Norm Letter from Bill Holmes

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.

SEC. 2. FINDINGS.

15 USC 3701.

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

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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.

Report to President and Congress.

Tech. Trans Center

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.

Supporting agency licensing rights.

(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.

U.S. Courts of Claims, petition.

(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.

Antitrust laws.

(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.

15 USC 3706.

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-

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.

45 FR 69201.

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.

(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.

Waiver. Submittal to Congress.

(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 its amendments and concurred in Senate amendments.
WEEKLY COMPILATION OF PRESIDENTIAL DOCUMENTS, Vol. 16, No. 43:
Oct. 21, Presidential statement.

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96TH CONGRESS } HOUSE OF REPRESENTATIVES { REPORT
2d Session } { No. 96-1199

STEVENSON TECHNOLOGY INNOVATION ACT OF 1980

JULY 29, 1980.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

Mr. FUQUA, from the Committee on Science and Technology, submitted the following

REPORT

[To accompany S. 1250]

[Including the cost estimate of the Congressional Budget Office]

The Committee on Science and Technology, to which was referred the bill, S. 1250, to promote United States technological innovation for the achievement of national economic, environmental, and social goals, and for other purposes, having considered the same, reports favorably thereon with amendments and recommends that the bill do pass.

The full text of the amendments is shown in this report as part of the sectional analysis of the bill. A brief summary of the effect of the amendments is given in the first section of this report.

PURPOSE OF THE BILL

The purpose of the bill is 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.

The bill authorizes appropriations for fiscal years 1981 through 1985 in the amounts of 24, 49, 64, 74, and 74 million dollars, respectively.

CONTENTS

I. SUMMARY

A. Background

Technological innovation is the process by which industry generates and diffuses new and improved products and processes. It is a vital component of economic growth both in a domestic and an international context. The U.S. has traditionally been the leader in innovation. However, the extent of this lead may be diminishing in relation to past U.S. industrial performance and vis-a-vis foreign industrial performance.

In concern over the state of technological innovation, the House Committee on Science and Technology, and specifically its Subcommittee on Science, Research and Technology, has undertaken a program to address these issues. Various hearings, reports, and recommendations have culminated in the Committee's support of S. 1250, the Stevenson Technology Innovation Act of 1980, as amended.

S. 1250, as amended, provides for a multi-faceted approach to improving the environment in which industrial innovation occurs. The bill acts to strengthen the relationships between Government, industry, and academia such that each sector can contribute to the innovation process in a program of shared responsibilities. The resources available in the Federal laboratories are acknowledged and an effort to improve the utilization of this knowledge and expertise is prescribed. Several of President Carter's industrial innovation initiatives are given legislative mandates through this bill.

B. Rationale for the Bill

Overarching thrusts of the bill are (1) to build links between generators of knowledge (universities and Federal laboratories) and users of knowledge (industry and State and local governments); and (2) to build into the Federal Government a positive concern for the welfare of industry. It is the committee's judgment that these two matters have not heretofore received sufficient attention from the Federal Government, and the bill is intended to rectify the situation.

C. Brief Description of the Bill

1. Main thrusts

The bill, as amended, has five separate thrusts, as follows:

a. Centers for Industrial Technology (Sections 6 and 8)

The bill authorizes the Department of Commerce (DoC) and the National Science Foundation (NSF) to support Centers for Industrial Technology. The Centers would be similar to existing NSF centers that either focus on a specific technology area (e.g., polymer processing) or on training university students to be technological entrepreneurs. The bill leaves fairly broad latitude for center variety. The "generic technology" centers which have been planned by the Depart-

II. BACKGROUND

A. General

1. NEEDS FOR INNOVATION IN THE ECONOMY

Technological innovation is the process by which industry generates and diffuses new and improved products and processes. Various activities are components of this process including idea generation, research, development, and commercialization. Crucial to this is the diffusion of new technologies and production methods and their utilization; utilization is the basis for increased productivity. The results of research and development activity can only have an economic impact when they are integrated into products or processes available in the marketplace.

Technological innovation impacts both on domestic considerations and on the U.S. position in the international marketplace. There is general agreement on the vital role innovation plays in economic growth and that innovation contributes to increased productivity and efficiency.[1] As Dr. N. Bruce Hannay stated before hearings held by the House Science and Technology Committee, and the Senate Committees on Commerce, Science and Transportation, and Banking, Housing, and Urban Affairs:

> Innovation in new products and services is central to the process by which an economy grows and renews itself. . . . Innovation and productivity are closely linked because cost reductions and efficiency gains arise mainly through innovations in methods for production and distribution. . . . The health of our economy and all of the attendant consequences of increased employment and improved standard of living and progress in social areas unquestionably depend upon this innovation.[2]

The economic impacts of innovation are broad and generally interrelated. Demands for new products and processes developed through innovation create new jobs. Increased demand also encourages increased investment in R&D. The increased productivity engendered by innovation helps to ameliorate inflation in the long term.[3] Declining productivity leads to inflation when improved efficiency cannot compensate for higher cost and prices have to be raised.[4]

In an international context, the new U.S. products and processes that are the results of innovation may contribute to a more favorable

[1] U.S. Congress. House. Committee on Ways and Means. Subcommittee on Trade. Technology and Trade: Some Indicators of the State of U.S. Industrial Innovation. 96th Congress, 2d session. Washington, U.S. Government Printing Office, 1980, p. 24.
[2] Quoted in: Mogee, Mary. Industrial Innovation and its Relation to the U.S. Domestic Economy and International Trade Competitiveness. Library of Congress, Congressional Research Service, Rept. No. 78-204 SPR, October 1978, p. 19.
[3] U.S. Congress. Senate. Committee on Commerce, Science, and Transportation, National Strategy for Technological Innovation. Committee Print, 96th Congress, 1st session.
[4] Innovation, Has America Lost its Edge? Newsweek, vol. XCIII, June 4, 1979, p. 59.

balance of trade as demand is generated in the world marketplace. This demand in turn encourages job creation, new investments, and economic growth. However, increased innovation in foreign countries has led to increased competition with U.S. firms as new products are developed there which meet the needs of the U.S. public at lower costs than comparable U.S. products.[5]

Various factors are impacting negatively on the U.S. economy. Inflation is approximately 12 percent and unemployment is in the six to seven percent range. There is relatively little economic growth and productivity growth rates are declining. This situation has led to increasing concern over the rate of innovation in the United States. Much of the available information indicates that there are trends in a number of input and output indicators which show a declining U.S. innovation performance relative to past levels and to foreign competition.[6]

Although many of the data are indirect or partial indicators of innovation, due to the lack of direct measures, several trends have emerged. Since the 1960s, Federal expenditures for R&D—adjusted for inflation—have dropped by five percent.[7] The number of U.S. domestic-origin patents granted has declined in the late 1970s as has the ratio of national R&D expenditure to Gross National Product.[8] Yet it should be noted that private industrial support for R&D has increased.[9]

In an international context, while the United States still maintains a lead or is in the top three nations in terms of certain indicators, various foreign nations, notably Japan and West Germany, are making substantial gains on the U.S. position. The U.S. patent balance (the number of patents granted to U.S. nationals by foreign countries minus the number of patents granted to foreign nationals by the United States) is declining.[10] The productivity of many European countries and Japan is approaching that of the United States and these nations have surpassed the productivity growth rates of the United States.[11]

Gains on the U.S. international position also are being made in terms of the balance of trade in R&D-intensive products, national R&D as a fraction of the Gross National Product, and the number of R&D scientists as a percentage of the labor force.[12]

It is generally recognized that there is a need to improve the productive capacity of the nation's Federal laboratories by utilizing them more fully, not only as R. & D. centers for the Federal mission agencies, but also as national resources—resources that State and local governments, as well as the private sector, can turn to for sound scientific and technological know-how.

One very promising approach to increasing the effective utilization of the Federal laboratories is the establishment of active technology transfer programs throughout the Federal laboratory system. However, a strong, national policy concerning technology transfer in the

[5] Ibid., p. 59.
[6] Committee on Ways and Means, op. cit., p. 35.
[7] Newsweek, op. cit., p. 58.
[8] Committee on Ways and Means, op. cit., p. 9.
[9] Ibid., p. 10.
[10] Ibid., p. 21.
[11] Ibid., p. 24.
[12] Ibid., p. 34.

Federal government has not been developed. This lack of a national policy has prevented the institutionalization of the process and reduced the effectiveness of attempts, by many of the Federal laboratories, to provide technical assistance to help solve the problems of the public and the private sector.

2. SRT PROGRAM IN INNOVATION AND PRODUCTIVITY

The Subcommittee on Science, Research, and Technology has been active in legislative areas involving innovation and productivity throughout the 96th Congress. This interest has been manifest in a broad range of activities undertaken by the Subcommittee to study, delineate, and make recommendations concerning innovation. Mr. Brown, Chairman of the Subcommittee, introduced H.R. 4672 as a counterpart to S. 1250. This bill was the principal subject of hearings on university-industry relations held on July 31 and August 1 and 2, 1979. Mr. Brown also has introduced the National Technology Foundation Act on which the Subcommittee plans to hold hearings in the fall of 1980. In addition, the Science Research and Technology Subcommittee has participated in over two dozen hearings sessions on innovation-related topics during this Congress, including the October 31, 1979 hearings on the President's industrial innovation initiatives and hearings on the role of the Federal laboratories in domestic technology transfer held on June 12, 13, and 14, and July 10 and 12, 1979. Many of the subjects covered during these hearings have been included in the version of S. 1250 reported by the committee.

3. SRT HEARINGS PERTINENT TO THE BILL

As noted above, the Science, Research, and Technology Subcommittee held a series of hearings during the 96th Congress which addressed the issue of innovation and the United States economy. The major findings are summarized below.

a. Government and Innovation: University-Industry Relations (July 31; August 1 and 2, 1979)

These hearings on Government and innovation [13] were structured to examine the interaction between the academic community and the industrial sector to provide ideas for improving and facilitating this relationship as a means of increasing American innovation and productivity. The witnesses agreed that a definite innovation problem existed in the United States, especially in the context of the world marketplace, and that improved university-industry relations would enhance innovation. Various examples of successful university-industry interactions were offered to support this conclusion, including work in semiconductors, magnetism, lasers, synthetic fibers, and antibiotics. In the innovation process, universities generally provide the basic research component while the role of the industrial sector generally is in the development, commercialization, and marketing of new goods and services.

[13] Government and Innovation: University-Industry Relations, Hearings Record, Committee on Science and Technology, 96th Congress No. 53, 1979.

In this context, mutual interaction leading to successful innovation requires the transfer of information, expertise, and know-how between the two sectors. However, concern was expressed over the inadequacy of the technology transfer mechanisms between academia and the private sector. The Government was seen as one facilitator of this interaction, given the success of various prior and on-going programs such as the Agricultural Extension Service and the National Advisory Committee for Aeronautics. Specific suggestions—offered at the hearings—for Government activities to encourage university-industry relations included:

A change in fiscal policies to encourage industry to utilize university research;

An increase in Federal funding of basic research;

The provision of incentives for universities to develop and pursue relationships with industry (for example, a program of planning grants tied to that goal; matching grants); and

The provision of direct Federal support to universities to strengthen dissemination of research results.

b. The Role of the Federal Laboratories in Domestic Technology Transfer (June 12, 13, 14; July 10 and 12, 1979)

The Federal Government has an extensive system of Federal laboratories within which resides a wealth of scientific and technical knowledge and expertise. However, there is a general belief that the potential for using these resources has not been fully tapped. These hearings were held to identify the resources available in the Federal laboratories; to develop an understanding of what constraints there are to using these resources; and to determine how this knowledge and expertise can be utilized in other sectors, including industry and State and local governments.

The hearings [14] pointed to the lack of a national policy concerning technology transfer in the Federal Government. This has, in part, prevented the institutionalization of the transfer process and thus reduced the effectiveness of any attempt to provide technical assistance and apply technical expertise to the problems of the public and private sectors. The Federal laboratories were developed to assist in meeting the mission requirements of the parent agency. With a few exceptions such as NASA, the technology transfer activity is not an explicit part of the agency's mandate and is secondary to its primary responsibilities. Coupled with this situation are various statutory and budgetary restrictions which limit the interaction of Federal laboratories with private industry and State and local jurisdictions.

In general, the witnesses indicated that the provision of a mandate for the Federal laboratories to undertake technology transfer and technical assistance would be a major step in encouraging commercialization and utilization of the results of federally-funded research and development which would contribute to the growth of the Nation and to the solution of many national problems. Experience has shown that those programs which have been in operation to tap the resources of

[14] The Role of the Federal Laboratories in Domestic Technology Transfer, Hearings Record, Committee on Science and Technology, 96th Congress, No. 77, 1979.

the Federal establishment, including the Federal Laboratory Consortium for Technology Transfer, have been successful in extending the benefits of the Federal R&D endeavor beyond its original mission.

c. Joint Hearings on the President's Industrial Innovation Initiatives

Joint hearings on President Carter's industrial innovation initiatives were held on October 31, 1979 by the Senate Committee on Commerce, Science, and Transportation, the Senate Select Committee on Small Business, the House Committee on Science and Technology, and the House Committee on Small Business. The participants agreed that innovation can provide an important mechanism to meet many of the Nation's problems, including inflation, energy shortages, and declining productivity and economic growth. As former Secretary of Commerce Juanita Kreps testified, "innovation underlies our ability to promote the health, welfare, well-being, and prosperity of the American people." [15] However, it was noted that the innovation leadership of the United States can no longer be taken for granted, as various technological and economic indicators point to decreased levels of innovation and productivity.

The testimony indicated a widespread belief that it is now incumbent on the Government to assess policies which affect the innovation process and to develop new options for improving the environment in which innovation takes place. As a basis for taking such action, the President initiated the Domestic Policy Review (DPR) on industrial innovation which led to the recommendations described in his message of October 31, 1979. The DPR, according to Jordan Baruch, used as a major premise the idea that the Federal Government ". . . impacts on the private sector where industrial innovation takes place in two ways: it can make available by one route or another the resources that a firm needs so that it will be able to innovate and it can make available incentives so that a firm will decide to innovate." [16]

The President's proposals were generally received as a first step in addressing the innovation problem. However, various concerns were expressed over activities and issues which were perceived as having been omitted from the President's initiatives. Such issues included tax policy, small business set-asides, and the modestness of some of the proposals, such as activities proposed to promote commercialization of, and spin-off from, technological developments in the Federal establishment with potential for leading to new industrial processes and products.

4. EXECUTIVE BRANCH BACKGROUND PERTINENT TO S. 1250

a. National Science Foundation

In pursuit of increasing technological innovation and national productivity, the National Science Foundation (NSF) has developed and supported several programs in a multifaceted approach to the issue, portions of which are described here.

As part of an effort to stimulate university-industry interactions leading to innovation, the Foundation has created and financed both

[15] Industrial Innovation, Hearings Record, Committee on Science and Technology, 96th Congress. No. 69, 1979, p. 13.
[16] Ibid, p. 23.

generic technology centers and technology innovation centers as part of its university-industry center program. In the first case, the generic technology centers promote institutional arrangements between the two sectors in conducting research and innovation in cross-industry technologies which generally involve large businesses. In this activity, the universities are intended to provide the basic research to be used for industrial application and commercialization. These experimental centers include the Massachusetts Institute of Technology Polymer Processing Center, the North Carolina State University Furniture R&D Applications Institute, and the New England Energy Development Systems Center. The Foundation established this program with the intention of providing incentives to industry to support the centers and eventually make them self-sustaining.

The innovation centers are structured to address the processes of invention and entrepreneurship. The work done in these centers concentrates basically on the development of a business, rather than on the development of a technology for an existing industry as is done at the generic technology centers. The innovation centers, including those at the Massachusetts Institute of Technology, Carnegie Mellon University, and the University of Oregon, are concerned with research, education, demonstration, and operational analysis in the creation of a business and the development of an idea into a product.

The university-industry centers supported by NSF are:

University of Oregon*
Carnegie-Mellon University*
University of Utah*
Massachusetts Institute of Technology*
North Carolina State University
Mitre Corporation
Massachusetts Institute of Technology
Rensselaer Polytechnic Institute
University of Kansas
Kent State University
University of Texas (San Antonio)*
University of Arkansas
Georgia Institute of Technology
Phoenix International Corporation*
University of California (Santa Cruz)*
Ohio State University
University of Massachusetts.

The Foundation also directs a program of personnel exchange under its Science Faculty Professional Development Program. This activity makes awards to individual undergraduate science professors for study in industry, academia, non-profit organizations, or government for the purpose of improving science teaching. Of the 70 awards made in fiscal year 1980, 22 were for non-academic placements (industry, not-for-profits, and government).

Technology transfer is also supported to some extent through NSF's Intergovernmental Science and Public Technology Program (ISPT). The thrust of portions of this activity is to develop and fund mechan-

*Innovative Centers.

isms to help State and local governments apply technology to meet demands for goods and services. Through the application and utilization of technology, it is expected that innovation can foster increased productivity and effectiveness in the State and local sectors. Part of this program includes participation in, and support for, the Federal Laboratory Consortium for Technology Transfer. The consortium is a voluntary association of approximately 200 Federal laboratories which works to identify and delineate problems at the State and local level which are amenable to technical solutions and then provides assistance in addressing these problems. The program manager for the Consortium is located in the Intergovernmental Science and Public Technology Program.

Another effort under NSF's Intergovernmental program is the State Science Engineering, and Technology (SSET) program. Established under congressional direction, SSET is designed to assist the executive and legislative branches of State governments to get and use scientific, engineering, and technical resources in the formulation and management of public policy and in the resolution of policy issues with scientific or technical components.

The Committee notes that funding for these programs has decreased. The fiscal year 1980 budget of $5 million for the ISPT core program was reduced by internal budget cuts to $3.43 million; down from the fiscal year 1979 budget of $5 million. The SSET program in fiscal year 1980 was reduced from its original $3 million to $1.02 million. The fiscal year 1981 proposed funding is $4 million for the core program and $1.6 million for the State Science, Engineering, and Technology activity.

In addition to the NSF programs already described which are activities which would receive a firmer legislative basis from the bill, the Foundation operates a large program of Industry/University Cooperative Research, programs of policy research and analysis on the Socioeconomic Effects of Science and Technology and on Innovation Processes and Their Management, and a Small Business Innovation Research Program. The Committee commends the Foundation for its efforts in innovation and productivity through these other programs and urges their continued support by the Foundation, even though they are not among the subjects of this bill.

b. Department of Commerce

The Department of Commerce has lead agency responsibility for the executive branch initiatives to promote innovation. To administer activities to encourage and increase innovation and productivity, and to oversee implementation of the presidential industrial innovation program, the Office of Productivity, Technology and Innovation (OPTI) was created. This Office includes the National Technical Information Service and the Experimental Technology Incentives Program (which will become the Office of Strategy and Evaluation). Among the major initiatives OPTI will institute—in accordance with the President's innovation message—are Cooperative Generic Technology Centers and the Center for the Utilization of Federal Technology. Both efforts are in the planning stage and are budgeted to start operations in fiscal year 1981.

According to Secretary of Commerce Philip Klutznick, the Cooperative Generic Technology Centers are designed to "develop specific, strategic technologies that can have significant impact on the productivity and competitiveness of a wide range of individual firms and industries." Slated to be a joint Federal/university/industry effort, the centers will undertake research, problem analysis, and technical assistance, and will provide those support services which are necessary to foster the development, improvement, and transfer of generic technologies in selected areas. This activity is expected to allow for the sharing of costs, risks, and ideas in technological areas where it is inappropriate for the private sector to undertake research and development alone, but which are vital to increased innovation and productivity.

The Department of Commerce has issued a notice of proposed procedures for the Cooperative Generic Technology Centers program (Federal Register, v. 45, June 1, 1980). According to this plan, the centers will provide for in-house generic research and development, consulting and technical services, information system services, training, technical evaluation, and strategic planning. Proposals for the establishment of a center will be invited, reviewed, and selected according to compatibility with program goals and budget constraints. These non-profit centers will be located at universities or other private sector organizations. The Department has requested $5.2 million for this program in the fiscal year 1981 budget.

The Commerce Department also is planning for the establishment of a Center for the Utilization of Federal Technology (CUFT). To be located within the National Technical Information Service, this effort will concentrate on the active marketing of Federal technology to the private sector to assist in the commercialization and utilization of the results of federally-funded research and development work. According to Assistant Secretary of Commerce Baruch, in testimony before the House Committee on Science and Technology, Subcommittee on Space Science and Applications (June 11, 1980), CUFT's objectives are:

To stimulate industrial demand for Federal technologies;

To promote networks of interpersonal communication between Federal and industrial personnel through a fellowship program in which industrial personnel will track user needs for, and potential applications of, Federal technology;

To facilitate access to information about industrial needs and technological opportunities through use of computerized reviews of Federal projects; and

To support industrial efforts to adapt Federal work to industrial needs.

The operational planning now being done for CUFT is based upon an active outreach program to work with industry in identifying opportunities for new markets and for the development and commercialization of Federal technology to improve the Nation's competitive position in the international marketplace. The Center also will interface with the Federal laboratory system to promote technology transfer to industry. This effort is scheduled to include workshops, conferences, and seminars. It also is expected that a fellowship program will be instituted to foster cooperation and interaction between the private

sector and the Federal laboratories. The Department has requested $1.2 million for this activity in fiscal year 1981.

Other significant OPTI initiatives include the Productivity Reference Service, which is designed to coordinate and disseminate information, data, and case histories on productivity improvement, and the National Technical Information Service's Information for Innovators, a biweekly information service on current technological developments.

c. Selected Additional Technology Transfer Programs [16]

The Agricultural Extension Service.—The Agricultural Extension Service was created in 1914 to provide technical education and technology transfer to assist in increasing farmer productivity. Fiscal, administrative, and policy support is provided jointly by Federal, State, and local jurisdictions. The program is based upon technology development, demonstration, dissemination, and assistance to the agricultural community through the land grant colleges and an extensive field staff located in most counties. Agents serve as a link between research and the practitioners' needs for technology and information. The Extension Service staff generally works directly with farmers to identify and solve agricultural problems. Private enterprise also participates in application and commercialization of R&D for the farm industry.

The National Aeronautics and Space Administration's Technology Utilization Program.—The Technology Utilization Program at the National Aeronautics and Space Administration has been developed to accelerate and broaden the transfer of aerospace technology to the public and private sectors. Following the legislative mandate to ". . . provide for the widest practical and appropriate dissemination of information concerning its activities and the results thereof," NASA has established a number of mechanisms to accomplish this mission requirement. To promote technology transfer within the Nation's industrial complex, the agency operates a network of Industrial Applications Centers (IACs) which provide information retrieval services and technical assistance to industrial clients. Staffed by scientists, engineers, managers, and computer information specialists experienced in industry liaison, the IACs seek to increase and expedite technology transfer by assisting the private sector to find and apply information and/or technology and thus to avoid duplication of research and development already accomplished.

A related service to industry is provided by NASA's Computer Software Management and Information Center (COSMIC) at the University of Georgia. COSMIC collects, screens, and stores computer programs developed by NASA and other Government agencies. Adaptable to secondary use by industry, Government, or other organizations, these programs perform such tasks as structural analysis, electronic circuit design, chemical analysis, design of fluid systems, determination of building energy requirements, and a variety of other functions.

[16] For additional information on the various technology transfer programs of the Federal Government see: U.S. Congress. House. Committee on Science and Technology. Subcommittee on Science, Research, and Technology. Domestic technology transfer: issues and options. 95th Congress, 2d session. Serial CCC. Washington, U.S. Government Printing Office, 1978. 853 pp. at head of title: Committee Print.

NASA also operates a Remote Sensing Applications Program to assist State and local governments in utilizing satellite remote sensing technology as a source for their resource management and planning decisions.

Transfer of remote sensing technology is accomplished through:

Orientation programs to acquaint State and local decisionmakers with remote sensing capabilities, applications, and limitations;

Training programs which enable key State and local personnel to utilize remote sensing data;

Application demonstrations of proven technology to acquaint potential users with specific applications in operational environments; and

Technical assistance to help users establish independent self-sustaining capability to use remotely sensed data.

The program draws on all NASA field centers in the development of activities in the States and for support of specific projects.

NASA also works with the Federal Laboratory Consortium for Technology Transfer.

d. Domestic Policy Review on Industrial Innovation and Resulting Presidential Initiatives

In May 1978, President Carter initiated a Domestic Policy Review (DPR) on Industrial Innovation. Headed by the Secretary of Commerce, this activity was undertaken to identify and recommend Government actions to encourage increased industrial productivity and innovation. Representatives from industry, academia, Government, and the public participated in this study designed to illuminate policies affecting the innovation process and to enumerate positive steps to increase the innovative capabilities of U.S. industry. An interagency committee conducted the effort advised by several panels of industrial executives. Twenty-eight agencies and approximately 500 private sector representatives participated. A series of public hearings was held on economic, tax, and trade policy; environmental, health, and safety regulations; Federal procurement and research grant policy; patents; and antitrust policy. The principal documents resulting from the Domestic Policy Review were a series of subcommittee reports [17] and a paper sent to the President which has not been made available outside the executive branch.

On October 31, 1979 President Carter announced various initiatives to provide a positive environment for industrial innovation which were based on the Domestic Policy Review. These "President's Initiatives on Industrial Innovation" were presented to Congress on the same day.[18] Specific recommendations were made in nine areas:

Enhancing the Transfer of Information;
Increasing Technical Knowledge;
Strengthening the Patent System;
Clarifying Antitrust Policy;
Fostering the Development of Small Innovative Firms;

[17] United States Department of Commerce, Final Report of the Advisory Committee on Industrial Innovation, September 1979.

[18] Industrial Innovation, Hearings Record, op. cit.

Opening Federal Procurement to Innovations;
Improving Our Regulatory System;
Facilitating Labor/Management Adjustment to Technical Change; and
Maintaining a Supportive Climate for Innovation.

Several of the President's initiatives are strengthened by this bill. President Carter's program included the creation of the NTIS Center for the Utilization of Federal Technology, which is also addressed in S. 1250.

The Generic Technology Centers and the NSF industry-university program identified in the executive initiatives also are incorporated into S. 1250, as reported. The presidential directive to clarify antitrust impacts on innovation is paralled by the requirement in the Stevenson Technology Innovation Act for a judgment on antitrust violations prior to establishment of Innovation Centers. A legislative basis for the President's initiative to establish an award for technological innovation is provided by the bill.

Other of the initiatives include efforts to utilize foreign technology; regulatory technology development to assist industry in complying with environmental, health, and safety regulations; uniform patent policy and additional improvements in the patent system; support and extension of the NSF Small Business Innovation Research Program; Corporations for Innovation Development to assist in providing start-up capital; additional Federal policies and support for small R&D firms; efforts to increase the availability of venture capital; opening Federal procurement to innovations; improvements in the regulatory system; and activities to facilitate labor/management adjustment to technological change. The Committee has taken steps other than this bill to strengthen the President's initiatives in some of these other areas and is analyzing the entire range of initiatives.

B. Legislative History of S.1250

1. SENATE

On May 24, 1979 S. 1250 was introduced by Mr. Stevenson with Senators Cannon, Hollings, Inouye, W. H. Ford, Riegle, Moynihan, Schmitt, Bradley, Randolph, Heinz, and Magnuson as cosponsors. The bill was referred to the Senate Committee on Commerce, Science, and Transportation, Subcommittee on Science, Technology, and Space. Hearings were held by the Subcommittee on June 21, June 27, and November 21, 1979.

On April 29, 1980 a Commerce, Science, and Transportation Committee mark-up was held. The bill was ordered to be favorably reported, with amendments. The report (S. Rpt. 96–781) was filed on May 15, 1980.

The bill passed the Senate, as reported, on the Consent Calendar on May 28, 1980.

2. HOUSE

On June 28, 1979 H.R. 4672 was introduced as a companion bill to S. 1250 by Mr. Brown of California with Representatives Fuqua, Ertel, Watkins, Wydler, Hollenbeck, and Ritter as cosponsors. The bill was referred to the House Committee on Science and Technology, Subcommittee on Science, Research, and Technology. On July 31, August 1 and 2, 1979 hearings were held by the Subcommittee on Science, Research, and Technology on H.R. 4672, and university industry relations generally.

Following passage by the Senate, S. 1250 was referred to the House Committee on Science and Technology on May 30, 1980, and then to the Subcommittee on Science, Research, and Technology on June 4.

Based on its hearings on H.R. 4672, on hearings into the role of the Federal laboratories in domestic technology transfer, on hearings regarding the President's Industrial Innovation Initiatives, on other hearings regarding innovation and productivity, and on the GAO analysis of the House hearings on H.R. 4672 and the Senate hearings on S. 1250, the Subcommittee considered and marked up S. 1250 on June 17, 1980. The bill was ordered reported to the full Committee, as amended.

Full Committee consideration and mark-up of S. 1250 took place on July 2, 1980. The bill was ordered to be reported, as further amended.

M. Section 11—Utilization of Federal Technology

SEC. 11. UTILIZATION OF FEDERAL TECHNOLOGY.

(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 to transfer federally owned or originated technology to State and local governments and to the private sector.

The phrase "technology transfer," as used throughout this section, is intended to mean the transformation of R. & D. into processes, products, and services that can be applied to State and local government and private sector needs.

This definition is broad and the determination of which agency activities fall under the umbrella of "technology transfer" will admittedly, be subject to each agency's interpretation of the definition in view of its unique organizational characteristics and R. & D. activities. However, the overriding consideration in making a determination as to what should be categorized as technology transfer is that the activity so classified should be dedicated to technology transfer from the outset. Many Federal R. & D. activities ultimately result in processes or products or services useful in meeting State and local government or private sector needs. However, this is not technology transfer because technology transfer, as defined here, is the transformation process itself. NASA's Technology Transfer and Technology Utilization programs are good examples of programs dedicated to achieving this transformation. Likewise, many agencies have technical information dissemination programs aimed at achieving the same goal.

It is recognized that a strong national policy concerning technology transfer in the Federal government has not been developed. This lack of a national policy has prevented the institutionalization of the process and reduced the efficacy of attempts, by many Federal laboratories, to provide technical assistance for solving the problems of the public and private sectors.

The Federal laboratories have been established to assist their parent agencies to meet their mission requirements. With the exception of NASA, the technology transfer activity is not a part of the congressionally mandated mission of Federal agencies. Thus, technology transfer activities are, at best, secondary to those endeavors which support the agencies' primary responsibilities.

A major objective of the Act is to clearly articulate that it is the intent of Congress to mandate and promote technology transfer activities at the Federal agencies and their laboratories. Thus, Section 11 begins by specifically stating a congressional policy on technology transfer in the Federal government. It is intended that this policy will provide the basis for the inclusion of technology transfer programs in the mission requirements of every Federal agency engaged in R. & D. activities.

(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 no 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.

Section 11(b) establishes an institutional framework for the performance of the technology transfer function at the Federal laboratories. Institutionalizing the technology transfer function is crucial in order to ensure that the technology transfer activities at the laboratories are given the visibility and resources needed to carry out the requirements of the Act.

At the same time, it is recognized that the Federal agencies, due to their differing missions and structures, need a degree of flexibility in handling the technology transfer requirement. Thus, the Act provides that each agency shall determine in consultation with its laboratories how the Research and Technology Applications Offices shall be staffed and funded and whether to combine the functions of the application offices with any existing units at the laboratories which perform similar functions. Where there are existing units, it is not the committee's intent to force them to be renamed; there should be a designation of what unit is the Office of Research and Technology Applications at each laboratory, however, so that the Center for the Utilization of Federal Technology and other groups know whom to contact with regard to the functions of this section. Although this considerable flexibility is provided, the Act mandates that, at a minimum, laboratories having an annual budget exceeding $20 million, must commit at least one full-time staff person to the Research and Technology Applications Office.

It is further noted that there are few incentives at most Federal laboratories for scientists or other professionals to become actively involved in technology transfer activities because it is not part of their mission. As a corollary, because technology transfer is not a recognized, officially sanctioned activity of the majority of Federal laboratories, work performed in this capacity is not often relevant to professional promotion within the organization. In fact, career development of staff engaged in technology transfer is sometimes detrimentally affected because time is spent on activities other than those specified in positions descriptions upon which promotions are based.

Laboratory Directors are hesitant to encourage what often has been perceived as volunteer work for State and local governments and private organizations due to the fear that, at budget time, OMB and Congressional Committees will view these activities as evidence of surplus staff time and other resources.

For the above reasons, it is considered crucial to the accomplishment of the objectives of the Act that officially sanctioned offices, specifically assigned the mission of promoting technology transfer at the laboratories, be established, and that, at least in the case of laboratories with annual budgets exceeding $20 million, a full time staff member is assigned to the Office.

To provide the fiscal resources necessary to carry out the functions of the Research and Technology Applications Offices (as defined in Section 11(c)), Section 11(b) mandates that 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 its laboratories. It should be noted that this 0.5 percent set-aside is not effectively mandated until fiscal year 1982 in order to provide Federal agencies the time they need to plan and develop the activities mandated by this Act.

It should also be noted that the set-aside is to be applied both to agency level and laboratory activities in support of the requirements of section 11 of this Act. The determination as to how the set-aside is to be allocated among the laboratories under the agency's control and agency level technology transfer activities is left to each agency's discretion. It is *not* the intent of the Act that, where an agency is currently funding technology transfer endeavors in excess of 0.5 percent of its annual R & D budget, the agency view the 0.5 percent set aside as a justification to cut back on such endeavors to the 0.5 percent level. The Act specifically states that "not less than 0.5 percent of agency's R & D budget" be committed to this function. The set-aside, therefore, is to be viewed as a minimum rather than a maximum budget commitment.

That the 0.5 percent minimum is truly minimal may be seen in the testimony of William C. Norris, founder and Chief Executive Officer of Control Data Corporation: "We recommend, therefore, that each Federal agency allocate five percent of its R & D funds for technology transfer."[1] This is ten times the minimum stipulated by the bill.

(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.

[1] Norris, William C., in testimony before a joint hearing of the Task Force on Inflation of the House Budget Committee and the Subcommittee on Science, Research and Technology of the House Committee on Science and Technology, "Productivity and Technical Innovation," Committee on Science and Technology, No. 36, 1979, p. 46.

Subsection (c) identifies a number of specific functions which will aid in the achievement of technology transfer throughout the Federal laboratory system. It will be necessary that each agency further define these functions in accordance with its peculiar characteristics. The concluding paragraph of subsection (c) permits an agency, such as NASA, which already has extensive technology transfer programs outside its laboratories, to carry out the bulk of these functions in its existing programs.

Subsection (c)(1) requires that an application assessment be prepared for each R. & D. project at the laboratory which has potential for successful application in State and local government or in private industry. It is not intended that every R. & D. project be formally assessed. Rather, it is left to the discretion of those agency personnel assigned to the Research and Technology Applications Offices to determine when, how, and for which R. & D. activities such an assessment must be prepared. The only criterion provided by the Act is that an assessment is required when an R. & D. project is determined to have potential for successful application in State and local government or in private industry. The Act's intent is to encourage the Research and Technology Offices to constantly scrutinize laboratories' R. & D. activities at all stages with a view toward the possibility of successful technology transfer to State and local government and private industry.

Subsection (c)(2) requires the Research and Technology Applications offices to provide and disseminate information on products, processes, and services which have potential application to State and local government and to private industry. The intent is to provide the potential user the opportunity to receive information directly from the source of the technology rather than indirectly from third parties. However, it is not the intent of this subsection that existing information dissemination services be duplicated where they effectively communicate such information.

Subsection (c)(3) requires each Research and Technology office to cooperate with the Center for the Utilization of Federal Technology and other organizations that act as overall links between the R. & D. resources in the Federal government and potential uses in State and local government and private industry. Again the intent is to provide to the potential user greater access to the source of technical assistance through the facilities offered by such crosscutting organizations as the Center for the Utilization of Federal Technology.

Subsection (c)(4) identifies an extremely critical function of the Research and Technology Applications Offices with regard to technology transfer to State and local governments. Subsection (c)(4) recognizes that technology transfer must, to be effective, consist of more than information dissemination. Technical assistance, often in the form of person-to-person assistance, is also required. Where feasible, personnel from laboratories which are the source of useful technologies should be committed to assist State and local officials in their attempts to apply these technologies to their specific needs. Each agency, in

consultation with its laboratories and the Center for the Utilization of Federal Technology shall determine how requests for assistance from State and local officials shall be received and processed.

The final sentence of subsection (c) recognizes that, in some instances, the services available at the Research and Technology Applications Offices, or other Federal organizations performing the functions of the subsection, may compete with similar services available in the private sector. Where this is the case, care must be taken to avoid the duplication of these privately offered services. However, in some instances, especially with regard to State and local government needs, private services, although available, may prove too costly to be prevailed upon. In such cases, the Research and Technology Applications offices may provide similar services.

(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—

(1) serve as a central clearinghouse for federally owned or originated technical information having potential application in State or local government or industry including at least (A) all application assessments prepared pursuant to subsection (c)(1) and (B) federally owned patents;

(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 laboratory;

(5) provide funding, where necessary, for Federal laboratories to provide the assistance specified in subsection (c)(4); and

(6) utilize such technology transfer mechanisms as are appropriate, including but not limited to, personnel exchanges and computer-based systems.

Subsection (d) establishes, in the Department of Commerce a single Center for the Utilization of Federal Technology (CUFT). CUFT is already being established in the Department of Commerce and the Act, therefore, merely provides a legislative basis for it.

Because the various Federal agencies will operate their technology transfer programs under guidelines which may be diverse, there will be a need for a centralized mechanism for communication and coordination. CUFT is established to act as this centralized mechanism.

It is not the intent of Congress that CUFT should challenge the jurisdiction of any agency over its laboratories. Rather, the intent is to establish a single focus for outside contact with the laboratories and to facilitate interagency communication.

Where possible, CUFT is to use existing mechanisms for the performance of its functions. For example, as subsection (d)(3) indicates, CUFT is required to utilize the expertise and services of the National Science Foundation and the Federal Laboratory Consortium for Technology Transfer in accomplishing its tasks. By using existing

organizations, CUFT should be able to act as an effective channel f cooperative efforts and for transferring knowledge between agenci between laboratories, between Governmental jurisdictions, and b tween the Government and the private sector in the most cost-effecti manner.

The intent of Subsection (d)(5) is to provide CUFT the authori to fund, at its discretion, certain technology transfer activities Federal laboratories, especially those requiring technical assistan to State and local governments, which might otherwise not be pr vided. For example, a technology developed at a Federal laborato may be identified by the Research and Technology Applications Offi at that lab as useful to some segment of State and local governme but in need of further refinement in order to be readily adaptable the specific needs of the potential users. When funds are not availab to adapt the technology through the individual agency, CUFT ma elect to provide the necessary funding assistance. Priority should given to adapting those products, processes, or services which wi have the widest application to State and local government needs.

Paragraph (d)(5) should not be construed as an entitlement; only provides permissive authority. Funds would be available on when provided in the CUFT budget. State and local governmen would also have the option of reimbursing the laboratory or agenc for technical services, provided the agency has authority to acce such reimbursement.

(e) AGENCY REPORTING.—Each Federal agency which operates directs one or more Federal laboratories shall prepare annually report summarizing the activities performed by that agency and i Federal laboratories pursuant to the provisions of this section. T report shall be transmitted to the Center for the Utilization of Feder Technology by November 1 of each year.

In accordance with the Act's intent that CUFT be a focus for info mation on agency-wide technology transfer efforts, subsection (e requires that each Federal agency subject to the requirements of se tion 11 shall prepare an annual report on its technology transf activities and submit it to CUFT by November 1 of each year. Wit this information, CUFT should be in a position to assess, on an annu basis, the efforts of the Federal government with regard to the ma dates of this Act and, when requested, report on these efforts Congress.

N. SECTION 12—NATIONAL TECHNOLOGY MEDAL

SEC. 12. NATIONAL TECHNOLOGY MEDAL.

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

*(b) AWARD.—The President shall periodically award the med on the basis of recommendations received from the Secretary or the basis of such other information and evidence as he deems appr priate, to individuals or companies, which in his judgment are deser ing of special recognition by reason of their outstanding contrib

Committee version of S. 1250 authorizes appropriations of $267 for fiscal years 1981 through 1985 for similar programs promoting innovation in technology.

X. COST AND BUDGET DATA

In accordance with the requirements of section 252(b) of the Legislative Reorganization Act of 1970 and pursuant to Clause 7 of Rule XIII of the Rules of the House of Representatives, the committee estimates the costs to be incurred by the Federal Government during the current and five subsequent years as a result of the enactment of this legislation as follows:

	Funds appropriated pursuant to authority in this bill that would not otherwise be appropriated	Funds for utilization of Federal technology that would not otherwise be appropriated	Total
Fiscal year:			
1981	$8,400,000	0	$8,400,000
1982	49,000,000	$20,000,000	69,000,000
1983	64,000,000	21,000,000	85,000,000
1984	74,000,000	22,000,000	96,000,000
1985	74,000,000	23,000,000	97,000,000
1986	0	24,000,000	24,000,000

XI. EFFECT OF LEGISLATION ON INFLATION

In accordance with Clause 2(1)(4) of Rule XI of the Rules of the House of Representatives, the following statement is made concerning the inflationary impact of the legislation: The costs of the bill are only a tiny portion of the national economy and are assessed to have no adverse inflationary effect on prices and costs in the economy in either the long run or the short run. The bill is designed specifically to improve innovation and productivity in the economy, and in the medium to long run (within two years and then continuing) the bill is assessed to have a strong positive impact on the reduction of inflation.

XII. COMMITTEE RECOMMENDATION

The bill was ordered reported on July 2, 1980 by the Committee by voice vote.

XIII. ADMINISTRATION VIEWS

In addition to testimony presented at hearings on the subjects of this bill, comments on the bill as reported by the committee have been received from the Department of Commerce, the National Science Foundation, and the Department of Justice. These views follow:

A. Department of Commerce

GENERAL COUNSEL OF THE
UNITED STATES DEPARTMENT OF COMMERCE
Washington, D.C. 20230

18 JUL 1980

Honorable Don Fuqua
Chairman, Committee on Science and Technology
U.S. House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

There is presently pending before your Committee the report on S.1250, a bill ordered reported,

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

In ordering the bill reported your Committee made substantial revisions to S. 1250 as passed by the Senate, some of which cause the Administration very serious concern. We hope that before the bill is considered on the floor the Committee will reconsider its action and further amend the bill as set forth below.

Subsection 11(b) requires each Federal laboratory to establish a research and technology applications office to provide and disseminate information on Federally-owned or originated technology to State and local governments and to private industry and to provide technical assistance when requested by State and local government officials. Each Federal laboratory with a budget in excess of $20 million would be required to assign at least one professional full-time to the office and, starting with fiscal year 1982, each Federal agency which operates or directs a National laboratory would be required to set aside 0.5 percent of the agency's research and development budget to support technology transfer functions at the agency and its laboratories. Subsection 11(c) sets forth functions for the offices and subsection 11(e) establishes reporting requirements.

As the other Federal agencies have stated in letters to you, the Administration believes the policy of set asides as stipulated in subsection 11(b) is neither administratively sound nor appropriate. Not all Federal laboratories have research programs which generate significant quantities of information which could be usefully transferred. It would be wasteful to require these laboratories to establish technology transfer offices. Yet other laboratories utilize centrally-located staffs serving several laboratories to accomplish technology transfer. The Administration believes the responsibility for creating and structuring laboratory offices should be left to the Executive Branch.

The specified minimum staffing requirement and budgetary set aside are also objectionable. As the other Federal agencies have detailed to you, the set aside dictates a multimillion dollar program in a whole range of agencies at the expense of other existing and important programs. Further this provision has been added by the Committee outside the normal Congressional authorization and appropriation process and without any of the normal scrutiny associated with the Executive budget process.

For these and other compelling reasons such as the requirement in subsection 11(d)(5) that the Center for the Utilization of Federal Technology, despite no money being included in the President's budget for that function, fund, where necessary, the laboratories' costs of providing technical assistance under subsection 11(c)(4) to State and local governments, we believe that subsections 11(b), (c) and (e) should be deleted from the bill.

Subsection 11(d) establishes a Center for the Utilization of Federal Technology (CUFT) in the Department of Commerce to serve as a central clearinghouse for Federally-owned or originated technical information. We are already planning to establish a similar entity by the same name in the National Technical Information Service of this Department for fiscal year 1981. The President has requested $1.2 million to fund CUFT in fiscal year 1981. In order to make subsection 11(d) consistent with the President's planned activities for CUFT and the deletion of subsections 11(b), (c), and (e), we recommend that it be renumbered subsection 11(b) and revised to read:

(b) 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--

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

(3) use 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; and

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

The bill would direct the Secretary of Commerce to establish an Office of Industrial Technology headed by a Director and would assign the Director a variety of duties designed to enhance technological innovation in the United States. Rather than assigning these duties and authorities directly to the Director, the bill should be revised to assign them to the Secretary. This would be consistent with existing legislative authorities exercised by such Departmental operating units as the Patent and Trademark Office, the National Bureau of Standards (NBS), and the National Technical Information Service (NTIS). Consistent with the proposed reorganization of this Department's Office of Science and Technology and the proposed renaming of the Assistant Secretary for Science and Technology as the Assistant Secretary for Productivity, Technology and Innovation, we plan to have the Director report to this Assistant Secretary. Accordingly, we recommend that the references in sections 6 and 7 to the Director be revised to be references to the Secretary and that the first sentence of subsection 5(c) be revised to read:

(c) Duties.--The Secretary, through the Director, on a continuing basis, shall --.

The bill would require that the Director be appointed by the President, by and with the advice and consent of the Senate. Consistent with our planned reorganization, we believe that the Director should be appointed by the Secretary rather than by the President. We also believe it would be premature to make the Director an Executive Schedule level V. Therefore, we recommend that subsection 5(b) be revised to read:

(b) Director.--The Secretary shall appoint a Director of the Office.

Subsection 6(e) deals with the disposition of inventions conceived or made under the auspices of a Center for Industrial Technology supported at least in part by Federal funds. This provision, for the reasons set forth in a letter to you from the Department of Justice, is inconsistent with the provisions of H.R. 6933, the Administration's omnibus patent policy bill. It must be stressed that our objection is not merely based on the substance of the differences; even more importantly we oppose the legislative creation of yet another "special case" patent policy. A uniform government-wide patent policy is needed to eliminate the confusion and disincentives inherent in the vast array of statutes and regulatory authorities

establishing patent policies for the Federal agencies. We would prefer that the bill be silent on the issue of patent policy, letting this Department's patent policy, as that of the supporting agency, govern allocation of patent rights pending enactment of uniform government-wide patent policy legislation such as H.R. 6933.

Subsection 6(f) would require a mandatory antitrust review by the Attorney General before a Center for Industrial Technology can be established. In recognition that establishment of some Centers may involve only antitrust questions that can be satisfactorily resolved without review by the Attorney General by reference to existing law and announced positions of the Department of Justice, that antitrust questions needing review by the Attorney General may arise subsequent to establishment of a Center as planned activities change, and to make clear that the antitrust laws remain applicable regardless of any opinion issued by the Attorney General, we recommend that subsection 6(f) be revised to read as follows:

> (f) Additional Consideration.--The Secretary 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 Secretary of his determination and the reasons for it within 120 days after receipt of such request. However, the establishment of a Center, the rendering of an opinion by the Attorney General, or any other activity undertaken or approved under this Act shall not convey to any person, association, corporation or other business organization, immunity from civil or criminal liability, or create defenses to actions under any antitrust law.

Section 8 would authorize the National Science Foundation (NSF) to provide assistance for the establishment of Centers. We support NSF's suggestions that section 8 could be dispensed with because the National Science Foundation Act provides NSF with ample authority with respect to Centers and that appropriate conforming changes be made elsewhere.

Section 10 of the bill would establish a National Industrial Technology Board (NITB) to advise the Secretary and the Director as to the activities of the Office of Industrial Technology and as to any other matters that the Secretary or the Director refer to it. This section is unnecessary, removes needed administrative flexibilities, and will be expensive. The existing Commerce Technical Advisory Board (CTAB) which is chartered (copy attached) under the Federal Advisory Committee Act presently performs many of the same types of tasks specified for the NITB. Its members serve on an expenses only basis, at the will of the Secretary, while members of the NITB would have fixed statutory terms of office and could receive

compensation at the daily rate of a GS-18 as well as expenses. We estimate that compensation for the NITB members could exceed $50,000 per year. Because the CTAB exists under Executive Branch charter rather than being legislatively created with fixed terms, members may be added or dropped from the Committee at the will of the Secretary as special expertise is or may no longer be needed. The existing CTAB has an outstanding record of performance and we are opposed to any attempt to replace it with another committee. Accordingly, we believe that the bill should be revised to delete section 10. At most, the bill should only require that the Secretary assign the functions specified for NITB to an appropriate advisory committee.

Section 14, which authorizes the appropriation of funds, should be revised to be in accordance with the President's budget request for fiscal year 1981 ($5.2 million for the Centers for Industrial Technology, identified as the Cooperative Generic Technology (COGENT) program in the President's budget, and $1.2 million for CUFT) and to provide an authorization of such sums as may be necessary for future fiscal years.

Finally, to reflect the Administration's and Congress's concern for involvement by minority firms, entrepreneurs, and inventors in technological innovation, research and development, we request that the following language be incorporated in the Committee report on the bill:

> The greater use of minorities in the scientific and technological fields would contribute significantly to the development of American industry to its full technological potential. The innovative talents of this segment of our economy could greatly enhance our overall national scientific technological capability.
>
> To address this problem, the Minority Business Development Agency (MBDA) of the Department of Commerce has, through its Industry and Technology Program, established and is utilizing a national system of Technology Commercialization Centers. These Centers serve as brokers between private and public sector markets and programs and minority concerns producing or seeking innovative concepts, designs and goods.
>
> It is expected that the entities created by this Act will assist and cooperate with the MDBA Program and its system of Centers.

We have been advised by the Office of Management and Budget that there is no objection to the submission of this letter to the Congress from the standpoint of the Administration's program.

Sincerely,

Homer E. Moyer, Jr.

Homer E. Moyer, Jr.
General Counsel

B. National Science Foundation

NATIONAL SCIENCE FOUNDATION
WASHINGTON, D.C. 20550

nsf

OFFICE OF THE DIRECTOR

JUL 16 1980

Honorable Don Fuqua
Chairman, Committee on
Science and Technology
U.S. House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

Thank you for your letter of July 1, 1980, inviting comments from the National Science Foundation on S.1250, The Stevenson Technology Innovation Act of 1980. We understand that S. 1250, as amended and reported to the full Committee on Science and Technology by the Subcommittee on Science, Research, and Technology, has not yet been reported by the full Committee. Its focus appears to be on industrial innovation in those sectors of the economy that, unlike defense, energy, and health, are not currently within the mandate of any specific agency. Industrial innovation is also, as you know, the focus of continuing attention by the Administration and, in particular, by the National Science Foundation and the Department of Commerce.

We are anxious to work with the Committee in constructive partnership to help reverse the troublesome decline in industrial innovation. S. 1250 could be the focus for such cooperation. As you know, however, there were no hearings before the Subcommittee on the amendments it has added and no request for comments from the affected agencies. In particular, the agencies have not had an opportunity until now to comment fully by testimony or letter on the provisions relating to technology transfer by Federal laboratories and centers.

As indicated in Dr. Atkinson's brief letter to you of June 30, the NSF would appreciate an opportunity to be heard on the Subcommittee amendments that will affect the NSF before final action is taken. At the same time, we recognize the late-session pressures that have been moving the Committee to early action. Under the circumstances we hope that the Committee will consider changing the bill before floor action to reflect comments from the NSF and other affected agencies.

99TH CONGRESS
2d Session

SENATE

REPORT
99-283

FEDERAL TECHNOLOGY TRANSFER ACT OF 1986

APRIL 21, 1986.—Ordered to be printed

Mr. DANFORTH, from the Committee on Commerce, Science, and Transportation, submitted the following

REPORT

[To accompany H.R. 3773]

The Committee on Commerce, Science, and Transportation, to which was referred the bill (H.R. 3773) 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 Science Foundation, and for other purposes, having considered the same, reports favorably thereon with an amendment in the nature of a substitute and recommends that the bill do pass.

PURPOSE OF THE BILL

The purpose of this bill is to improve the transfer of commercially useful technologies from the Federal laboratories and into the private sector. It amends the Stevenson-Wydler Technology Innovation Act of 1980 to allow the Federal laboratories to enter into cooperative research with private industry, universities, and others; it establishes a dual employee award system of royalty sharing and cash awards; and it establishes the Federal Laboratory Consortium for Technology Transfer.

BACKGROUND AND NEEDS

The Federal Government will spend approximately $18 billion in fiscal year 1986 on research and development at over 700 Federal laboratories. These laboratories employ one-sixth of the Nation's scientists and engineers. Although their main purpose is to serve government needs, these laboratories also have produced over 28,000 patents. Many of these inventions may have commercial ap-

71-010 O

plications. Over the years, however, only approximately 5 percent of Federal patents have been licensed.

There is broad agreement that we can and should improve the flow of technology from these laboratories to the private sector. The National Governors' Association, for example, issued a report in 1983 critical of the lack of cooperation or collaboration between the Federal laboratories and industry or universities.[1]

In addition, in 1982, the White House Science Council created a Federal Laboratory Review Panel, chaired by David Packard. The Panel surveyed both the Government-operated and contractor-operated Federal laboratories. In its 1983 report, the Panel made a number of findings related to the laboratories' missions, personnel, funding, management, and interaction with universities, industry, and outside groups. In its discussion of interaction, the report states:

> The United States can no longer afford the luxury of isolating its government laboratories from university and industry laboratories. Already endowed with the best research institutions in the world, this country is increasingly challenged in its military and economic competitiveness. The national interest demands that the Federal laboratories collaborate with universities and industry to ensure continued advances in scientific knowledge and its translation into useful technology. The Federal laboratories must be more responsive to national needs.
>
> The ultimate purpose of Federal support for R&D is to develop the science and technology base needed for a strong national defense, for the health and well-being of U.S. citizens, and for a healthy U.S. economy. Federal laboratories should recognize that they are an important part of the partnership with universities and industry in meeting this goal. A strong coooperative relationship must exist between Federal laboratories, universities, industry and other users of the laboratories' research results.
>
> Federal laboratories have felt traditionally that they are part of the government, committed to its highest service and totally dependent on it for support. They perceive industry as an awkward partner with a different value system. Although the degree of interaction with universities and industry varied among the laboratories visited, the Panel feels that this interaction could be increased at all Federal laboratories.[2]

The Panel report concluded that "Federal laboratories should encourage much more access to their facilities by universities and industry," and that "R&D interactions between Federal laboratories and industry should be greatly increased by more exchange of knowledge and personnel, collaborative projects, and industry funding of laboratory work. . . ."[3]

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[1] Technology and Growth, State Initiatives in Technological Innovation National Governors' Association, Sharwin Cowan, (Washington, DC), 1983.
[2] Report of the White House Science Council Federal Laboratory Review Panel, at 11 (1983).
[3] Supra, at 12.

Congress has enacted several laws designed to improve technology transfer. One of the first was the Bayh-Dole Patent and Trademark Amendments of 1980 (Public Law 96–517). As passed, it did not apply to Federal laboratories. Instead, it gave nonprofit organizations (especially universities) and small businesses rights to inventions made under Federal grants and contracts. The new patent policy led to increased efforts by universities to report, license, and develop [illegible]ions. In 1984, Congress extended the new policy to Federal laboratories operated by universities and nonprofit corporations (Public Law 98–620).

THE STEVENSON-WYDLER ACT

Also in 1980, Congress enacted the Stevenson-Wydler Technology Innovation Act of 1980 (Public Law 96–480). The act makes the transfer of Federal technology to industry, States, and localities a national policy and the duty of each laboratory. It set aside 0.5 percent of the agencies' research budgets to fund technology transfer. This set-aside may be waived, but the agency must show that it is otherwise accomplishing technology transfer.

The act created Offices of Research and Technology Applications in the larger laboratories to evaluate new technologies, to promote the transfer of those with commercial potential, and to make laboratory resources more available to those outside the laboratory. It also created the Center for the Utilization of Federal Technology in the Department of Commerce as a clearinghouse for information on Federal inventions. Agencies use the resources of the Center for patent licensing and other assistance in transferring technology. The Department of Commerce has placed the Center in the National Technical Information Service. The Center was intended to provide a networking function among the Offices of Research and Technology Applications, but has failed to do so.

Otherwise, most of the Stevenson-Wydler Act has not been implemented. Other major provisions in the act: (1) establish an Office of Industrial Technology, the duties of which are being performed by the Office of Productivity, Technology, and Innovation, in the Department of Commerce; (2) establish a grant program to fund Centers for Industrial Technology at universities to do research of interest to industry (an appropriation for this program in 1981 was rescinded, and the Centers have not been funded since); (3) establish a National Industrial Technology Board, which has never existed; and (4) establish a National Technology medal as a counterpart to the National Science Medal. The President awarded these medals for the first time in 1985 and awarded a second set in March 1986.

COOPERATIVE RESEARCH AND DEVELOPMENT

Despite the Bayh-Dole Act as amended in 1984 and the Stevenson-Wydler Act, the Federal laboratories still face problems and disincentives in trying to transfer technology. This is especially true for those laboratories operated by the Federal Government, as opposed to those operated by contractors. Many of them have no clear legal authority to enter into cooperative research projects. The Secretary of Commerce, in his February 1984 report to the

President and Congress on operations under the Stevenson-Wydler Act stated:

> It appears to be no accident that technology complexes such as Silicon Valley, Route 128, Research Triangle, and Princeton's Forrestal Center have evolved around major universities. Direct access to the university and the university's right to transfer the results of its research on an exclusive basis is an important incentive for business to invest in the further development and commercialization of new technologies. In contrast, Federal laboratories generally have not served as nuclei for similar arrangements. They often perceive themselves as unable to enter into cooperative development arrangements because of organizational and legal restraints. This is one reason why national reviews of Federal laboratories have concluded that too little of the results of laboratory research is used in the private sector.[4]

To improve technology transfer, the Federal laboratories need clear authority to do cooperative research, and they need to be able to exercise that authority at the laboratory level. Agencies need to delegate to their laboratory directors the authority to manage and promote the results of their research. A requirement to go to agency headquarters for approval of industry collaborative arrangements and patent licensing agreements can effectively prevent them. Lengthy headquarters approval delays can cause businesses to lose interest in developing new technologies.

THE FEDERAL LABORATORY CONSORTIUM FOR TECHNOLOGY TRANSFER

The Federal Laboratory Consortium is an existing ad hoc group of scientists who form a network among the Federal laboratories to transfer technology. It began within Department of Defense laboratories in 1971. It now consists of almost 300 laboratories from 11 agencies. The laboratories appoint employees as representatives to the consortium. The representatives are often the Office of Research and Technology Applications officers at the laboratories. The Consortium is thus an association of those responsible for technology transfer at the working level.

The Consortium is funded by voluntary contributions from the member-agencies. For most of the last decade it funded a program manager at the National Science Foundation who acted as a Washington coordinator with the agencies. The Consortium has not been able to fund this office consistently for the last few years, and the Foundation no longer makes the office space and support available.

LEGISLATIVE HISTORY

The Science, Technology, and Space Subcommittee held three hearings, on April 17, May 2, and July 1, 1985, on technology transfer and the effect of new technologies on economic competitiveness. As a result of the hearings, Senator Gorton introduced S. 1914 on

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[4] The Stevenson-Wydler Technology Innovation Act; Report to the President and Congress from the Secretary of Commerce; February 1984, p. 24.

December 9, 1985, with Senators Danforth, Riegle, Heflin, Gore, Rockefeller, Dole, Hollings, Inouye, D'Amato, Simon, Bingaman, Dixon, Pressler, and Bumpers.

S. 1914 incorporates other legislation designed to allow Federal laboratories to do cooperative research. In the 98th Congress the Senate Committee on the Judiciary reported S. 2172, which included provisions allowing cooperative research and royalty sharing, among other things, but which were removed before the legislation passed the full Senate (Public Law 98–620). Senators Dole and Danforth introduced these provisions as S. 65 in the 99th Congress. Most of S. 65 is included in S. 1914, along with provisions creating the Federal Laboratory Consortium for Technology Transfer and other amendments to the Stevenson-Wydler Act.

The House passed a bill parallel to S. 1914; H.R. 3773, by unanimous vote on December 9, 1985. Both H.R. 3773 and S. 1914 were referred to the Senate Committee on Commerce, Science, and Transportation. On March 13, 1986, the Committee ordered H.R. 3773 reported favorably, with an amendment in the nature of a substitute. The language of the amendment reported by the Committee is that of S. 1914, with minor amendments.

Summary of Major Provisions

As reported, H.R. 3773 would:

1. Improve the technology transfer provisions of the Stevenson-Wydler Act (section 11) by bringing them into conformity with actual practice and by eliminating some waivers;
2. Create the Federal Laboratory Consortium for Technology Transfer, located at the National Bureau of Standards and funded for 5 years through a set-aside equal to 0.005 percent of each agency's research and development budget spent at its laboratories;
3. Permit agencies to allow their laboratories to enter into cooperative research agreements with industry, universities, and others, and to negotiate patent licensing agreements;
4. Direct the head of agencies with large laboratories to use existing law to institute a cash awards program to reward scientific, engineering, and technical personnel; and
5. Require that agencies give at least 15 percent of royalties received from licensing an invention to the inventor, and distribute the balance of any royalties among its laboratories.

Estimated Costs

In accordance with paragraph 11(a) of rule XXVI of the Standing Rules of the Senate and section 403 of the Congressional Budget Act of 1974, the Committee provides the following cost estimate, prepared by the Congressional Budget Office:

U.S. CONGRESS,
CONGRESSIONAL BUDGET OFFICE,
Washington, DC, April 8, 1986.

HON. JOHN C. DANFORTH,
Chairman, Committee on Commerce, Science, Transportation,
U.S. Senate, Washington, DC.

DEAR MR. CHAIRMAN: The Congressional Budget Office has reviewed H.R. 3773, the Federal Technology Transfer Act of 1986, as amended and ordered reported by the Senate Committee on Commerce, Science, and Transportation, March 13, 1986. We estimate that enactment of this bill could result in annual costs to the federal government of up to $2.5 million.

The bill would amend the Stevenson-Wydler Technology Innovation Act of 1980 and would establish a number of procedures to encourage the development of technologies by laboratories owned or operated by the federal government, to facilitate the transfer of such technologies to the public, and to promote cooperation between those laboratories and the private sector. These activities would be funded by a transfer of 0.005 percent of the research and development budgets of federal laboratories in each of fiscal years 1987 through 1991. To the extent that future appropriations may be increased to accommodate the transfer, such activities may result in additional annual costs of about $900,000.

This bill would also require an agency to pay to an inventor at least 15 percent of the royalties deriving from the invention, if the invention was produced by an agency employee using agency resources. The balance of the royalties would be distributed among the agency's laboratories. These payments would be subject to appropriations beginning in fiscal year 1988. Currently, these royalties are paid to the U.S. Treasury. About $1.6 million in royalties were collected in fiscal year 1985.

CBO estimates that payments to inventors and laboratories would result in additional outlays by the federal government of about $1.6 million in fiscal year 1987; this would occur without appropriation action. Additional outlays of up to $1.6 million could occur in each year thereafter, but would be subject to appropriation action.

No costs would be incurred by state or local governments as a result of enactment of this bill.

If you wish further details on this estimate, we will be pleased to provide them.

Sincerely,

RUDOLPH G. PENNER, *Director.*

REGULATORY IMPACT STATEMENT

In accordance with paragraph 11(b) of rule XXVI of the Standing Rules of the Senate, the Committee provides the following evaluation of the regulatory impact of the legislation, as reported.

NUMBER OF PERSONS COVERED

This legislation permits the Federal laboratories to do cooperative research with outside parties, it codifies an existing network of

laboratory employees, and it establishes an employee award system for Federal employees. It does not require new regulations. The legislation anticipates that a significant number of businesses, universities, State agencies, and others will choose to do cooperative research with the laboratories. They will do so voluntarily, however. The provisions allowing agencies to delegate authority should reduce regulatory burdens on industries working with the laboratories.

ECONOMIC IMPACT

This legislation authorizes no new Federal spending. It has two provisions with potential economic effects: (1) A set-aside of 0.005 percent of an agency's research and development budget that it spends on its laboratories; and (2) a pass-through of royalty income to laboratories. Royalties presently go into the Treasury. Both of these economic effects are small (less than $1 million estimated for fiscal year 1987 for (1), above, and $1.6 million for fiscal year 1986 for (2), above). Both expenditures, by increasing incentives to transfer Federal technology to the private sector, should yield benefits to the economy as a whole.

PRIVACY

Private parties that choose to do cooperative research with Federal laboratories may have to report inventions, patents, and royalties, give the laboratories access to research results, and have other similar intrusions on their privacy. These will be voluntary arrangements, however, and the terms will be negotiated before entering into the agreements.

PAPERWORK

This legislation requires a report to Congress from the Department of Commerce every 2 years on the use of the new authorities under the act. It also requires Federal agencies to report on their receipt of and disposition of royalty income as part of their regular budget submissions.

SECTION-BY-SECTION ANALYSIS

SECTION 1

This section provides that this act may be cited as the "Federal Technology Transfer Act of 1986".

SECTION 2

This section contains amendments to the Stevenson-Wydler Technology Innovation Act of 1980. Section 2(a) amends the policy statement to provide that technology transfer efforts should be treated positively in evaluations and promotions of Federal employees. The Committee does not intend that agencies would be required by this section to change their job descriptions and formal employee evaluation and promotion forms.

Section 2(b) changes the size of a laboratory which must have one full-time staff member in its Office of Research and Technology

Applications from a laboratory with a $20 million annual budget to one with 200 or more scientists, engineers, and technicians. It eliminates the waiver of this requirement, but it also changes the requirement from "one professional individual full-time" to "one or more full-time equivalent positions" for those laboratories that use a team approach.

This subsection adds a new function to the Offices of Research and Technology Applications: that of participating in regional, State, and local government programs to transfer technology for the benefit of the area in which the laboratory is located. There is a great deal of activity at the State and local level to promote technological development. This legislation is consistent with the administration's policy to encourage these efforts. It envisions a decentralized approach to technology transfer, in which the laboratories contribute to regional development.

Section 2(c) changes the name of the Center for the Utilization of Federal Technology to the National Technical Information Service, and clarifies its duties. It eliminates the duty to coordinate the activities of the Offices of Research and Technology Applications, which is transferred to the Federal Laboratory Consortium. These changes are designed to reduce confusion and to reflect reality. The Committee intends that the Center for the Utilization of Federal Technology continue to perform its present functions. The Center is within the National Technical Information Service, however, and the Committee believes it is unnecessarily confusing to include the name of the subunit in law.

This subsection also changes the recipient of biannual reports required by the technology transfer provisions in the Stevenson-Wydler Act from the Center for the Utilization of Federal Technology to the Secretary of Commerce.

SECTION 3

This section adds a new section to the Stevenson-Wydler Act to establish the Federal Laboratory Consortium for Technology Transfer. This section establishes the Consortium's duties and membership; provides that the Director of the National Bureau of Standards shall provide it with administrative services on a reimbursable basis; and provides that each agency shall provide the Consortium with an amount equal to 0.005 percent of its laboratories' research and development budgets, which will total approximately $1 million per year for 1987 through 1991.

This funding is intended to be temporary and is not intended to be reauthorized in 1991. Agencies and laboratories may supplement this funding through voluntary contributions, and the Committee intends that voluntary contributions will provide full funding after 1991, including reimbursing the National Bureau of Standards.

The duties of the Consortium include training Federal laboratory employees in technology transfer with the consent of the laboratories involved; helping agencies with technology transfer; providing a clearinghouse at the laboratory level for outside requests for technical assistance; helping laboratories establish programs to provide technical assistance to local communities; and facilitating com-

munication both among the Offices of Research and Technology Applications and between the Offices and outside parties.

The Committee intends that the Consortium exist within the bounds of policy set by the various agencies with Government laboratories. None of its responsibilities is intended to interfere with each agency's ability to set policy for its own laboratories or with the Offices of Research and Technology Applications officers' ability to work directly with each and with potential users of federal technology. Although the legislation provides for an office at the National Bureau of Standards, the Committee does not intend for the Consortium to change its decentralized organization. Agency heads and laboratory directors will designate the representatives to the Consortium, and they should continue to be, generally, the officer of the Office of Research and Technology Applications. For smaller laboratories, without full-time professionals in these offices, agency heads may choose to designate a single Consortium representative for more than one laboratory.

H.R. 3773 as it passed the House of Representatives places the Consortium at the National Science Foundation. The Committee substitute places the Consortium at the National Bureau of Standards because of the Bureau's extensive contacts and experience with industry. The Committee expects the Consortium to select a person to serve as its Washington, DC representative, to maintain liaison with interested agencies and with the national offices of various common-interest groups, such as trade associations and associations of State and local public officials. The Consortium may obtain additional office space in Washington, DC to facilitate this liaison function; any agency willing to provide such space, on a no-cost or cost-reimbursed basis, may do so.

The fund transfers for the Consortium are to be made to the National Bureau of Standards at the start of each fiscal year in which they are required. These funds should not be subject to controls imposed on National Bureau of Standards funds, such as personnel ceilings and domestic travel limits. The Committee expects the Bureau to transfer funds as requested by the Consortium. The Bureau is not to be held responsible for performing the duties of the Consortium or accountable for the actions of the Consortium.

SECTION 4

This section amends the Stevenson-Wydler Act to clarify the duties of the Secretary of Commerce and to require a biannual report to Congress and the President on how Federal agencies are using the authorities established under this act.

The Secretary of Commerce is to make the Department of Commerce's expertise available to interested agencies to help those agencies make best use of the authorities granted under this act. The Department of Commerce will develop and disseminate techniques for evaluating the commercial potential of inventions, model agreements covering the disposition of inventions for use in establishing cooperative arrangements, and advice and assistance for laboratory directors.

SECTION 5

This section adds a new section to the Stevenson-Wydler Act authorizing agencies to permit their Government-operated laboratories to enter into cooperative research and development arrangements with private industry, other units of Government, universities, or other per[illegible] authorizes a broad range of cooperative research and deve[illegible]t arrangements where there is a mutual interest between the laboratory mission and other levels of government or private sector organizations.

Section 5 defines cooperative agreements as those in which the Federal Government provides resources, but not funds, along with a collaborating party, toward the conduct of specific research or development which is consistent with the missions of the agency. Nevertheless, this section is not intended to prohibit Federal financial contributions as might be authorized and appropriated by other acts of Congress.

To effectuate cooperative research agreements, the section gives Federal laboratories the authority to accept funds, services, and property from the collaborating parties; to agree to grant in advance licenses to patents on inventions made by Federal employees; to waive the Government's right of ownership in inventions made by an employee of a collaborating party; and to permit employees or former employees to help commercialize their inventions, to the extent this is consistent with agency requirements.

Section 5, as well as the other sections of H.R. 3773, make no changes in the conflict of interest laws affecting Federal employees or former Federal employees. The Committee does not believe that this section releases former employees from conflict of interest restraints in current law, and does not intend this result. Agencies have the flexibility under this section to establish standards for cooperative research arrangements which prevent former employees from benefitting unjustly from their former employment. Conversely, laboratories may need the assistance of former employees to develop the commercial potential of inventions, and this provision is intended to allow their participation according to agency standards.

In addition, section 5 does not alter the patent laws to give existing or former Federal employees ownership of inventions discovered in the course of Federal employment. A former employee may file for a patent on an invention made as a Federal employee under current law. Under Executive Order No. 10,096, 15 Fed. Reg. 389 (1950), however, Federal employees must report and assign the rights to all inventions made in the course of their employment to the Federal Government.

The authorities conveyed by section 5 are permissive. Section 5 authorizes but does not require agencies to extend these decentralized authorities to their Government-operated laboratories. Moreover, whenever an agency does extend these authorities to a laboratory director, the director retains discretion to decide into which cooperative agreements, if any, to enter. The director may reject any offer and may use decision criteria, and set such terms and conditions, as the director sees fit, subject only to the requirements set forth in section 5, other applicable law, and agency directives.

A director may, for example, give priority to proposed cooperative agreements which, in the judgment of the director, are most likely to benefit employment in the United States or the technical development of U.S. companies.

Section 5 also allows agencies to permit their laboratories to negotiate and assign or issue patent licenses on inventions the Government owns. Industrial firms may be attracted to a laboratory by interest in an existing invention, and the laboratories need the authority to negotiate directly with firms that may wish to enter into cooperative arrangements to develop the invention further.

Often, collaboration between a laboratory and some other organization can be expected to lead to future inventions. All parties should be clear on who will have what rights to future inventions when the work begins. This amendment allows Federal laboratories to assign rights in future inventions to the cooperating, outside parties. It is anticipated that agencies will normally retain for the Government a paid license to use or have future inventions used in the Government's behalf.

Section 5 defines a laboratory as 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 and development by employees of the Federal Government." This is a broad definition which is intended to include the widest possible range of research institutions operated by the Federal Government.

This definition would include, for example, the Earth Resources Observation System Data Center, which the U.S. Geological Survey operates in Sioux Falls, SD. Universities, other Federal agencies, and private companies are interested in establishing a cooperative research institute there for remote sensing applications. The Center would clearly have the authority to participate under this legislation.

Most of the cooperative arrangements and patent assignments are expected to be forms of cooperative agreements as established by section 6305 of title 31, United States Code. Although these cooperative research and development arrangements must be consistent with the missions of the laboratories, the primary purpose of the agreements is to take technologies that originate in the laboratories and to stimulate or support their development and commercialization.

It is expected that these authorities will open an entirely new form of benefit to State and local governments by allowing the Federal laboratories to become active partners and contributors of technologies to promote regional economic development. Where desired, the contributions may be made through foundations or organizations established to advance State and local economic activity, such as the Rio Grande Technology Foundation in New Mexico.

SECTION 6

This section adds a new section 13 to the Stevenson-Wydler Act which establishes a dual employee award system. First, it requires Federal agencies that do a substantial amount of research and development to set up a cash award system to reward scientists and technicians for inventions, innovations, or other outstanding contri-

butions. It directs agencies to use existing authority or multiple authorities for these awards. For example, under section 4502(a) of title 5, United States Code, an agency may award an employee up to $10,000. Section 4502(b) of title 5, United States Code, allows awards up to $25,000 with the concurrence of the Office of Personnel Management. Section 4504 of title 5, United States Code, allows Presidential awards of unlimited amounts. The National Aeronautics and Space Administration has additional authority to award employees up to $100,000 under the National Aeronautics and Space Act of 1958 (42 U.S.C. 2458).

Second, it requires a direct payment of at least fifteen percent of royalties received for the right to use Government-owned inventions to the Federal employee-inventor(s). The Bayh-Dole Act has required universities to share royalties for Federal funded research since 1980. The universities have found royalty sharing with their inventors to be a powerful incentive which increases the number of inventions reported and encourages inventors to contribute to their commercialization. The committee believes this provision will accomplish the same end in Federal laboratories.

The Committee regards 15 percent as a minimum amount and believes the Federal laboratories will learn from the university experience and increase this percentage. The Committee recognizes, however, that agency cultures differ, and agencies such as the National Aeronautics and Space Administration, which has an active employee award system, may want to keep royalty sharing at this minimum.

The new section 13(b) allows Federal agencies to retain royalty income rather than return it to the Treasury. Agencies must transfer the balance of royalties, after paying inventors, to their Government-operated laboratories, with a substantial percentage going to the laboratory which produced the invention. The laboratory may keep all royalties it receives, up to five percent of its annual budget, and 25 percent of royalties in excess of the 5-percent limit. The laboratory may use the income for mission-related research and development, for education programs for laboratory employees, for employee awards, for scientific exchange, and to pay patenting and other costs.

This section is intended to provide predictable incentives to Federal researchers and their laboratory managers to develop the commercial potential of their work. This incentive approach is an innovation in the Federal Government which should be monitored. Accordingly, the new section 13 includes three provisions to insure that royalty income over and above a laboratory's normal budget does not adversely affect the laboratory's primary mission.

First, the new section 13(b)(2) limits the amount of royalties a laboratory may retain in relation to its annual budget, as discussed above. Second, new section 13(d) requires agencies to report on royalty receipts and dispositions to Congress in their annual budget submissions. Third, new section 13(b) requires that, beginning in fiscal year 1988, royalties shall be subject to appropriations.

Beginning in fiscal year 1988, the Committee anticipates that agencies will submit reasonable upper estimates of the royalty amounts they anticipate receiving. The Committee intends that these estimates will be appropriated in addition to regular agency

budgets. The Committee intends that royalty or other income from inventions received after the enactment of this act and before fiscal year 1988 shall be retained by the agency and distributed as provided in this act.

The new section 13(b)(2)(E) provides that agencies may use their royalty income to pay patenting costs and other expenses incidental to managing inventions, including the fees or costs of services of other agencies or other services. In some cases, for example, agencies make arrangements with the National Technical Information Service whereby the Service provides patent and licensing services. This new section allows agencies, if they and the Service agree, to pay for the services out of royalties.

The Committee does not intend, however, that the new section 13 be interpreted as eliminating the Service's existing authority to accept payment for services through an alternative mechanism of user charges. Because the Service's patent licensing program is expected to be increasingly self-sustaining, the Service would run into severe cash-flow problems if it were forced to rely only on delayed payments from a royalty stream. Moreover, the Committee intends that any such user charges shall continue to be exempt from the appropriations process. Therefore, the term "royalties or related income" in new section 13(b)(2) means funds paid by a licensee or assignee for rights to an invention but does not include user charges (as defined in OMB circular No. A-25) paid by such licensee or assigned for retention by the Service as reimbursement for costs of developing licenses or assignments, including payments for foreign patent filing, maintenance, or other costs.

Some representatives of businesses that employ scientists fear that establishing royalty sharing for Federal employees will set a precedent for legislation mandating royalty sharing for private inventors. The Committee believes that the government is different from private industry in that it cannot promote or reward inventors as easily, and that more inventions will be reported and developed if Federal employees have a guaranteed share in potential royalties. The Committee does not intend for this provision affecting Government employees to set a precedent for private employees.

Section 6 includes cash award provisions in addition to royalty sharing so that agencies do not neglect productive employees (and laboratories) who either do not work in commercially productive areas or who contribute to, but do not have their names on, patents. The Committee intends that a substantial percentage of royalties go to the laboratories that produce the inventions. The Committee intends that "a substantial percentage" mean more than half and perhaps all of the royalties. Nevertheless, section 6 allows an agency to distribute royalties to non-commercially productive laboratories as well as those that produce inventions that are transferred to the private sector. The report of the Packard panel emphasized the need for laboratory managers to have discretionary funds to invest in innovative activities in the laboratory. This need exists for these laboratories as well as for those doing commercially applicable work.

SECTION 7

This section authorizes Federal agencies to transfer rights of ownership in an invention to the inventor if the agency does not intend to file for a patent license on the invention or otherwise to move the invention into the private sector. This section is intended to codify the policies expressed in Executive Order No. 10,096, 15 Fed. Reg. 389 (1950).

Under section 7, agencies would file Statutory Invention Disclosures for inventions they determine to have no commercial potential. In some cases, however, the inventor may not agree with this determination. This provision allows the invention to be given to the inventor for patenting and commercial exploitation. It is expected that when this is done, the government will retain its normal right to use the invention without paying royalties. Laboratory employees may also voluntarily transfer to the laboratory the ownership of an invention made outside of assigned duties for patenting and promotion.

SECTION 8

This section contains technical amendments to the Stevenson-Wydler Act. They are generally designed to bring the act into conformity with existing practice. These amendments include repealing the National Industrial Technology Board and changing the name of the Centers for Industrial Technology to Cooperative Research Centers, the name the National Science Foundation uses. There is no authorization for these Centers, however.

Section 8 also amends the Stevenson-Wydler Act to change references to the Office of Industrial Technology to the Assistant Secretary for Productivity, Technology, and Innovation. The Assistant Secretary's office has been performing these functions. The Committee is aware that the administration has proposed reducing the budget of the Assistant Secretary's office. The changes in this bill are not intended to serve as a reauthorization of this office, which is authorized under separate, annual legislation. If Congress follows the administration's proposal, the Committee notes that the Assistant Secretary's office will be fully staffed in 1987, and will continue to exist as a small, executive office after 1987. Therefore, it is not inconsistent with the administration's proposal to bring the act into conformity with existing practice.

The Committee initially considered reauthorizing the Stevenson-Wydler Act, which had a 5-year authorization which expired in 1985. The administration strongly opposed reauthorization. In two hearings in April and May 1985, however, the Department of Commerce expressed its continuing support for the technology transfer provisions in the act (section 11), and its belief that, because they are funded through a set-aside, they did not need to be reauthorized. Department of Commerce officials also stated their intention to fund other provisions of the Act, such as the National Technology Medal and duties being performed by the Office of Productivity, Technology, and Innovation, out of general Department of Commerce funding. The Committee concluded reauthorization would be needed for only those portions of the act, specifically sections 6, 7, and 10, which had never been implemented.

The Committee believes that a separate authorization of sections 6, 7, and 10 of the Stevenson-Wydler Act is not necessary at this time. The Committee intends that the Department of Commerce continue to fund sections 5, 9, 11, 12, and 13 out of its standing authorizations.

CHANGES IN EXISTING LAW

In compliance with paragraph 12 of rule XXVI of the Standir Rules of the Senate, changes in existing law made by the bill, reported, are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new material is printed in italic, existing law in which no change is proposed is shown in roman):

THE STEVENSON-WYDLER TECHNOLOGY INNOVATION ACT OF 1980

Section 3 of that Act

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] *cooperative research centers*;

(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.

Section 4 of that Act

SEC. 4. DEFINITIONS.

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

(1) "Office" means the Office of [Industrial Technology] *Productivity, Technology, and Innovation* 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], *"Assistant Secretary" means the Assistant Secretary for Productivity, Technology, and Innovation* appointed pursuant to section 5 of this Act.

(4) "Centers" means the [Centers for Industrial Technology] *Cooperative Research Centers* 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] (6) "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] *owned, leased, or otherwise used by a Federal agency and funded* by the Federal Government, whether operated by the Government or by a contractor.

[8] *(7)* "Supporting agency" means either the Department of Commerce or the National Science Foundation, as appropriate.

(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.".

Section 5 of that Act

SEC. 5. COMMERCE AND TECHNOLOGICAL INNOVATION.

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

(b) [DIRECTOR] *ASSISTANT SECRETARY.*—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.] *an Assistant Secretary for Productivity, Technology, and Innovation.*

(c) DUTIES.—The Secretary, through [the Director] *the Assistant Secretary,* 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 development 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] *the Assistant Secretary* 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 *as then in effect* and recommendations for possible modifications thereof.

Section 6 of that Act

[SEC. 6. CENTERS FOR INDUSTRIAL TECHNOLOGY.] *SEC. 6. COOPERATIVE RESEARCH CENTERS.*

(a) ESTABLISHMENT.—The Secretary shall provide assistance for the establishment of [Centers for Industrial Technology] *Cooperative Research Centers.* 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)–(d) * * *

[(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 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.]

(e) RESEARCH AND DEVELOPMENT UTILIZATION.—In the promotion of technological innovation and commercialization of research and development efforts by Centers under this section, chapter 18 of title 35, United States Code, shall apply.

(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.

Section 8 of that Act

SEC. 8. NATIONAL SCIENCE FOUNDATION [CENTERS FOR INDUSTRIAL TECHNOLOGY] *COOPERATIVE RESEARCH CENTERS*

(a) ESTABLISHMENT AND PROVISIONS.—The National Science Foundation shall provide assistance for the establishment of [Centers for Industrial Technology] *Cooperative Research Centers*. 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)–(c) * * *

Section 9 of that Act

SEC. 9. ADMINISTRATIVE ARRANGEMENTS.

(b)–(c) * * *

(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] *10, or 14* of this Act before funds are committed to such program in order to mount complementary efforts and avoid duplication.

Section 10 of that Act

[SEC. 10. NATIONAL INDUSTRIAL TECHNOLOGY BOARD.

[(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 of such Board, and may be reimbursed for actual and reasonable expenses incurred in the performance of such duties.]

Section 11 of that Act

[11.] *16.* UTILIZATION OF FEDERAL TECHNOLOGY.

(a) POLICY.—*(1.)* 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 fed-

erally owned or originated technology to State and local governments and to the private sector.

(2) 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) 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] *200 or more full-time scientific, engineering, and related technical positions shall provide one or more full-time equivalent positions* 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 Office of Research and Technology Applications. The agency head may waive the [requirements set forth in (1) and/or (2) of this subsection] *requirement set forth in clause (2) of the preceding sentence.* If the agency head waives [either requirement (1) or (2)] *such requirement,* 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;]

(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;";

(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] *the National Technical Information Service, the Federal Laboratory Consortium for Technology Transfer,* and other organizations which link the research and development resources of that laboratory and the Federal Gov-

ernment 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.] *to State and local government officials; and*

(5) to participate, where feasible, in regional, State, and local government 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.

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—] *(d) DISSEMINATION OF TECHNICAL INFORMATION.—The National Technical Information Service shall—*

(1) serve as a central clearinghouse for the collection, dissemination and transfer of information of federally owned or orignated 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)] *(2)* 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;] *(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;*

[(5)] *(4)* provide funding, at the discretion of the Secretary, for Federal laboratories to provide the assistance specified in subsection [(c)(4)]*(c)(3);* and

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

(e) ESTABLISHMENT OF FEDERAL LABORATORY CONSORTIUM FOR TECHNOLOGY TRANSFER.—(1) There is 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, at the laboratory level, for requests 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 a response to such requests can be made with published information available to the National Technical Information Service, refer such requests to that Service; and

(ii) otherwise refer such 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, such as technical volunteer services, for the purpose of providing technical assistance to communities related to such laboratory; and

(H) facilitate communication and cooperation between Offices of Research and Technology Applications of Federal laboratories and regional, State, and local technology transfer organizations.

(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) Not later than 1 year after the date of the enactment of this subsection, and every year thereafter, the Chairman of the Consortium 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 (6), concerning the activities of the Consortium and the expenditures made by it under this subsection during the year for which the report is made.

(6)(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 of the Consortium for the purpose of carrying out activities of the Consortium under this subsection.

(B) A transfer may 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 consider appropriate.

[(e)] *(f)* 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**]** *Secretary* by November 1 of each year in which it is due.

(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 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 enactment of this subsection, and every 2 years thereafter, the Secretary shall submit a 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, to the extent permitted by law, provide the Secretary with all information necessary to prepare such reports.

SEC. 11. COOPERATIVE RESEARCH AND DEVELOPMENT AGREEMENTS.

(a) GENERAL AUTHORITY.—(1) Each Federal agency may permit the director of any of its Government-operated Federal laboratories—

(A) to enter into cooperative research and development arrangements (subject to such regulations or review procedures as the agency considers appropriate) with other Federal agencies, units of State or local government, industrial organizations (including corporations, partnerships and limited partnerships), public and private foundations, non-profit organizations (including universities), or other persons (including licensees of inventions owned by the Federal agency); and

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

(2) Under arrangements entered into pursuant to paragraph (1), a laboratory may—

(A) accept funds, services, and property from collaborating parties and provide services and property to collaborating parties;

(B) grant or agree to grant in advance to a collaborating party patent licenses, assignments, or options thereto, in any invention made by a Federal employee under the arrangement, retaining such rights as the Federal agency considers appropriate;

(C) waive, in whole or in part, any right of ownership which the Government may have under any other statute to any inventions made by a collaborating party or employee of a collaborating party under the arrangement; and

(D) to the extent consistent with any applicable agency requirements, 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.

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

(b) DEFINITION.—As used in this section, the term—

(1) "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 provides personnel, services, facilities, equipment, or other resources (but not funds to non-Federal parties) and the non-Federal parties provide funds, personnel, services, facilities, equipments, or other resources toward the conduct of specified research or development efforts which are consistent with the missions of the agency, 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) "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 and development by employees of the Federal Government.".

(c) RELATIONSHIP TO LAWS.—Nothing in this section is intended to limit or diminish existing authorities of any agency.

SEC. 12. REWARDS FOR SCIENTIFIC, ENGINEERING, AND TECHNICAL PERSONNEL OF FEDERAL AGENCIES.

(a) CASH AWARDS PROGRAM.—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 applications or due to contributions to missions of the Federal agency or the Federal government; and

(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.

(b) PAYMENT OF ROYALTIES.—Any royalties or other income received by an agency from the licensing or assignment or inventions under this section or under section 207 of title 35, United States Code, or other authority shall be retained by the agency whose laboratory produced the invention, except that beginning with fiscal year 1988, such royalties or other income shall be subject to appropriations, and shall be disposed of as follows:

(1) At least 15 percent of the royalties or other income received each year by the agency on account of any invention shall be paid to the inventor or coinventors if they were employees of the agency at the time the invention was made. Payments made under this paragraph are in addition to the regular pay of the employee and to any awards made to that employee, and such payments shall not affect the entitlement or limit the amount of the regular pay, annuity, or other awards to which the employee is otherwise entitled or for which the employee is otherwise eligible.

(2) The balance of any royalties or related income earned during any fiscal year after paying the inventors' portions under paragraph (1) shall be transferred to the agency's Government-operated laboratories with a substantial percentage being returned to the laboratories whose inventions produced the royalties or income. Such royalties or income may be retained by the laboratory up to the limits specified in this paragraph, and used—

(A) for mission-related research and development of the laboratory;

(B) to support development and education programs for employees of the laboratory;

(C) to reward employees of the laboratory for contributing to the development of new technologies and assisting in the transfer of technology to the private sector, and for inventions of value to the Government that will not produce royalties;

(D) to further scientific exchange to and from the laboratory; and

(E) for payment of patenting costs and fees and other expenses incidental to promoting, administering, and licensing inventions, including the fees or costs for services of other agencies or other persons or organizations for invention management and licensing services.

If the balance for any laboratory after paying the inventors' shares under paragraph (1) exceeds 5 percent of the annual budget of the laboratory, 75 percent of the excess shall be paid to the Treasury of the United States and the remaining 25 percent shall be used for the purposes listed in subparagraphs (A) through (E), by the end of the fiscal year subsequent to the one in which they were received. Any funds not so used or obligated by the end of such fiscal year shall be paid to the Treasury of the United States.

(c) ASSIGNED INVENTIONS.—If the invention was one assigned to the agency either (1) by a contractor, grantee, or the recipient of a cooperative agreement of the agency, or (2) by an employee of the agency that was not working in the laboratory at the time the invention was made, the agency unit that funded or employed or assigned the assignee shall, for purposes of this section, be considered to be a laboratory.

(d) REPORTS.—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.".

SEC. 13. 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 may 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 or have practiced the invention 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.

Section 12 of that Act

SEC. [12] *14.* NATIONAL TECHNOLOGY MEDAL.

(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 recommen-

dations 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.

Section 13 of that Act

SEC. [13] *15.* 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.

Section 14 of that Act

SEC. [14] *16.* 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, 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.

Section 15 of that Act

SEC. [15] *17.* 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.

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SUMMARY: On June 22, 1984, the Occupational Safety and Health Administration (OSHA) published a final standard for ethylene oxide (EtO) (29 CFR 1910.1047, 49 FR 25734). This rule was transmitted to the Office of Management and Budget (OMB) for review and clearance of the information collection requirements contained in the final rule, in accordance with the Paperwork Reduction Act of 1980, 44 U.S.C. 3501 *et seq.* and 5 CFR Part 1320. The information requirements contained in the EtO final rule, paragraphs (a)(2), (d), (e), (f)(2), (g)(3), (h), (i), and (j), of § 1910.1047, have now received OMB paperwork clearance, and have been assigned OMB clearance number 1218-0108. The OMB clearance expires January 31, 1986.

The above mentioned paragraphs in the EtO rule are therefore effective as of the date of publication of this notice in the Federal Register. Start-up dates in paragraph (m)(2) are to be calculated from the effective dates of the various provisions of the final rule.

EFFECTIVE DATE: March 12, 1985.

FOR FURTHER INFORMATION CONTACT: Mr. James Foster, Occupational Safety and Health Administration, Office of Public Affairs, Room N 3641, U.S. Department of Labor, 200 Constitution Avenue, NW., Washington, D.C. 20210, Telephone (202) 523-8148.

SUPPLEMENTARY INFORMATION: OSHA published a proposed rule on EtO on April 21, 1983 (48 FR 17284) and adopted the final rule on June 22, 1984 (49 FR 25734). The final rule contained the following paragraphs which were determined by OMB to constitute information collection requirements under the Paperwork Reduction Act: (a)(2), Scope and application; (d), Exposure monitoring; (e), Regulated areas; (f)(2), Compliance program; (g)(3), Respirator program; (h), Emergency situations; (i), Medical surveillance; and (j), Communication of EtO hazards to employees. Paragraph (m)(1) of the final rule provided for an effective date for the standard of August 21, 1984. Paragraph (m)(2)(i) established a start-up date for compliance with all paragraphs, except engineering controls, within one-hundred and eighty (180) days after the effective date. The start-up date for implementation of engineering controls was established by paragraph (m)(2)(ii) to be one (1) year from the effective date.

However, as noted in the final rule at 49 FR 25734, the information collection provisions had not been cleared by OMB at that time. Accordingly, the effective dates for those requirements in the final EtO standard have remained in abeyance pending OMB paperwork clearance. OMB has now cleared the information collection requirements contained in § 1910.1047 under clearance number 1218-0108, through January 31, 1986. In accordance with that clearance, OSHA is hereby amending paragraph (m)(1) of the final EtO standard to establish a new effective date of March 12, 1985 for paragraphs 1910.1047 (a)(2), (d), (e), (f)(2), (g)(3), (h), (i), and (j). The time period provided after the effective date for compliance with these paragraphs (start-up dates) remains 180 days, the same as prescribed originally by paragraph (m)(2) of the EtO standard. That is, the start-up date for paragraphs (a)(2), (d), (e), (f)(2), (g)(3), (h), (i), and (j) is one-hundred and eighty days (180) from the new effective date, or September 9, 1985. Paragraphs not requiring OMB clearance went into effect on August 21, 1984, and, with the exception of implementation of engineering controls required by paragraph (f)(1), have a start-up date 180 days from that date, or February 19, 1985. These paragraphs include compliance with the 1 ppm TWA (paragraph (c)), institution of work practice controls (paragraph (f)(1)), and provision for and selection of respirators (paragraphs (g) (1) an (2)). The start-up date for implementation of engineering controls specified in paragraph (f)(1) is one year from its effective date, or August 21, 1985.

Authority

This document was prepared under the direction of Robert A. Rowland, Assistant Secretary of Labor for Occupational Safety and Health, 200 Constitution Ave., N.W., Washington, D.C. 20210.

This action is taken pursuant to sections 4(b), 6(b) and 8(c) of the Occupational Safety and Health Act of 1970 (84 Stat. 1592, 1593, 1599, 29 U.S.C. 653, 655, 657), Secretary of Labor's Order No. 9-83 (48 FR 35736) and 29 CFR Part 1911.

List of Subjects in 29 CFR Part 1910

Ethylene oxide, Occupational safety and health, Chemicals, Cancer, Health, Risk assessment.

Signed at Washington, D.C. this 4th day of March 1985.

Robert A. Rowland,
Assistant Secretary of Labor.

PART 1910—[AMENDED]

Part 1910 of Title 29 the Code of Federal Regulations is amended as set-forth below:

1. By revising paragraph (m) of § 1910.1047 to read as follows:

§ 1910.1047 Ethylene Oxide.

* * * * *

(m) *Dates*—(1) *Effective date.* The paragraphs contained in this section shall become effective August 21, 1984, except for paragraphs (a)(2), (d), (e), (f)(2), (g)(3), (h), (i), and (j) which shall become effective on March 12, 1985.

(2) *Start-up dates.* (i) The start-up date for the requirements in those paragraphs that were effective on August 21, 1984, including institution of work practice controls specified in paragraph (f)(1), shall be February 19, 1985, except as provided for in paragraph (m)(2)(ii), and the start-up date for paragraphs (a)(2), (d), (e), (f)(2), (g)(3), (h), (i), and (j) shall be September 9, 1985.

(ii) Engineering controls specified by paragraph (f)(1) of this section shall be implemented by August 21, 1985.

* * * * *

§ 1910.1047 [Amended]

2. By adding the following language at the end of § 1910.1047:

(Approved by the Office of Management and Budget under control number 1218-0108, through January 31, 1986)

[FR Doc. 85-5612 Filed 3-11-85; 8:45 am]
BILLING CODE 4510-26-M

DEPARTMENT OF COMMERCE

Assistant Secretary for Productivity, Technology and Innovation

37 CFR Ch. IV

[Docket No. 41277-4177]

Licensing of Government Owned Inventions

AGENCY: Commerce Department.

ACTION: Final rule.

SUMMARY: Pursuant to Pub. L. 98-620, which amended section 208 of Title 35, United States Code, authority to promulgate regulations concerning the licensing of Federally owned inventions has been shifted from the Administrator of General Services to the Secretary of Commerce. By this rule the Secretary is issuing final regulations which are identical in substance to and which supersede the regulations of GSA currently found at 41 CFR Subpart 101-4.1.

EFFECTIVE DATE: This rule is effective as of November 9, 1984, the effective date of Pub. L. 98–620. Suggestions for changes should be submitted by March 1, 1985.

FOR FURTHER INFORMATION CONTACT: Mr. Norman Latker, Director, Federal Technology Management Policy Division, Rm. H4835, Department of Commerce, Washington, D.C. 20230, Phone: (202) 377–0659.

SUPPLEMENTARY INFORMATION: To avoid any uncertainty as to applicable licensing procedures under section 208 of Title 35, United States Code, as amended by Pub. L. 98–620, we are adopting the following regulations, which are identical in substance to the GSA regulations that are superseded. The Department of Commerce will shortly be reviewing these regulations to determine if any changes are desirable. We welcome any suggestions for changes. It is the intent of the Department to issue a Notice of Proposed Rulemaking before revising these regulations.

This rulemaking relates to contracts and section 553(a)(2) of the Administrative Procedures Act provides an unqualified exclusion from every requirement of section 553 of the APA for all rules relating to "public property, loans, grants, benefits and contracts." 5 U.S.C. 553(a)(2). Therefore notice and comment and the 30 day delayed effective date are not required. The Regulatory Flexibility Act does not apply to this rulemaking because notice and comment are not required by 5 U.S.C. 553 or any other law. This rulemaking has no substantive effect, and consequently is not a major rule as defined in Executive Order 12291. The collection of information under this regulation has been approved by the Office of Management and Budget under GSA Control No. 3090–0108. A new Department of Commerce number will be assigned.

(35 U.S.C. 208)

List of Subjects 37 CFR Ch. IV

Inventions and patents.

Dated: March 6, 1985.

D. Bruce Merrifield,

Assistant Secretary for Productivity, Technology and Innovation.

Accordingly, a new Chapter IV is added to Title 37 of the Code of Federal Regulations consisting of Parts 400–403 which are reserved, and Part 404, to read as follows:

CHAPTER IV—ASSISTANT SECRETARY FOR PRODUCTIVITY, TECHNOLOGY AND INNOVATION, U.S. DEPARTMENT OF COMMERCE

PARTS 400–403 [RESERVED]

PART 404—LICENSING OF GOVERNMENT OWNED INVENTIONS

Sec.

Authority: 35 U.S.C. 208; and section 3(g) of DOO 10–1.

§ 404.1 Scope of part.

This part prescribes the terms, conditions, and procedures upon which a federally owned invention, other than an invention in the custody of the Tennessee Valley Authority, may be licensed. It supersedes the regulations at 41 CFR Subpart 101–4.1. This part does not affect licenses which (a) were in effect prior to July 1, 1981; (b) may exist at the time of the Government's acquisition of title to the invention, including those resulting from the allocation of rights to inventions made under Government research and development contracts; (c) are the result of an authorized exchange of rights in the settlement of patent disputes; or (d) are otherwise authorized by law or treaty.

§ 404.2 Policy and objective.

It is the policy and objective of this subpart to use the patent system to promote the utilization of inventions arising from federally supported research or development.

§ 404.3 Definitions.

(a) "Federally owned invention" means an invention, plant, or design which is covered by a patent, or patent application in the United States, or a patent, patent application, plant variety protection, or other form of protection, in a foreign country, title to which has been assigned to or otherwise vested in the United States Government.

(b) "Federal agency" means an executive department, military department, Government corporation, or independent establishment, except the Tennessee Valley Authority, which has custody of a federally owned invention.

(c) "Small business firm" means a small business concern as defined in section 2 of Pub. L. 85–536 (15 U.S.C. 632) and implementing regulations of the Administrator of the Small Business Administration.

(d) "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.

(e) "United States" means the United States of America, its territories and possessions, the District of Columbia, and the Commonwealth of Puerto Rico.

§ 404.4 Authority to grant licenses.

Federally owned inventions shall be made available for licensing as deemed appropriate in the public interest. Federal agencies having custody of federally owned inventions may grant nonexclusive, partially exclusive, or exclusive licenses thereto under this part.

§ 404.5 Restrictions and conditions on all licenses granted under this part.

(a)(1) A license may be granted only if the applicant has supplied the Federal agency with a satifactory plan for development or marketing of the invention, or both, and with information about the applicant's capability to fulfill the plan.

(2) A license granting rights to use or sell under a federally owned invention in the United States shall normally be granted only to a licensee who agrees that any products embodying the invention or produced through the use of the invention will be manufactured substantially in the United States.

(b) Licenses shall contain such terms and conditions as the Federal agency determines are appropriate for the protection of the interests of the Federal Government and the public and are not in conflict with law or this part. The following terms and conditions apply to any license:

(1) The duration of the license shall be for a period specified in the license agreement, unless sooner terminated in accordance with this part.

(2) The license may be granted for all or less than all fields of use of the

invention or in specified geographical areas, or both.

(3) The license may extend to subsidiaries of the licensee or other parties if provided for in the license but shall be nonassignable without approval of the Federal agency, except to the successor of that part of the licensee's business to which the invention pertains.

(4) The licensee may provide the license the right to grant sublicenses under the license, subject to the approval of the Federal agency. Each sublicense shall make reference to the license, including the rights retained by the Government, and a copy of such sublicense shall be furnished to the Federal agency.

(5) The license shall require the licensee to carry out the plan for development or marketing of the invention, or both, to bring the invention to practical application within a period specified in the license, and to continue to make the benefits of the invention reasonably accessible to the public.

(6) The license shall require the licensee to report periodically on the utilization or efforts at obtaining utilization that are being made by the licensee, with particular reference to the plan submitted.

(7) Licenses may be royalty-free or for royalties or other consideration.

(8) Where an agreement is obtained pursuant to § 404.5(a)(2) that any products embodying the invention or produced through use of the invention will be manufactured substantially in the United States, the license shall recite such agreement.

(9) The license shall provide for the right of the Federal agency to terminate the license, in whole or in part, if:

(i) The Federal agency 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;

(ii) The Federal 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;

(iii) The licensee has willfully made a false statement of or willfully omitted a material fact in the license application or in any report required by the license agreement; or

(iv) The licensee commits a substantial breach of a covenant or agreement contained in the license.

(10) The license may be modified or terminated, consistent with this part, upon mutual agreement of the Federal agency and the licensee.

(11) Nothing relating to the grant of a license, nor the grant itself, shall be construed to confer upon any person any immunity from or defenses under the antitrust laws or from a charge of patent misuse, and the acquisition and use of rights pursuant to this part shall not be immunized from the operation of state or Federal law by reason of the source of the grant.

§ 404.6 Nonexclusive licenses.

(a) Nonexclusive licenses may be granted under federally owned inventions without publication of availability or notice of a prospective license.

(b) In addition to the provisions of § 404.5, the nonexclusive license may also provide that, after termination of a period specified in the license agreement, the Federal agency may restrict the license to the fields of use or geographic areas, or both, in which the licensee has brought the invention to practical application and continues to make the benefits of the invention reasonably accessible to the public. However, such restriction shall be made only in order to grant an exclusive or partially exclusive license in accordance with this subpart.

§ 404.7 Exclusive and partially exclusive licenses.

(a)(1) Exclusive or partially exclusive domestic licenses may be granted on federally owned inventions three months after notice of the invention's availability has been announced in the Federal Register, or without such notice where the Federal agency determines that expeditious granting of such a license will best serve the interest of the Federal Government and the public; and in either situation, only if:

(i) Notice of a prospective license, identifying the invention and the prospective licensee, has been published in the Federal Register, providing opportunity for filing written objections within a 60-day period;

(ii) After expiration of the period in § 404.7(a)(1)(i) and consideration of any written objections received during the period, the Federal agency has 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;

(iii) The Federal agency has not determined 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; and

(iv) The Federal agency has given first preference to any small business firms submitting plans that are determined by the agency to be within the capabilities of the firms and as equally likely, if executed, to bring the invention to practical application as any plans submitted by applicants that are not small business firms.

(2) In addition to the provisions of § 404.5, the following terms and conditions apply to domestic exclusive and partially exclusive licenses:

(i) The license shall be subject to the irrevocable, royalty-free right of the Government of the United States to practice and have practiced the invention on behalf of the United States and on behalf of any foreign government or international organization pursuant to any existing or future treaty or agreement with the United States.

(ii) The license shall reserve to the Federal agency the right to require the licensee to grant sublicenses to responsible applicants, on reasonable terms, when necessary to fulfill health or safety needs.

(iii) The license shall be subject to any licenses in force at the time of the grant of the exclusive or partially exclusive license.

(iv) The license may grant the licensee the right of enforcement of the licensed patent pursuant to the provisions of Chapter 29 of Title 35, United States Code, or other statutes, as determined appropriate in the public interest.

(b)(1) Exclusive or partially exclusive licenses may be granted on a federally owned invention covered by a foreign patent, patent application, or other form of protection, provided that:

(1) Notice of a prospective license, identifying the invention and prospective licensee, has been published in the Federal Register, providing opportunity for filing written objections within a 60-day period and following consideration of such objections;

(ii) The agency has considered whether the interests of the Federal Government or United States industry in foreign commerce will be enhanced; and

(iii) The Federal agency has not determined 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.

(2) In addition to the provisions of § 404.5 the following terms and conditions apply to foreign exclusive and partially exclusive licenses:

(i) The license shall be subject to the irrevocable, royalty-free right of the Government of the United States to practice and have practiced the invention on behalf of the United States and on behalf of any foreign government or international organization pursuant to any existing or future treaty or agreement with the United States.

(ii) The license shall be subject to any licenses in force at the time of the grant of the exclusive or partially exclusive license.

(iii) The license may grant the licensee the right to take any suitable and necessary actions to protect the licensed property, on behalf of the Federal Government.

(c) Federal agencies shall maintain a record of determinations to grant exclusive or partially exclusive licenses.

§ 404.8 Application for a license.

An application for a license should be addressed to the Federal agency having custody of the invention and shall normally include:

(a) Identification of the invention for which the license is desired including the patent application serial number or patent number, title, and date, if known;

(b) Identification of the type of license for which the application is submitted;

(c) Name and address of the person, company, or organization applying for the license and the citizenship or place of incorporation of the applicant;

(d) Name, address, and telephone number of the representative of the applicant to whom correspondence should be sent;

(e) Nature and type of applicant's business, identifying products or services which the applicant has successfully commercialized, and approximate number of applicant's employees;

(f) Source of information concerning the availability of a license on the invention;

(g) A statement indicating whether the applicant is a small business firm as defined in § 404.3(c)

(h) A detailed description of applicant's plan for development or marketing of the invention, or both, which should include:

(1) A statement of the time, nature and amount of anticipated investment of capital and other resources which applicant believes will be required to bring the invention to practical application;

(2) A statement as to applicant's capability and intention to fulfill the plan, including information regarding manufacturing, marketing, financial, and technical resources;

(3) A statement of the fields of use for which applicant intends to practice the invention; and

(4) A statement of the geographic areas in which applicant intends to manufacture any products embodying the invention and geographic areas where applicant intends to use or sell the invention, or both;

(i) Identification of licenses previously granted to applicant under federally owned inventions;

(j) A statement containing applicant's best knowledge of the extent to which the invention is being practiced by private industry or Government, or both, or is otherwise available commercially; and

(k) Any other information which applicant believes will support a determination to grant the license to applicant.

§ 404.9 Notice to Attorney General.

A copy of the notice provided for in §§ 404.7(a)(1)(i) and 404.7(b)(1)(i) will be sent to the Attorney General.

§ 404.10 Modification and termination of licenses.

Before modifying or terminating a license, other than by mutual agreement, the Federal agency shall furnish the licensee and any sublicensee of record a written notice of intention to modify or terminate the license, and the licensee and any sublicensee shall be allowed 30 days after such notice to remedy any breach of the license or show cause why the license shall not be modified or terminated.

§ 404.11 Appeals.

In accordance with procedures prescribed by the Federal agency, the following parties may appeal to the agency head or designee any decision or determination concerning the grant, denial, interpretation, modification, or termination of a license:

(a) A person whose application for a license has been denied.

(b) A licensee whose license has been modified or terminated, in whole or in part; or

(c) A person who timely filed a written objection in response to the notice required by § 404.7(a)(1)(i) or § 404.7(b)(1)(i) and who can demonstrate to the satisfaction of the Federal agency that such person may be damaged by the agency action.

§ 404.12 Protection and administration of inventions.

A Federal agency may take any suitable and necessary steps to protect and administer rights to federally owner inventions, either directly or through contract.

§ 404.13 Transfer of custody.

A Federal agency having custody of a federally owned invention may transfer custody and administration, in whole or in part, to another Federal agency, of the right, title, or interest in such invention.

§ 404.14 Confidentiality of information.

Title 35, United States Code, section 209, provides that any plan submitted pursuant to § 404.8(h) and any report required by § 404.5(b)(6) 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.

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FEDERAL COMMUNICATIONS COMMISSION

47 CFR Part 73

[MM Docket No. 84-460; RM-4709]

FM Broadcast Stations, Lordsburg, NM; Change in Table of Assignments

AGENCY: Federal Communications Commission.

ACTION: Final rule.