal employees” in paragraph (2);

(2) in subsection (b)—

(A) by inserting “, and, to the extent provided in an agency-approved joint work statement, a Government-owned, contractor-operated laboratory,” after “Government-operated Federal laboratory”;

(B) by striking “a Federal” in paragraph (2) and inserting in lieu thereof “a laboratory”; and

(C) by inserting after paragraph (5) the following:

“A Government-owned, contractor-operated laboratory that enters into a cooperative research and development agreement under subsection (a)(1) may use or obligate royalties or other income accruing to such laboratory under such agreement with respect to any invention only (i) for payments to inventors; (ii) for the purposes described in section 14(a)(1)(B) (i), (ii), and (iv); and (iii) for scientific research and development consistent with the research and development mission and objectives of the laboratory.”;

(3) in subsection (c)(3)(A), by striking “employee standards of conduct” and inserting in lieu thereof “standards of conduct for its employees”;

(4) in subsection (c)(5)(A), by inserting “presented by the director of a Government-operated laboratory” after “any such agreement”;

(5) in subsection (c)(5)(B), by inserting “by the director of a Government-operated laboratory” after “an agreement presented”;

(6) in subsection (c)(5), by adding at the end the following new subparagraph:

"(CXi) Any agency which has contracted with a non-Federal entity to operate a laboratory shall review and approve, request specific modifications to, or disapprove a joint work statement that is submitted by the director of such laboratory within 90 days after such submission. In any case where an agency has requested specific modifications to a joint work statement, the agency shall approve or disapprove any resubmission of such joint work statement within 30 days after such resubmission, or 90 days after the original submission, whichever occurs later. No agreement may be entered into by a Government-owned, contractor-operated laboratory under this section before both approval of the agreement under clause (iv) and approval under this clause of a joint work statement.

"(ii) In any case in which an agency which has contracted with a non-Federal entity to operate a laboratory disapproves or requests the modification of a joint work statement submitted under this section, the agency shall promptly transmit a written explanation of such disapproval or modification to the director of the laboratory concerned.

"(iii) Any agency which has contracted with a non-Federal entity to operate a laboratory or laboratories shall develop and provide to such laboratory or laboratories one or more model cooperative research and development agreements, for the purposes of standardizing practices and procedures, resolving common legal issues, and enabling review of cooperative research and development agreements to be carried out in a routine and prompt manner.

"(iv) An agency which has contracted with a non-Federal entity to operate a laboratory shall review each agreement under this section. Within 30 days after the presentation, by the director of the laboratory, of such agreement, the agency shall, on the basis of such review, approve or request specific modification to such agreement. Such agreement shall not take effect before approval under this clause.

Reports

"(v) If an agency fails to complete a review under clause (iv) within the 30-day period specified therein, the agency shall submit to the Congress, within 10 days after the end of that 30-day period, a report on the reasons for such failure. The agency shall, at the end of each successive 30-day period thereafter during which such failure continues, submit to the Congress another report on the reasons for the continuing failure. Nothing in this clause relieves the agency of the requirement to complete a review under clause (iv).

"(vi) In any case in which an agency which has contracted with a non-Federal entity to operate a laboratory requests the modification of an agreement presented under this section, the agency shall promptly transmit a written explanation of such modification to the director of the laboratory concerned."

(7) in subsection (c), by adding at the end the following new paragraph:

Classified
information

"(7)(A) No trade secrets or commercial or financial information that is privileged or confidential, under the meaning of section 552(b)(4) of title 5, United States Code, which is obtained in the conduct of research or as a result of activities under this Act from a non-Federal party participating in a cooperative research and development agreement shall be disclosed.

"(B) The director, or in the case of a contractor-operated laboratory, the agency, for a period of up to 5 years after development of

15 USC 3710a
note.

(3) in subsection (a)(1)(B)(iv), by striking "Government-operated".

(d) **CONTRACT PROVISIONS.**—(1) Not later than 150 days after the date of enactment of this Act, each agency which has contracted with a non-Federal entity to operate a Government-owned laboratory shall propose for inclusion in that laboratory's operating contract, to the extent not already included, appropriate contract provisions that—

(A) establish technology transfer, including cooperative research and development agreements, as a mission for the laboratory under section 11(a)(1) of the Stevenson-Wydler Technology Innovation Act of 1980;

(B) describe the respective obligations and responsibilities of the agency and the laboratory with respect to this part and section 12 of the Stevenson-Wydler Technology Innovation Act of 1980;

(C) require that, except as provided in paragraph (2), no employee of the laboratory shall have a substantial role (including an advisory role) in the preparation, negotiation, or approval of a cooperative research and development agreement if, to such employee's knowledge—

(i) such employee, or the spouse, child, parent, sibling, or partner of such employee, or an organization (other than the laboratory) in which such employee serves as an officer, director, trustee, partner, or employee—

(I) holds a financial interest in any entity, other than the laboratory, that has a substantial interest in the preparation, negotiation, or approval of the cooperative research and development agreement; or

(II) receives a gift or gratuity from any entity, other than the laboratory, that has a substantial interest in the preparation, negotiation, or approval of the cooperative research and development agreement; or

(ii) a financial interest in any entity, other than the laboratory, that has a substantial interest in the preparation, negotiation, or approval of the cooperative research and development agreement, is held by any person or organization with whom such employee is negotiating or has any arrangement concerning prospective employment;

(D) require that each employee of the laboratory who negotiates or approves a cooperative research and development agreement shall certify to the agency that the circumstances described in subparagraph (C)(i) and (ii) do not apply to such employee;

(E) require the laboratory to widely disseminate information on opportunities to participate with the laboratory in technology transfer, including cooperative research and development agreements; and

(F) provides for an accounting of all royalty or other income received under cooperative research and development agreements.

(2) The requirements described in paragraph (1)(C) and (D) shall not apply in a case where the negotiating or approving employee advises the agency that reviewed the applicable joint work statement under section 12(c)(5)(C)(i) of the Stevenson-Wydler Technology Innovation Act of 1980 in advance of the matter in which he is to participate and the nature of any financial interest described in

paragraph (1)(C), and where the agency employee determines that such financial interest is not so substantial as to be considered likely to affect the integrity of the laboratory employee's service in that matter.

(3) Not later than 180 days after the date of enactment of this Act, each agency which has contracted with a non-Federal entity to operate a Government-owned laboratory shall submit a report to the Congress which includes a copy of each contract provision amended pursuant to this subsection.

Reports.

(4) No Government-owned, contractor-operated laboratory may enter into a cooperative research and development agreement under section 12 of the Stevenson-Wydler Technology Innovation Act of 1980 unless—

(A) that laboratory's operating contract contains the provisions described in paragraph (1)(A) through (F); or

(B) such laboratory agrees in a separate writing to be bound by the provisions described in paragraph (1)(A) through (F).

(5) Any contract for a Government-owned, contractor-operated laboratory entered into after the expiration of 150 days after the date of enactment of this Act shall contain the provisions described in paragraph (1)(A) through (F).

(e) TECHNOLOGY TRANSFER FUNDING AND REPORT.—Section 11(b) of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3710(b)) is amended—

(1) by striking "after September 30, 1981,";

(2) by striking "not less than 0.5 percent of the agency's research and development budget" and inserting in lieu thereof "sufficient funding, either as a separate line item or from the agency's research and development budget,";

(3) by striking "The agency head may waive" and all that follows through "waives such requirement, the" and inserting in lieu thereof "The"; and

(4) by striking "reasons for the waiver and alternate plans for conducting the technology transfer function at the agency." and inserting in lieu thereof "agency's technology transfer program for the preceding year and the agency's plans for conducting its technology transfer function for the upcoming year, including plans for securing intellectual property rights in laboratory innovations with commercial promise and plans for managing such innovations so as to benefit the competitiveness of United States industry.".

SEC. 3157. DEFENSE PROGRAM MISSIONS

Section 91 a. of the Atomic Energy Act of 1954 (42 U.S.C. 2121(a)) is amended—

- (1) by striking out "and" at the end of clause (1);
- (2) by striking out the period at the end of clause (2) and inserting in lieu thereof a semicolon; and
- (3) by adding at the end the following new clauses:
 - "(3) provide for safe storage, processing, transportation, and disposal of hazardous waste (including radioactive waste) resulting from nuclear materials production, weapons production and surveillance programs, and naval nuclear propulsion programs;
 - "(4) carry out research on and development of technologies needed for the effective negotiation and verification of international agreements on control of special nuclear materials and nuclear weapons; and
 - "(5) under applicable law (other than this paragraph) and consistent with other missions of the Department of Energy, make transfers of federally owned or originated technology to State and local governments, private industry, and universities or other nonprofit organizations so that the prospects for commercialization of such technology are enhanced."

**CHAPTER 23—DEVELOPMENT AND CONTROL
OF ATOMIC ENERGY**

SUBCHAPTER I—GENERAL PROVISIONS

**SUBCHAPTER VIII—MILITARY APPLICATION
OF ATOMIC ENERGY**

2121. Authority of Commission.
- (a) Research and development; production of atomic weapons.
 - (b) Material for Department of Defense use.
 - (c) Sale, lease, or loan to other Nations of materials for military applications.
2122. Prohibitions governing atomic weapons.

**SUBCHAPTER VIII—MILITARY
APPLICATION OF ATOMIC ENERGY**

§ 2121. Authority of Commission

- (a) Research and development; production of atomic weapons

The Commission is authorized to—

(1) conduct experiments and do research and development work in the military application of atomic energy; and

(2) engage in the production of atomic weapons, or atomic weapon parts, except that such activities shall be carried on only to the extent that the express consent and direction of the President of the United States has been obtained, which consent and direction shall be obtained at least once each year.

CHAPTER 23—DEVELOPMENT AND CONTROL OF ATOMIC ENERGY

2182. Inventions conceived during Commission contracts; ownership; waiver; hearings.

SUBCHAPTER XII—PATENTS AND INVENTIONS

- § 2182. Inventions conceived during Commission contracts; ownership; waiver; hearings

Any invention or discovery, useful in the production or utilization of special nuclear material or atomic energy, made or conceived in the course of or under any contract, subcontract, or arrangement entered into with or for the benefit of the Commission, regardless of whether the contract, subcontract, or arrangement involved the expenditure of funds by the Commission, shall be vested in, and be the property of, the Commission, except that the Commission may waive its claim to any such invention or discovery under such circumstances as the Commission may deem appropriate, consistent with the policy of this section. No patent for any invention or discovery, useful in the production or utilization of special nuclear material or atomic energy, shall be issued unless the applicant files with the application, or within thirty days after request therefor by the Commissioner of Patents and Trademarks (unless the Commission advises the Commissioner of Patents and Trademarks that its rights have been determined and that accordingly no statement is necessary) a statement under oath setting forth the full facts surrounding the making or conception of the invention or discovery described in the application and whether the invention or discovery was made or conceived in the course of or under any contract, subcontract, or arrangement entered into with or for the benefit of the Commission, regardless of whether the contract, subcontract, or arrangement involved the expenditure of funds by the Commission. The Commissioner of Patents and Trademarks shall as soon as the application is otherwise in condition for allowance forward copies of the application and the statement to the Commission.

The Commissioner of Patents and Trademarks may proceed with the application and issue the patent to the applicant (if the invention or discovery is otherwise patentable) unless the Commission, within 90 days after receipt of copies of the application and statement, directs the Commissioner of Patents and Trademarks to issue the patent to the Commission (if the invention or discovery is otherwise patentable) to be held by the Commission as the agent of and on behalf of the United States.

If the Commission files such a direction with the Commissioner of Patents and Trademarks,

and if the applicant's statement claims, and the applicant still believes, that the invention or discovery was not made or conceived in the course of or under any contract, subcontract or arrangement entered into with or for the benefit of the Commission entitling the Commission to the title to the application or the patent the applicant may, within 30 days after notification of the filing of such a direction, request a hearing before the Board of Patent Appeals and Interferences. The Board shall have the power to hear and determine whether the Commission was entitled to the direction filed with the Commissioner of Patents and Trademarks. The Board shall follow the rules and procedures established for interference cases and an appeal may be taken by either the applicant or the Commission from the final order of the Board to the United States Court of Appeals for the Federal Circuit in accordance with the procedures governing the appeals from the Board of Patent Appeals and Interferences.

If the statement filed by the applicant should thereafter be found to contain false material statements any notification by the Commission that it has no objections to the issuance of a patent to the applicant shall not be deemed in any respect to constitute a waiver of the provisions of this section or of any applicable civil or criminal statute, and the Commission may have the title to the patent transferred to the Commission on the records of the Commissioner of Patents and Trademarks in accordance with the provisions of this section. A determination of rights by the Commission pursuant to a contractual provision or other arrangement prior to the request of the Commissioner of Patents and Trademarks for the statement, shall be final in the absence of false material statements or nondisclosure of material facts by the applicant.

(Aug. 1, 1946, ch. 724, § 152, as added Aug. 30, 1954, ch. 1073, § 1, 68 Stat. 944, and amended Sept. 6, 1961, Pub. L. 87-206, § 10, 75 Stat. 477; Aug. 29, 1962, Pub. L. 87-615, § 11, 76 Stat. 411; Jan. 2, 1975, Pub. L. 93-596, § 3, 88 Stat. 1949; Apr. 2, 1982, Pub. L. 97-164, title I, § 162(2), 96 Stat. 49; Nov. 8, 1984, Pub. L. 98-622, title II, § 205(b), 98 Stat. 3388.)

AMENDMENTS

1984—Pub. L. 98-622, in third par., substituted "the Board of Patent Appeals and Interferences" for "a Board of Patent Interferences" and "the Board of Patent Interferences".

1982—Pub. L. 97-164 substituted "United States Court of Appeals for the Federal Circuit" for "Court of Customs and Patent Appeals" in third par.

1962—Pub. L. 87-615 substituted "allowance" for "allowances" before "forward copies of the application" in first par.

1961—Pub. L. 87-206 clarified language concerning Commission's patent rights on inventions made or conceived under contract, subcontract, or arrangement with Commission, striking out language extending Commission's patent rights to other relationships and

activities in connection with Commission contracts, provided for waiver of patent rights consistent with the policy of this section and for finality of determinations of Commission, and dispensed with need for statement to Commissioner of Patents under certain circumstances.

CHANGE OF NAME

References to the Commissioner of Patents have been changed to the Commissioner of Patents and Trademarks pursuant to Pub. L. 93-596, § 3, Jan. 2, 1975, 88 Stat. 1949, set out as a note under section 1 of Title 35, Patents.

EFFECTIVE DATE OF 1984 AMENDMENT

Amendment by Pub. L. 98-622, effective three months after Nov. 8, 1984, see section 207 of Pub. L. 98-622 set out as a note under section 7 of Title 35, Patents.

EFFECTIVE DATE OF 1982 AMENDMENT

Amendment by Pub. L. 97-164 effective Oct. 1, 1982, see section 402 of Pub. L. 97-164, set out as a note

under section 171 of Title 28, Judiciary and Judicial Procedure.

TRANSFER OF FUNCTIONS

For transfer of certain functions from the Nuclear Regulatory Commission to the Chairman thereof, see Reorg. Plan No. 1 of 1980, 45 F.R. 40561, 94 Stat. 3585, set out as a note under section 5841 of this title.

The Atomic Energy Commission was abolished and all functions under this section were transferred to the Nuclear Regulatory Commission and the Administrator of the Energy Research and Development Administration by sections 5814 and 5841 of this title. The Energy Research and Development Administration was terminated and functions vested by law in the Administrator thereof were transferred to the Secretary of Energy (unless otherwise specifically provided) by sections 7151(a) and 7293 of this title.

SECTION REFERRED TO IN OTHER SECTIONS

This section is referred to in section 7261a of this title; title 35 section 210.

Patents and inventions.

- (a) Vesting of title to invention and issuance of patents to United States; prerequisites.
- (b) Contract as requiring report to Secretary of invention, etc., made in course of contract.
- (c) Waiver by Secretary of rights of United States; regulations prescribing procedures; record of waiver determinations; objectives.
- (d) Considerations applicable at time of contracting for waiver determination by Secretary.
- (e) Considerations applicable to identified invention for waiver determination by Secretary.
- (f) Rights subject to reservation where title to invention vested in United States.

(g)-(l) Repealed.

Sec.

- (j) Small business status of applicant for waiver or licenses.
- (k) Protection of invention, etc., rights by Secretary.
- (l) Department of Energy as defense agency of United States for purpose of maintaining secrecy of inventions.
- (m) Definitions.
- (n) Report concerning applicability of existing patent policies to energy programs; time for submission to President and appropriate Congressional committees.

§ 5908. Patents and inventions

- (a) Vesting of title to invention and issuance of patents to United States; prerequisites

Whenever any invention is made or conceived in the course of or under any contract of the Secretary, other than nuclear energy research, development, and demonstration pursuant to the Atomic Energy Act of 1954 (42 U.S.C. 2011 et seq.) and the Secretary determines that—

(1) the person who made the invention was employed or assigned to perform research, development, or demonstration work and the invention is related to the work he was employed or assigned to perform, or that it was within the scope of his employment duties, whether or not it was made during working hours, or with a contribution by the Government of the use of Government facilities, equipment, materials, allocated funds, information proprietary to the Government, or services of Government employees during working hours; or

(2) the person who made the invention was not employed or assigned to perform research, development, or demonstration work, but the invention is nevertheless related to the contract or to the work or duties he was employed or assigned to perform, and was made during working hours, or with a contribution from the Government of the sort referred to in clause (1).²

title to such invention shall vest in the United States, and if patents on such invention are issued they shall be issued to the United States, unless in particular circumstances the Secretary waives all or any part of the rights of the United States to such invention in conformity with the provisions of this section.

- (b) Contract as requiring report to Secretary of invention, etc., made in course of contract

Each contract entered into by the Secretary with any person shall contain effective provisions under which such person shall furnish promptly to the Secretary a written report containing full and complete technical information concerning any invention, discovery, improvement, or innovation which may be made in the course of or under such contract.

- (c) Waiver by Secretary of rights of United States; regulations prescribing procedures; record of waiver determinations; objectives

Under such regulations in conformity with the provisions of this section as the Secretary shall prescribe, the Secretary may waive all or any part of the rights of the United States under this section with respect to any invention or class of inventions made or which may be made by any person or class of persons in the course of or under any contract of the Secretary if he determines that the interests of the United States and the general public will be best served by such waiver. The Secretary shall maintain a publicly available, periodically updated record of waiver determinations. In making such determinations, the Secretary shall have the following objectives:

(1) Making the benefits of the energy research, development, and demonstration program widely available to the public in the shortest practicable time.

(2) Promoting the commercial utilization of such inventions.

(3) Encouraging participation by private persons in the Secretary's energy research, development, and demonstration program.

(4) Fostering competition and preventing undue market concentration or the creation or maintenance of other situations inconsistent with the antitrust laws.

- (d) Considerations applicable at time of contracting for waiver determination by Secretary

In determining whether a waiver to the contractor at the time of contracting will best serve the interests of the United States and the general public, the Secretary shall specifically include as considerations—

(1) the extent to which the participation of the contractor will expedite the attainment of the purposes of the program;

(2) the extent to which a waiver of all or any part of such rights in any or all fields of technology is needed to secure the participation of the particular contractor;

(3) the extent to which the contractor's commercial position may expedite utilization of the research, development, and demonstration program results;

² So in original. Probably should be a comma.

(4) the extent to which the Government has contributed to the field of technology to be funded under the contract;

(5) the purpose and nature of the contract, including the intended use of the results developed thereunder;

(6) the extent to which the contractor has made or will make substantial investment of financial resources or technology developed at the contractor's private expense which will directly benefit the work to be performed under the contract;

(7) the extent to which the field of technology to be funded under the contract has been developed at the contractor's private expense;

(8) the extent to which the Government intends to further develop to the point of commercial utilization the results of the contract effort;

(9) the extent to which the contract objectives are concerned with the public health, public safety, or public welfare;

(10) the likely effect of the waiver on competition and market concentration; and

(11) in the case of a nonprofit educational institution, the extent to which such institution has a technology transfer capability and program, approved by the Secretary as being consistent with the applicable policies of this section.

(e) Considerations applicable to identified invention for waiver determination by Secretary

In determining whether a waiver to the contractor or inventor or rights to an identified invention will best serve the interests of the United States and the general public, the Secretary shall specifically include as considerations paragraphs (4) through (11) of subsection (d) of this section as applied to the invention and—

(1) the extent to which such waiver is a reasonable and necessary incentive to call forth private risk capital for the development and commercialization of the invention; and

(2) the extent to which the plans, intentions, and ability of the contractor or inventor will obtain expeditious commercialization of such invention.

(f) Rights subject to reservation where title to invention vested in United States

Whenever title to an invention is vested in the United States, there may be reserved to the contractor or inventor—

(1) a revocable or irrevocable nonexclusive, paid-up license for the practice of the invention throughout the world; and

(2) the rights to such invention in any foreign country where the United States has elected not to secure patent rights and the contractor elects to do so, subject to the rights set forth in paragraphs (2), (3), (6), and

(7) of subsection (h) of this section: *Provided*, That when specifically requested by the Secretary and three years after issuance of such a patent, the contractor shall submit the report specified in subsection (h)(1) of this section.

(g) to (i) Repealed. Pub. L. 96-517, § 7(c), Dec. 12, 1980, 94 Stat. 3027

(j) Small business status of applicant for waiver or licenses

The Secretary shall, in granting waivers or licenses, consider the small business status of the applicant.

(k) Protection of invention, etc., rights by Secretary

The Secretary is authorized to take all suitable and necessary steps to protect any invention or discovery to which the United States holds title, and to require that contractors or persons who acquire rights to inventions under this section protect such inventions.

(l) Department of Energy as defense agency of United States for purpose of maintaining secrecy of inventions

The Department of Energy shall be considered a defense agency of the United States for the purpose of chapter 17 of title 35.

(m) Definitions

As used in this section—

(1) the term "person" means any individual, partnership, corporation, association, institution, or other entity;

(2) the term "contract" means any contract, grant, agreement, understanding, or other arrangement, which includes research, development, or demonstration work, and includes any assignment, substitution of parties, or subcontract executed or entered into thereunder;

(3) the term "made", when used in relation to any invention, means the conception or first actual reduction to practice of such invention;

(4) the term "invention" means inventions or discoveries, whether patented or unpatented; and

(5) the term "contractor" means any person having a contract with or on behalf of the Secretary.

(n) Report concerning applicability of existing patent policies to energy programs; time for submission to President and appropriate Congressional committees

Within twelve months after December 31, 1974, the Secretary with the participation of the Attorney General, the Secretary of Commerce, and other officials as the President may designate, shall submit to the President and the appropriate congressional committees a report concerning the applicability of existing patent policies affecting the programs under this chapter, along with his recommendations for amendments or additions to the statutory patent policy, including his recommendations on mandatory licensing, which he deems advisa-

ble for carrying out the purposes of this chapter.

(Pub. L. 93-577, § 9, Dec. 31, 1974, 88 Stat. 1887; Pub. L. 95-91, title III, § 301(a), title VII, §§ 703, 707, Aug. 4, 1977, 91 Stat. 577, 606, 607; Pub. L. 96-517, § 7(c), Dec. 12, 1980, 94 Stat. 3027.)

REFERENCES IN TEXT

The Atomic Energy Act of 1954, referred to in subsec. (a), is act Aug. 30, 1954, ch. 1073, 68 Stat. 921, as amended, which is classified generally to chapter 23 (§ 2011 et seq.) of this title. For complete classification of this Act to the Code, see Short Title note set out under section 2011 of this title and Tables.

The antitrust laws, referred to in subsec. (c)(4), probably mean the laws specified as antitrust laws in section 5909(b) of this title.

AMENDMENTS

1980—Subsec. (g). Pub. L. 96-517 struck out subsec. (g) which related to licenses for inventions, promulgation of regulations specifying terms and conditions, criteria and procedures for grant of exclusive or partially exclusive licenses, and record of determinations.

Subsec. (h). Pub. L. 96-517 struck out subsec. (h) which related to required terms and conditions in waiver of rights or grant of exclusive or partially exclusive license.

Subsec. (i). Pub. L. 96-517 struck out subsec. (i) which related to publication in the Federal Register

by the Administrator of waiver or license termination hearing requirements and availability of records.

EFFECTIVE DATE OF 1980 AMENDMENT

Amendment by Pub. L. 96-517 effective July 1, 1981, but implementing regulations authorized to be issued earlier, see section 8(f) of Pub. L. 96-517, set out as a note under section 41 of Title 35, Patents.

TRANSFER OF FUNCTIONS

"Secretary" and "Secretary's", meaning the Secretary of Energy, were substituted for "Administrator", "Administration", and "Administration's", meaning the Energy Research and Development Administration and the Administrator thereof, in subsecs. (a) to (e), (f)(2), (j), (k), (m)(5), and (n) and "Department of Energy" was substituted for "Administration" in subsec. (l) pursuant to sections 301(a), 703, and 707 of Pub. L. 95-91, which are classified to sections 7151(a), 7293, and 7297 of this title and which terminated the Energy Research and Development Administration and transferred its functions and the functions of the Administrator thereof (with certain exceptions) to the Secretary of Energy.

SECTION REFERRED TO IN OTHER SECTIONS

This section is referred to in sections 5585, 5906, 5907a, 5919, 6981, 7261a, 10308 of this title; title 7 section 178j; title 15 sections 2511, 2707, 5104; title 35 section 210.

U.S. Department of Energy
Washington, D.C.

Secretary of Energy
NOTICE

SEN-33-91

SUBJECT: DEPARTMENTAL MANAGEMENT OF SCIENCE AND TECHNOLOGY

DATE: 7-15-91

The purpose of this Notice is to establish the Science and Technology Advisor (STA) to the Secretary of Energy, with commensurate realignment of functions within the Department of Energy (DOE).

The DOE Organization Act, in Section 209, establishes the Director of Energy Research as the advisor to the Secretary on matters relating to the Department's research and development (R&D) programs, education and training activities, and management of its laboratories. When the DOE was activated, it was decided to join these statutory advisory functions to the programmatic management of a large R&D portfolio. Over the years, this latter programmatic responsibility began to eclipse the statutory responsibilities of the position.

I have determined that the function of a STA to the Secretary of Energy must be strengthened and reorganized both to comply with existing law and to:

- o Provide me with impartial technical advice on DOE R&D activities on an ongoing basis;
- o Provide a high-level focus of concern in DOE Headquarters for the overall vitality of the DOE National Laboratories, both as individual institutions and as a collective intellectual resource for the Nation; and
- o Provide overall departmental coordination of crosscutting science and technology issues such as technology transfer implementation, education, and small business innovation research, ensuring that departmental and national priorities are accurately reflected in the content and orientation of these programs.

This Notice describes the specific functions of the STA, as well as the functions of supporting organizations headed by Deputy Science and Technology Advisors (DSTAs) and a Director of Technology Utilization (DTU). Where appropriate, the interaction of the STA and these organizations with departmental functions and authorities exercised by other Secretarial Officers is described. This Notice applies to all of the scientific and technical activities and operations of the Department of Energy with the exception of the Naval Reactors program.

DISTRIBUTION:

ALL DEPARTMENTAL ELEMENTS

INITIATED BY:

OFFICE OF THE SECRETARY

RESPONSIBILITIES FOR SCIENTIFIC AND TECHNICAL ADVICE ON DOE RESEARCH AND DEVELOPMENT ACTIVITIES

Roles and Functions of the STA

The STA provides the Secretary, on request, with scientific and technical advice on DOE R&D projects, programs, plans, and policies. This may include advice on the following topics:

- o External scientific and technical developments relevant to the missions and activities of DOE;
- o Opportunities to exploit the application of DOE-developed science and technology within the DOE infrastructure;
- o Productive areas for cooperation among the science and technology programs funded by individual elements of the DOE;
- o The balance and effectiveness of DOE support and utilization of researchers in universities, industry, and the DOE laboratories; and
- o Ways to improve and maintain productive relationships among DOE laboratories, universities, and industry.

The STA may convene meetings of Program Secretarial Officers (PSOs) or their designees to discuss R&D issues that span individual elements of DOE.

The STA also assists the Chief Financial Officer and the Deputy Under Secretary for Policy, Planning, and Analysis (PE-1) in scientific and technical aspects of institutional processes for strategic plans, multi-year plans, and budget proposals. This may include assistance in formulating calls, technical review of inputs from PSOs, and assistance in identifying other Departmental options for consideration by the Secretary.

As appropriate, the STA provides individual PSOs, at their request, with independent assessments of specific projects, programs, and strategies.

As assigned, the STA represents the Secretary in interagency, inter-governmental, and significant public/private assessments of scientific and technical opportunities and priorities.

The STA may address other issues related to the science and technology programs of the Department, as directed by the Secretary.

The DSTAs assist the STA in the performance of these responsibilities, as required.

Relationship to Existing Roles and Functions within the Department

PSOs continue to have full line management responsibility to the Secretary for their respective R&D programs.

The oversight responsibilities of the Assistant Secretary for Environment, Safety, and Health and the Director, Office of Nuclear Safety, as described in SEN-6, remain unchanged.

The crosscutting responsibilities of the Director, Office of Environmental Restoration and Waste Management, described in the September 1989 "Memorandum of Agreement Among DOE Offices with Respect to Environmental Management of DOE Facilities," as amended, and SEN-6, remain unchanged.

The Office of Policy, Planning, and Analysis continues to be responsible for evaluating the relevance of DOE programs to overall DOE and Administration policies, including the National Energy Strategy. The Director, Office of Planning and Analysis, continues to exercise primary responsibility for the Department's Strategic Planning Initiative, as described in SEN-25.

RESPONSIBILITIES FOR INSTITUTIONAL MANAGEMENT OF THE DOE MULTIPROGRAM LABORATORIES

Roles and Functions of the Cognizant Secretarial Officer and Program Secretarial Officers

For purposes of this Notice, a multiprogram laboratory is a major departmental laboratory which conducts significant tasks for several PSOs. Each multiprogram laboratory has a Cognizant Secretarial Officer (CSO), who is responsible within DOE Headquarters for institutional management of the laboratory. This includes ensuring that each laboratory conforms to applicable operational, environmental, safety, health, and security standards established by law, regulation, or departmental policy.

The current CSO assignments for each multiprogram laboratory are as follows:

<u>Laboratory</u>	<u>CSO</u>
Lawrence Livermore National Laboratory	DP-1
Los Alamos National Laboratory	DP-1
Sandia National Laboratories	DP-1
Idaho National Engineering Laboratory	NE-1
Argonne National Laboratory	ER-1
Brookhaven National Laboratory	ER-1
Lawrence Berkeley Laboratory	ER-1
Oak Ridge National Laboratory	ER-1
Pacific Northwest Laboratory	ER-1

In particular, the Assistant Secretary for Defense Programs (DP-1) retains full responsibility for the coordination of all activities performed at the three laboratories for which DP-1 is the CSO, due to the special and unique national security missions of these laboratories and the responsibility of DP-1 to ensure that these laboratories retain the capability to carry out R&D, design, testing, production, and

storage of the Nation's nuclear weapons arsenal in accordance with Presidential directives.

The CSO, in coordination with the Office of the Chief Financial Officer and the Office of Administration and Human Resource Management, is responsible for overall approval of work for non-DOE sponsors at each assigned laboratory, with the exception of intelligence-related work. The Director, Office of Intelligence, continues to be solely responsible for approval and reviews of intelligence-related work for non-DOE sponsors.

The CSO and the STA participate in the annual appraisal of laboratory performance carried out by the Field Office Manager to whom each multiprogram laboratory respectively reports.

PSOs have line management responsibility (including planning, budgeting, and execution of program activities) and are fully accountable for their particular R&D programs at the multiprogram laboratories. The STA coordinates with PSOs and CSOs on laboratory policy development activities assigned to the STA and described below.

Roles and Functions of the STA

The mission of the STA in relation to the DOE laboratories is to assess the overall strength and vitality of the multiprogram laboratory system and to foster resolution of system-wide issues and concerns (such as the role of the laboratories and policies governing their use). The STA's specific responsibilities include the following:

- o Developing and coordinating departmental policy, and monitoring its implementation, in the following major areas: strategic and institutional planning for multiprogram laboratories, laboratory appraisals, work by the laboratories for non-DOE sponsors, laboratory-directed research and development (LDRD), technology transfer implementation, and education.
- o Advising the Secretary on system-wide laboratory issues, including those that may be identified by the annual Laboratory Institutional Planning Process (cf. DOE 5000.1A) or the Laboratory Appraisal Process (cf. DOE 5000.2A). In carrying out the responsibility to advise on system-wide issues, the STA may convene periodic meetings of Laboratory Directors or other groups to explore generic issues affecting the DOE laboratories.
- o Advising the Secretary on recommendations made by CSOs regarding the scientific and technical management of the laboratories, when it is essential to have a uniform management approach across the multiprogram laboratory system.
- o Advising the Secretary on recommendations made by CSOs concerning plans, management strategies, and allowable funding levels for LDRD.
- o Supporting the CSOs of individual multiprogram laboratories by coordinating the execution of the DOE Institutional Planning

Process for Multiprogram Laboratories. The coordination function, including the organization of on-site reviews, is assigned to the appropriate DSTAs as described below in this Notice.

- o Coordinating the integration of inputs from major non-DOE laboratory clients into DOE laboratory and programmatic planning processes.
- o Providing periodic, independent evaluations of the overall R&D performance of DOE multiprogram laboratories on measures of quality, relevance, and cost-effectiveness. The appropriate DSTAs will take the lead in organizing these evaluations. Evaluations will utilize, to the extent possible, inputs from PSOs of individual programs within the laboratory and reviews carried out by the laboratory or its Management and Operating Contractor. Evaluations will be carried out in close cooperation with the relevant CSO.
- o Maintaining, through the appropriate DSTAs, general technical awareness of the content, quality, and significance of laboratory work for non-DOE sponsors (with the exception of intelligence-related work) and advising the Secretary on the relevance of work for non-DOE sponsors to the overall technical strength and mission of each laboratory.
- o Maintaining awareness of landlord funding across the entire multiprogram laboratory complex and bringing disparities to the attention of Lead PSOs of the relevant DOE Field Offices, or to the attention of the Secretary, as necessary.

As requested by either the relevant PSO or the Secretary, the STA may also provide advice on, or assessments of, single-program DOE laboratories and facilities.

RESPONSIBILITIES FOR TECHNOLOGY TRANSFER AND UTILIZATION

Roles and Functions of the STA and the Director of Technology Utilization

The STA oversees the Director of Technology Utilization (DTU), a new centralized function. The specific responsibilities of the STA and DTU address Departmentwide issues in technology transfer implementation and utilization activities.

The DTU, with input from the DSTAs, is responsible for developing technology transfer and utilization policies that cut across program lines, definitive interpretation of these policies, and coordination of such policies with other agencies.

The DTU, in consultation with affected PSOs, facilitates internal coordination of DOE technology utilization efforts, organizes crosscutting analysis and advice on DOE technology transfer budgets, and is responsible for Departmentwide outreach efforts, including briefings, publications, and meetings.

The DTU, in consultation with affected PSOs, conducts independent assessments of the consistency, relevance, and appropriateness of laboratory cooperative research and development agreement (CRADA) guidelines and allowances on a cross-program as well as a cross-laboratory basis. The DTU also provides input to the STA and the DSTAs on aspects of laboratory management affecting technology utilization.

Because training is an important mechanism for developing a consistent approach to technology transfer implementation across the Department, the DTU, in conjunction with the Office of Scientific and Engineering Recruitment, Training, and Development and affected PSOs, shall develop the tools and training required for DOE technology commercialization activities. The DTU, in conjunction with the General Counsel, shall monitor the implementation of departmental policy on patents and licensing.

Roles and Functions of PSOs

PSOs continue to have primary responsibility for the execution of technology transfer and utilization activities in their programs. PSOs participate in departmental policy development, establish their own internal policies within existing departmental guidelines, provide Headquarters support and oversight of technology transfer efforts in their programs; prepare and manage their own plans, budget requests, and program activities for technology utilization activities; and conduct programmatic interactions with Federal agencies and other external organizations to disseminate information developed by DOE or its contractors.

The Office of the Chief Financial Officer continues to be responsible for issuing formal budget calls and crosscut calls related to technology transfer. These calls are issued in coordination with the DTU and PSOs.

For defense-related technologies, export control considerations and nonproliferation aspects of technology transfer to private industry continue to fall under the programmatic responsibility of DP-1. Classification policy related to technology transfer continues to fall under the programmatic responsibility of the Office of Security Affairs.

RESPONSIBILITIES FOR EDUCATION PROGRAMS

SEN-23-90 established an Office of University and Science Education Programs to coordinate the implementation of all DOE programs in science, mathematics, and engineering education at the precollege and university levels. This Office shall be transferred to the Office of the STA.

ORGANIZATIONAL ARRANGEMENTS

While the Director of Energy Research (ER-1) also functions as the STA, the Office of the STA, which shall support the functions of the STA outlined above, shall be distinct from the research programs of the

Office of Energy Research (ER) and shall have a reporting chain to the ER-1/STA that is separate from that of the ER research programs.

The Director of Technology Utilization is established in the Office of the STA and will take over functions supporting the implementation of the Department's technology transfer program currently residing in the Office of Policy, Planning, and Analysis.

A Deputy Science and Technology Advisor for Defense Programs (DSTA/Defense) is established in the Office of Defense Programs. The DSTA/Defense reports to DP-1 on DP-related issues and provides input to the STA on issues that cut across major programmatic lines within the Department. The DSTA/Defense has responsibility for cross-cutting assessments of weapons-related R&D programs and the DOE multiprogram laboratories for which DP-1 is the CSO. These activities include coordinating laboratory institutional planning and Laboratory Appraisals, and recommending on the general scope and level of laboratory activities. Within DP, the DSTA/Defense assumes a primary role in reviewing and approving overall LDRD and work for non-DOE sponsors at the laboratories assigned to DP for institutional management, managing DP programs in technology transfer and education, and serving as the principal DP liaison to outside scientific organizations.

Two Deputy Science and Technology Advisors are established in the Office of the STA for the nonweapons-related programs of the Department. The DSTA/Civilian R&D assists the STA with his responsibilities for scientific and technical advice on DOE R&D activities, as described in the above section on this topic. The DSTA/Civilian R&D oversees a staff that is expert in both the basic and the applied R&D programs of the Department and that maintains a current awareness of key issues facing these programs. The DSTA/Civilian Laboratories assists the STA with his responsibilities for the institutional oversight of the DOE multiprogram laboratories, as described in the above section on this topic.

Several existing elements of ER that carry out activities of a departmental scope, in addition to the Office of University and Science Education Programs, are transferred to the Office of the STA: the Office of Program Analysis, the Office of Field Operations Management, and the Science and Technology Affairs Staff.

Beyond these elements, budget authority and personnel will be allocated to the Office of the STA and the Office of Defense Programs to support the additional functions and responsibilities called for in this Notice.

IMPLEMENTATION

I consider the reorganization of assignments outlined above to be necessary if the Department of Energy is to respond to future challenges in science and technology. To implement these changes in detail, the STA, in coordination with appropriate departmental elements, shall recommend for my approval revisions to DOE Orders pertaining to laboratory institutional planning, laboratory appraisals, non-DOE funded

work, and LDRD. If needed, the STA shall lead the development of an additional DOE Order regarding laboratory management, with input and concurrence from other CSOs and PSOs.

The STA and DP-1 shall prepare a memorandum of agreement (MOA) concerning the reporting relationships and appraisal procedure for the DSTA/Defense. The STA and DP-1 shall also undertake a management review of the personnel and budgetary requirements of the enhanced responsibilities described above, and provide me with recommendations on the resources that will be needed to meet these requirements.

The STA and PE-1 shall prepare a MOA to coordinate their roles and responsibilities for science and technology policies and analyses.

The STA shall consult with PSOs with ongoing basic and applied R&D programs in the development of the organization headed by the DSTA/Civilian R&D.

James D. Watkins
Admiral, U.S. Navy (Retired)

END

**DATE
FILMED**

4 / 30 / 92