UNIVERSITY AND SMALL BUSINESS PATENT PROCEDURES ACT

(This measure was laid before the Senate on February 5, 1980, and was set aside on February 6, under a unanimous-consent agreement that the Senate return to its consideration on or after February 18.)

The PRESIDING OFFICER. Under the previous order, the Senate will resume consideration of S. 414, which will be stated by title.

The assistant legislative clerk read as follows:

A bill (S. 414) to amend title 35 of the United States Code, to establish a uniform Federal patent procedure for small businesses and nonprofit organizations, to create a consistent policy and procedure concerning patentability of inventions made with Federal assistance, and for other purposes.

The Senate proceeded to consider the bill.

Mr. ROBERT C. BYRD. Mr. President, there will be rollcall vote on final passage of this measure. I ask for the yeas and nays on final passage.

The PRESIDING OFFICER. Is there a sufficient second? There is a sufficient second.

The yeas and nays were ordered.

Mr. ROBERT C. BYRD. Mr. President, may we have some indication as to when that rollcall vote will occur?

Mr. LONG. Mr. President, I have a statement here that I will take about 10 or 12 minutes.

Mr. ROBERT C. BYRD. Mr. President, I ask unanimous consent that the vote occur on the bill at 3:30 p.m. today or before if the time is yielded back.

Mr. LONG. I wish 15 minutes.

Mr. ROBERT C. BYRD. And Mr. LONG will have control over 15 minutes of the time.

Mr. DOLE. Mr. President, I am manager on this side and split the remainder.

Mr. ROBERT C. BYRD. All right. The other 25 minutes are to be equally divided between Mr. BAYH and Mr. DOLE.

Mr. BIDEN. And vote at 3:30?

Mr. ROBERT C. BYRD. We have 30 minutes and the vote to occur at 3:30 if the time is all taken.

The PRESIDING OFFICER. Without objection, it is so ordered.

Mr. DOLE. Mr. President, may we have order?

The PRESIDING OFFICER. If the Senator will suspend momentarily until the Senate comes to order, the Senate will please be in order.

AMENDMENT NO. 1652

(Purpose: To amend section 200 relating to the policies and objections to Chatper 18)

The PRESIDING OFFICER. The pending question is the amendment proposed by the Senator from Louisiana.

Who yields time?

Mr. LONG. Mr. President, how much time remains on both sides?

The PRESIDING OFFICER. This has been vitiated by the order just entered.

Mr. LONG. Then I have 15 minutes; is that correct?

The PRESIDING OFFICER. The Senator is correct.

Mr. LONG. I will speak on my time.

The PRESIDING OFFICER. The Senator may proceed.

Mr. LONG. Mr. President, the sponsors of S. 414 state that current Federal policy with respect to the allocation of rights to the results of federally sponsored research and development deters contractor participation in Government contracts, delays technological progress, stifles the innovative process and in one way or another will be a major factor in the decline in U.S. productivity.

During the many years I have studied this subject there has not been even a shred of evidence to support these claims.

DISPOSITION OF GOVERNMENT RIGHTS

The disposition of rights resulting from Government research and development can increase monopoly and the concentration of economic power or, alternatively, can spread the resulting benefits throughout society with consequent benefit to the maintenance of a competitive free enterprise system and more rapid economic growth.

Congress has always recognized these principles. Whenever it has spoken, it has always provided that the U.S. Government should acquire title and full right of use and disposition of scientific and technical information obtained and inventions made at its direction and its expense. Some cases are subject to waiver of Government title when the equities of the situation so require. The basic premise is that inventions should belong to those who pay to have them created. Congress has asserted on numerous occasions that title should be held by the United States for the benefit of all the people of the United States if made in the performance of a Government contract. Despite the vigorous opposition from industry groups and from the organized patent bar, Congress has applied this principle to the following agencies of Government:

The Atomic Energy Commission, the Department of Agriculture, the Tennessee Valley Authority, the National Aeronautics and Space Administration, the Office of Coal Research and Development, the Department of Health Education and Welfare, the Veterans' Administration. In addition, what came to be known as the Long amendment is an integral part of a host of laws, such as the Federal Coal Mine Health and Safety Act of 1969, the National Traffic and Motor Vehicle Safety Act, the Helium Act Amendment of 1960; the Solid Waste Disposal Act; the Disarmament Act; the Saline Water Act; the Solar Energy Act, and others. The purpose was to insure that no research would be contracted for, sponsored, cosponsored, or authorized under authority of a particular piece of legislation unless all information, uses, products, processes, patents, and other developments resulting from such research will be available to the general public. Only a few years ago, the late Senator Hart, Senator NELSON and I convinced the Senate that such a provision should be included in the Energy Research and Development Act.

PROPOSED LEGISLATION

It is dismaying, therefore to find that S. 414 provides for contractors, in this case small business firms, universities and nonprofit organizations, to receive gifts of ownership of taxpayer-financed research, and according to S. 414's chief sponsor, this is to be only a first step. The Congress and the public should not be fooled. The Senator from Indiana in his February 5, 1980 remarks appearing on page S960 of the RECORD admits "Passage of S. 414 will be a good first step." An enthusiastic sponsor of this proposal, Senator THURMOND, notes in his statement of February 6, 1980, appearing on page S1039, that although he is sympathetic to expansion of this giveaway to large businesses, "any expanded coverage of S. 414 will result in it being killed in the House."

S. 414 applies not only to those areas uncovered by legislation but it also seeks to weaken and ultimately repeal every law on the books which reserves for the public the results of the research it pays for.

It aims at the ultimate repeal of the provisions of the Atomic Energy Act.

It aims at the repeal of the provisions of the National Aeronautics and Space Act.

It aims at the repeal of the provisions of the Department of Agriculture, of TVA, of Department of Interior, in the National Science Foundation, Disarmament Agency, Energy Research and Development Agency, Consumer Product Safety Agency and every other piece of legislation enacted by Congress to protect the public.

In addition—and this is especially startling—once the monopoly is given to the contractor, the public will be unable to find out what has happened to the results of the research it paid for. The bill provides:

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

So what it amounts to is this: Not only will the contractor get the 17 year monopoly of the patent but the public can not even find out what has been discovered with its money for many years.

It takes an average of 3½ years to secure a patent, and this means that new scientific and technological information could well be suppressed for a long time.

IMPLICATIONS OF PROPOSED LEGISLATION

In the United States, patents have traditionally been held out as an incentive "to promote the progress of science and the useful arts"—an incentive to private persons, willing to assume the necessary risks to earn the stipulated reward. They were never intended to reward persons who perform research at someone else's expense as part of a risk-less venture. Therefore, as Prof. Wassily Leontief, a Nobel laureate, points out, to allow contractors to retain patents on research financed by and performed for the Government "is no more reasonable or economically sound than to bestow on contractors who build a road financed by public funds, the right to collect tolls from cars that will eventually use it" or the right to close down the road altogether.

Extensive hearings held by the Small Business Committee's Monopoly Subcommittee while I was its chairman and then under Senator NELSON's chairmanship, inevitably lead to the conclusion that the provisions of S. 414 and similar bills are deleterious to the public interest. Witnesses at these hearings, which started as far back as December 1959, included distinguished economists, a Deputy Attorney General of the United States, an Assistant Attorney General in charge of the Antitrust Division of the Justice Department, two chairmen of the Federal Trade Commission and former staff members of the Council of Economic Advisors.

Without any exception these witnesses testified that when a private company finances its own research and development, it takes a risk and deserves exclusive right to the fruits of that risk. Government research and development contracts, however, are generally cost-plus with an assured market—the U.S. Government. There is, thus, absolutely no reason why the taxpayer should be forced to subsidize a private monopoly and have to pay twice: First for the research and development and then through monopoly prices. When a contractor hires an employee or an agent to do research for him, the standard common law rule is that the contractor gets the invention. Surely the Government should have no less a right.

In addition to the problem of equity, economic growth and increased productivity require the most rapid dissemination of scientific and technical knowledge. Allowing private firms to file private patents would do just the opposite.

If a policymaking technological advances available to all without charge were adopted and maintained for a considerable period, other things being equal, it would make a positive contribution to the efficiency of the economic system and the rate of growth, according to Dr. Lee Preston.

Nobel prize winner Dr. Wassily Leontief, to whom I previously referred the developer of the input-output techniques and analysis, testified in 1963 that a Government-wide policy whereby the results of research financed by the public would be freely available to all would increase the productivity of labor and capital, and estimated that the difference between restrictive (allowing the contractor to retain title) and open patent policies should account for one half of 1 percent in a 4–5 percent growth rate of the average productivity of labor. "I have no doubt," he stated, "that an open door policy in respect to inventions resulting from work done under governmental contract would speed our technological progress considerably."

John H. Shenefield, Assistant Attorney General, Antitrust Division, Department of Justice and Michael Pertschuk, Chairman of the Federal Trade Commission, categorically stated in December 1977 that there is no factual basis for the claims that giving away title to private contractors promotes commercialization of Government-financed inventions and that the available evidence shows just the opposite. They also stated that even if an exceptional circumstance arises—and no specific example could be found—that would justify a waiver of the Government's rights, it should never be done unless the invention has been identified and a study made of the impact of the waiver on the public interest. In addition, such proposals as "march-in rights" would be ineffective and valueless to protect the public against misuse.

At the same hearing in December 1977, Stanley M. Clark, chief patent counsel of the Firestone Tire and Rubber Co., said that:

> I believe in free enterprise and in a competitive system. But the proposal that the Government spend large sums of money for research and development and then hand the patents stemming from such research over to the private contractors is not consistent with free enterprise.
>
> Some have told you and will tell you that unless the research contractors are given title to patents which are produced at Government expense, the contractors will not accept Government research and development contracts. Don't you believe it.

This is a spokesman for a very large company speaking. Continuing:

> They want those Government funds and the rewards and advantages that come with such contracts and they won't turn them down. What they get, in many instances, can be very rewarding even without the patents; and in any event there are no risks involved; the Government assumes all of those.

This bill (S. 414) does not deal with patent problems at all; it is not concerned with the mechanics of securing a patent or the administration of the Patent Office. It involves simply the disposition of public funds—about $30 billion at present—and it is dismaying to find that the same old claims—discredited years ago—to justify the giveaway of the public's rights are still being made today.

S. 414 would wipe out every law on the books which reserves for the public the results of the research it pays for, at the expense of billions of dollars.

It would hamper the rapid dissemination of scientific and technological information and hence will retard economic growth and increased productivity.

This bill, which sets an unfortunate precedent and other bills which are sure to follow, would promote monopoly and concentration of economic and political power.

This proposed legislation is one of the most radical, far-reaching giveaways that I have seen in the many years that I have been a Member of the U.S. Senate.

I hope the Senate will vote against this bill.

Mr. DOLE. Mr. President, as we resume debate on S. 414, the University and Small Business Patent Procedures Act, I would like to review some of the points that have been made during previous discussions of this legislation.

In support of this bill Senator SCHMITT referred to the Department of Defense and the National Aeronautics and Space Administration as examples of two Government agencies that had effective, reasonable, patent policies. The Senator from Kansas cannot overemphasize the fact that these two agencies are the exceptions. In general, the patent policies that govern the area of Federal research have been ineffective, unreasonable and had disastrous results. It might be useful to examine some of the reasons that contribute to the success of the patent policies of these two agencies.

NASA AND THE DEPARTMENT OF DEFENSE

The Department of Defense adheres to a policy of relinquishing patent rights in favor of the contractors, while NASA uses a waiver policy. That waiver policy is similar to institutional patent agreements—or IPA's—that were used successfully for a while by HEW, until they were arbitrarily abolished. IPA's are still used by the National Science Foundation. IPA's give universities the option to retain title at the time of grant, with the right to grant exclusive licenses for a limited period. IPA's are credited with the fact that a record 75 medical inventions reached the public, between 1968 and 1977, when HEW used IPA's. Among these 75 medical inventions are the rabies vaccine and the silver sulphur diazine treatment of burns. Following the policy change that occurred at HEW in 1977, no less than 29 medical inventions failed to be processed within the next 2 years. Thus, a revolutionary blood test for the detection of breast cancer, and potential cures for hepatitis and arthritis became the casualties of bureaucratic caprice. This example illustrates an important problem. The policies of the Department of Defense, the waivers that are issued by NASA, and IPA's are all satisfactory with one major exception: Each was administratively created, and therefore subject to possible elimination on the basis of a change of administration, or even at the whim of a bureaucrat. This is precisely what happened in 1977 at HEW. This is precisely why this legislation is needed.

The success of the patent programs of the Department of Defense and of NASA, lies in part with the fact that both these agencies are primarily involved with procurement. This factor accounts for these agencies' interest in the development of the inventions they fund. From the outset, the goal of the research is a usable product. This is not the case with other Government agencies' research. Other agencies stop short of taking the necessary steps to guarantee that development and marketing take place. Therefore the

result is that only about 5 percent of all federally-funded research is actually used.

In the past Congress has had many concerns with previous patent legislation. Fear of monopolies, and the belief that the Government should not "give away" the patent rights for which it paid were two of the primary issues. S. 414 is a determined effort to solve a serious problem that exists, without the Government "giving away" its patent rights or contributing to the growth of monopolies. March-in-rights diffuse the danger of monopolies. The Government payback provision guarantees that the Government's investment, paid for by the taxpayers of this country, is returned to the Federal coffer. The incentive provision for private industry for the development of inventions, is designed to insure that the American public gets a return on the investment that has been made in research.

The Senator from Kansas feels compelled to reiterate the fact that when Federal research money fails to result in the production of items that can be used by the consumer, in essence, the Government has broken its commitment to the American people, since our citizens could be reaping a significant return on the investment of their tax dollars.

S. 414 meets the objectives that were enumerated by President Carter. In his 1979 state of the Union to Congress, the President urged a "reduction in Government interference" so that the "American economic system (is) given a chance to work."

The Senator from Kansas wishes to stress the importance of this legislation in terms of increase in productivity, increase in technology transfer—two concepts that would result in jobs and decreasing the inflation rate. I urge my colleagues to support S. 414.

Mr. BAYH addressed the Chair.

The PRESIDING OFFICER (Mr. BAUCUS). The Senator from Indiana.

Mr. BAYH. Mr. President, over the past several months, with increasing intensity, the Members of the Senate, the Congress, the Government, and various financial and economic leaders throughout the Nation have become increasingly concerned about the health of the Nation's economy. Everyone is concerned about how we can decrease inflation, increase the rate of our gross national product and, basically, put America's economy in a better state of health.

Anyone who has examined the present condition carefully realizes that the doctor is not going to be able to prescribe just one pill and suddenly find a remedy to the various ills that confront the American economy.

However, most all of us are aware and convinced of the fact that one of the major goals this country has to accomplish is to increase its productivity. We are behind every other Western industrial nation in the world save Sweden in the growth rate of our productivity. Now, that is a sad commentary for the Nation that showed the whole world how to produce a better mousetrap.

The recent White House Conference on Small Business discussed this problem at some length not only from the perspective of the small business that were represented there but from the perspective of the national economy as a whole.

It was somewhat of a surprise to the Senator from Indiana that two of the major recommendations of that White House Small Business Conference were measures dealing with the need to dramatically revise the Nation's patent system. In fact, two of the top recommendations of this Small Business Productivity Subcommittee were this present bill and a patent reexamination bill that has already passed the Senate.

I suggest to my colleagues, and it is a difficult position to be in opposing my distinguished colleagues from Louisiana, that what we are talking about here is not only providing small businesses and universities a right to own patents, but we are talking about what we can do to start that long trip back up the ladder so that the United States can again be uncontested at the top where it should be.

Today we resume consideration of S. 414. This bill was unanimously reported out of the Judiciary Committee after careful consideration of its merits, and deserves the support of my colleagues at this time of lagging American innovation and productivity.

We no longer can afford to sit back and watch many of the results of our multibillion dollar research and development efforts wasting away because of bureaucratic red tape.

The bill addresses a serious and growing problem. Hundreds of valuable medical, energy, and other technological discoveries are sitting unused under Government control because the Government which sponsored the research that led to the discoveries lacks the resources necessary for development and marketing purposes, yet is unwilling to relinquish patent rights that would encourage and stimulate private industry to develop discoveries into products available to the public.

I see no benefit to be derived from the expenditure of the hundreds of millions of dollars we have spent in the discovery of the 28,000 patents that are presently drawing dust down at the Patent Office because no one wants to commercialize them. Discovering the idea is only the first step, an important step to be sure. But as long as that patent is not developed and made available in the marketplace, the public is receiving no benefits for the research money that has been expended in support of the invention.

The cost of product development exceeds the funds contributed by the Government by a factor of at least 10 to 1. This, together with the known failure rate for new products, makes the private development process an extremely risky venture which industry is unwilling to undertake without some incentive to justify this risk. Patents represent this incentive.

When Government agencies insist on taking away patent rights, this incentive is destroyed. The result has been that many promising inventions are left to gather dust on the shelves of our agencies because private industry will not develop and market them without patent rights.

It was interesting to the Senator from Indiana, as we held the hearings, to note the tremendous role that small businesses and universities play in developing new ideas. In fact, if one looks back from the end of World War II to the present date, a majority of all the new creative ideas have been made by either small businesses or universities. We also find small businesses providing most of the new jobs.

So we are talking about a factor in our economic health that cannot be ignored.

I was impressed, as we held the hearings, to actually talk to small business presidents, and to hear them testify about whether they would be willing to get involved in the Government-supported research.

The fact of the matter is there is a decreasing number of high technology small businesses, that are willing to get involved in Government research.

If you look at the percentage of Government research going to small businesses, it is going down. It may be well and good for a representative of a large corporation to try to represent what small businesses will do as far as Government research is concerned. But if you look at the record, the fact is that the percentage of research money going to small businesses is less than 4 percent. Small businesses do not want to get involved with the Government because they do not know whether they are going to get ownership of the inventions they make. They do not know whether there is going to be any profit at the end of the line. And they are deeply concerned about the ability of Government to go in and gain access and make public the background rights that they had before they even accepted the Government research.

So I must suggest that the record will show that small businesses have been kept out of Government research and that we are really cutting off a vast storehouse of innovation which is uniquely available in many of our small businesses and our university campuses.

Nowhere is this problem more disturbing than in the biomedical research programs. Many people have been condemned to needless suffering because of the refusal of agencies to allow universities and small businesses sufficient rights to bring new drugs and medical instruments to the marketplace.

For example, the Department of Health, Education, and Welfare routinely takes up to 15 months even to decide who should own patent rights to innovations made under its research. During this period, the invention is in limbo because no one knows who will finally own it. Many companies give up and simply look for other inventions because of this type of delay.

Senator DOLE and I have compiled a list of over 30 promising medical discoveries that have run into this problem.

I ask unanimous consent that those specific examples be printed in the RECORD.

There being no objection, the examples were ordered to be printed in the RECORD, as follows:

PETITIONS FOR INVENTION RIGHTS

Sponsoring Institute (NIH)	Date sent to General Counsel	Inventor and university	Invention
Employee—Bureau of Standards	Sept. 28, 1977	Cetas—University of Arizona	Birefringement crystal thermometer for measuring heat of cancerous tissue during electromagnetic-wave treatment.
National Institute of Allergy and Infectious Diseases (NIAID).	Oct. 6, 1977	Remers/Kumar—University of Arizona	New mitomycin anticancer agents.
National Institute of General Medical Sciences (NIGMS), National Heart, Lung and Blood Institute (NHLBI).	Oct. 14, 1977	Powers—Georgia Institute of Technology	Compounds to treat emphysema and arthritis.
NIGMS	do	Fox—Columbia University	Aqueous mypertonic solution for treatment of burns.
NIGMS	Nov. 1, 1977	Everett—University of Houston	Apparatus and synthesis of film transfer characteristics.
NHLBI	Dec. 8, 1977	Normann—Baylor University	Remote monitoring of blood pumps.
NCI	Dec. 20, 1977	Goldstein—University of Texas	Hormone (thymosin) treatment of immune system diseases (cancer, arthritis, muscular dystrophy).
NCI	Dec. 29, 1977	Salmon/Hamburger—University of Arizona	Bioassay for the treatment of cancer.
NCI	Jan. 26, 1978	Townsend/Earl—University of Utah	Synthesis of anticancer compounds.
National Cancer Institute	Jan. 27, 1978	Pogell/McCann—Saint Louis University	Pamamycin—a new broad spectrum antibiotic.
National Institute of Dental Research (NIDR), Division of Research Resources (DRR).	Jan. 31, 1978	Latham/Georgiade—University of North Carolina	Appliance to be placed in the mouth of infants to correct bilateral cleft of the lip and palate.
NIAID, NHLBI	do	Goetzel/Austin—Harvard University	Synthetic therapeutic agents for anaphylaxis, asthma, etc.
NHLBI	Feb. 10, 1978	Mahoney—University of Colorado	Device to examine hemoglobins to detect abnormalities.
National Institute of Arthritis, Metabolism, and Digestive Diseases (NIAMDD).	Feb. 13, 1978	Walser—Johns Hopkins University	Salts of keto acids for purpose of alleviating hyperammonemia due to liver damage caused by such disorders as cirrhosis, hepatitis or genetic liver damage.
Employee	Feb. 28, 1978	Vurek—NIH employee	Measurement of Carbon dioxide in blood plasma for diagnostic purposes.
Do	April 5, 1978	Walker—NIH employee	Needle valve detent attachment for controlling cuff deflation during the taking of blood pressure.
NCI	April 7, 1978	Apple/Formica—University of California	Anticancer drug—Azetomicins.
NCI	April 11, 1978	Spiegelman—Columbia University	Method for detecting cancer.
NIGMS	April 20, 1978	Marshall/Rabinowitz—University of Miami	Synthetic carbohydrate-protein conjugates for extending conditions under which enzyme can be used in biochemical processes.
NCI	April 20, 1978	Farnsworth—University of Illinois	Anticancer drug—Jacaranone.
NCI	May 1, 1978	Turcotte—University of Rhode Island	Anticancer drug.
National Institute of Neurological and Communicative Disorders and Stroke.	May 8, 1978	Jobsis—Duke University	Method for noninvasive monitoring of oxygen sufficiency in human tissues and organs by infrared radiation.
NIGMS	May 24, 1978	Montalvo—Gulf South Research Institute	An invention to selectively measure substances in the blood to diagnose blood disorders.
NCI	May 26, 1978	Pettit/Ode—Arizona State University	Anticancer drug.
Employee	June 21, 1978	Leighton—Employee	Intracranial pressure gage.
NCI	June 29, 1978	Kuehne—University of Vermont	A method for synthetically preparing a useful naturally occurring substance. The natural substance is used in making a drug for treatment of high blood pressure.
NICHD	July 17, 1978	Gray—Illinois Institute of Technology	Prolong release of antifertility drugs.
NCI	do	Gosalvez—University of Madrid	Novel anticancer compounds—analogs of adriamycin.

Mr. BAYH. Mr. President, I might point out, for example, a new burn ointment and a promising diagnostic test for cancer which can detect whether a given patient will have an adverse reaction to certain kinds of chemotherapy agents without having to go through that traumatic experience of hair loss and convulsions and some of the unfortunate reactions to those drugs that are used to fight cancer.

It is also interesting to note that the Government owned the rights to penicillin and tried to make it available to private industry for 11 years without patent rights—11 years. During this long period, there were no takers. If it had not been for the emergency conditions caused by World War II, in which the Government actually got into the business of developing penicillin itself, it is likely that penicillin would still be there with the 28,000 other patents that are just collecting dust and people would not be benefiting from that tremendous lifesaving discovery.

The Senate Judiciary Committee held extensive hearings on this bill. Indeed, the Senate Small Business Committee has recently looked into this and has reached the same conclusion.

I would like to suggest that the chairman of the Small Business Committee, Senator NELSON, is a supporter of this particular measure and, although he was called away on official business elsewhere, I would like to have the record show that had he been here he would have voted for it.

The committee heard many examples of the need for this. I would like to point out that the Comptroller General of the United States, Mr. Elmer B. Staats, testified forcefully in favor of S. 414 because of the adverse effects of the confusion caused by the present patent policies. The Comptroller General testified that the present policies are not even consistent—the GAO had identified 20 different patent arrangements in place in the various agencies. And that has to be stopped.

The present policies were originally based on the presumption that the agency would retain ownership of any patent that came from its reported research even when the agency had no intention or ability to develop and use it. This policy has proven to be so ineffective that it has been gradually revised since President Kennedy's Memorandum and State of Government Patent Policy issued in 1963.

I would like to point out that the bill which is presently before the Senate says that if the Government feels that a patent they supported is something that they want to develop in the name of the people of the United States, then they have a right to do it. We are not denying that right in S. 414. What we are saying is that if the Government makes the assessment that they do not intend to develop this idea, then let a small business or let a university have a chance to develop it and make that idea available to the people of the country in the marketplace.

The present burden of this patent policy confusion is placed primarily on universities—which are presently conducing 70 percent of the basic research in the country—and on small businesses. Because inventions made by these contractors are coming from basic research they do not represent marketable products and require substantial time and money before they are ready to be sold. It has been estimated that the cost of this product development exceeds the cost of initial research by a factor of 10 to 1. When Government agencies retain ownership to these inventions the result is simple—no one markets them because there is no incentive to do so without patent protection. The end result is that many promising inventions—especially medicines—are never delivered to the public. It should also be noted that the agencies are rarely funding 100 percent of this research but under present policies even if their share is a small percentage of the total funding the agency can insist on retaining patent rights.

S. 414 is based on the favorable experiences of the institutional patent agreement (IPA) program which has been in effect since 1968. These are agreements made with universities and nonprofit organizations that allow these contractors to retain patent ownership to the inventions that they make while working for the Government. This program has been so successful in delivering new products to the public that the General Services Administration adopted a rule making IPA's available to all agencies. There is absolutely no evidence of any economic concentration having resulted from this program—but there is impressive evidence that the IPA program has delivered many important medical discoveries to many suffering people.

S. 414 takes this very successful program and extends it to small businesses who are working for the Government. There is abundant evidence that greater economic competition will result from a closer relationship between our small businesses and the agencies. In those instances where the agency desires to fully

develop and use the patent the agencies will be able to retain ownership under the provisions of S. 414. The thrust of this bill is that in those instances where the Government cannot develop these products they should not be left to gather dust in some agencies' shelves; they should be left to the inventor so that they can reach their potential in the marketplace where the public can benefit from them.

S. 414 also includes a payback requirement that would require the reimbursement of the Government from the profits that a successful invention makes. No one is getting a free ride from this bill.

This concept has been endorsed by President Carter in his innovation speech of October 31, 1979, supported by the President Carter's Domestic Policy Review on Innovation and Productivity, has been endorsed by Mr. Ky P. Ewing, Deputy Assistant Attorney General, Antitrust Division in his testimony to the House Committee on Science and Technology, is supported by the Comptroller General of the United States, Mr. Elmer G. Staats, is supported by recent White House Conference on Small Business, the National Small Business Association, the Society of University Patent Administrators, and with the exception of Adm. Hyman Rickover by every witness who appeared—or asked to appear—before the Senate Judiciary Committee. It should be pointed out that every representative of a Government agency who has appeared before the Judiciary Committee, the Commerce Committee, or the House Science and Technology Committee has advocated revising the present policies because of their ineffectiveness.

It is for these reasons that I urge my colleagues to join me in supporting S. 414.

Mr. President, I ask unanimous consent that Senator NELSON's statement be printed in the RECORD.

The PRESIDING OFFICER. Without objection, it is so ordered.

STATEMENT BY SENATOR NELSON

I support S. 414. After careful consideration of this legislation and the arguments that have been made for and against it, it is my conclusion that the public interest would be served by its passage by the Senate and its enactment into law.

Before reviewing the contents of this bill, it would be useful to sketch out some of the underlying reasons why reform of federal patent ownership policy is urgently necessary. It is universally conceded that the United States is facing an unprecedented innovation and productivity crisis, which in turn is increasing our disastrous rate of inflation. The number of patents issued every year has gone down steadily since 1971. In 1979, almost 40 percent of the 55,418 patents issued by the U.S. Patent Office were issued to citizens of foreign countries. We invest less in research and development in constant dollars now than we did ten years ago. Last year, the productivity of our country actually declined by 1.1 percent. This deterioration in the economic position of the United States is one of the greatest dangers this country faces.

Although government patent policies are obviously not the sole cause of the problem, or even a primary cause of it, they do represent a serious impediment to the effective transferral of new technologies and discoveries from multi-billion dollar federal research and development efforts to the private sector where they can best serve the public interest. Today, the government retains title to nearly all new technologies and discoveries from government-sponsored research. Of the more than 28,000 patents in the government patent portfolio, less than 4 percent are successfully licensed.

Universities, on the other hand, which can offer exclusive or partially exclusive licenses on their patents if necessary, have been able to successfully license 33 percent of their patent portfolios.

What S. 414 will do is establish a presumption that universities and small businesses shall retain title to inventions they develop with government financial assistance. The bill would establish one uniform federal policy for all federal agencies, replacing the bewildering variety of title and licensing policies which now exist in different federal agencies.

Under S. 414, there would be exceptions to this general rule. If the funding agreement between an agency and a contractor related to the operation of a government-owned research facility or in "exceptional circumstances" or when a proper authority deemed it necessary to safeguard the confidentiality of intelligence activities, the government would be empowered to retain title to an invention. An "exceptional circumstances" determination would have to be forwarded to the Comptroller General for review, and the Comptroller General would be charged with the duty of reporting to the House and Senate Judiciary Committees concerning any perceived abuses of discretion.

Any funding agreement with a small business firm or nonprofit organization would have to contain appropriate provisions to protect the public interest. The existence of the invention must be made known to the federal agency involved. The decision to acquire title by the small business or nonprofit organization must be made within a reasonable time. The federal agencies may receive title to any inventions for which the contractor has not filed a patent application. Federal agencies may require periodic reporting by the contractor or his licensees on the utilization of the patent.

Assignment of rights under the patent is prohibited in most circumstances without the consent of the agency involved, and the granting of exclusive licenses to persons (including corporate persons) other than small business firms is generally prohibited for a period in excess of the earlier of five years from first commercial sale or use of the invention or eight years from the date of the exclusive license.

All federal agencies shall possess "march-in" rights, allowing them to require their title-holding contractor to grant any type of license of an invention if the contractor has not taken proper steps to achieve the "practical application" of the invention or when action is necessary to alleviate health or safety problems or when federal regulations specify public use requirements which are not being met by the contractor.

The bill contains meaningful "payback" requirements. The federal government will receive 15 percent of all the gross income over $70,000 obtained by a contractor from the licensing of an invention during a given calendar year. Further, the United States shall receive five percent of all income in excess of $1 million received by a contractor for sales of products making use of one or more of the subject inventions. In no event will the federal government receive back more money than it contributed to the development of the invention. If the invention proves valuable, the federal government will receive additional income tax revenues from increased contractor profits.

Finally, with elaborate safeguards, federal agencies are authorized by S. 414 to license federally-owned inventions on a non-exclusive, partially exclusive or exclusive basis.

Although I have had some reservations about this bill and the concepts it embodies, I have concluded it will help promote the utilization and commercialization of inventions made with government support and encourage the participation of smaller firms in the government research and development process.

Current patent policy is a major impediment to increased research and development by smaller firms. It has been well documented that an important ingredient missing in federal research and development programs is the large-scale participation of the small business community. A distressingly low percentage of federal research and development contracts are awarded to small companies. In fact, according to the Office of Management and Budget's study, "Small Business Firms and Federal Research and Development," only 3.4 percent of all federal R & D contracts go to small business.

The Small Business Committee has heard from a number of small business people who have said that the present government policies requiring them to give up patent rights to inventions made under federally-sponsored research is one of the greatest impediments to their participation in federal R & D efforts. But some policies go even further by requiring them to license their "background rights" to large business competitors who later work under federal R & D programs. Technological edges are the one advantage that small companies have, and when they are forced to license them out to competitors, their very ability to compete is fundamentally penalized.

There are several important objections which have been raised concerning this bill.

First, it is asserted that S. 414 would, under some circumstances, enable a single company to "monopolize" a product invented with the aid of public funds. This is a serious point. The granting of a patent or of an exclusive license is not the same thing as a 17th century "monopoly" but there is no question that it does grant to selected institutions a privileged position. It is the Committee's belief that the negative aspects of this grant of privilege are outweighed by the public benefits gained from the rapid development of inventions. It is undisputed that 96 percent of all federally-owned patents are not successfully licensed, i.e., the inventions sit on the shelf because nonexclusive licenses do not furnish sufficient incentive for any single company to take the financial and legal risks attendant on full development of an invention. Comptroller General Elmer Staats, whose devotion to the public interest is unquestioned, was particularly emphatic on this point during the hearings on the bill. In his testimony of May 16, 1979, Comptroller Staats stated:

"The proposed act would place initial responsibility for commercializing research results on the inventing contractor—the organization or individual with the most interest in and knowledge of the invention. It would provide the Government with "march-in" rights. These rights limit the administrative burden because they would be exercised only in specified situations, such as when the agency determines that the contractor has not taken effective steps to achieve practical application of the invention.

"Studies have shown that of the 8,000 inventions disclosed annually to the Government, only a handful attained commercial importance. It would be hoped that an easing of the redtape leading to determinations of rights in inventions would bring about an improvement of this record."

A related objection is that universities will invariably grant exclusive licenses to large companies for the development of inventions. However, the testimony before my Select Committee on Small Business indicated that universities generally prefer non-exclusive licenses because they are more lucrative to the universities and make use of exclusive licenses only when that is the only way to get inventions developed. I believe that we can trust universities to know what is in their own best interest and can rely on their judgment about the necessity for occasionally granting exclusive licenses.

In 1978 I held five days of hearings on existing Institutional Patent Agreements. I concluded that they generally served the public interest. For example, under current HEW time schedules, universities may issue exclusive licenses for a period of three years from the first commercial sale of a product or five years from the date of the license agreement, which ever occurs first, and most universities find this time schedule to be perfectly adequate. There is no reason to believe that under S. 414 universities and small businesses would make agreements more disadvantageous to themselves than universities now make under IPA's.

And the present public interest in granting universities title to inventions and the right to license them exclusively must be borne in mind. As is stated in the Committee Report:

"Agencies which acquire these patents generally follow a passive approach of making them available to private businesses for development and possible commercialization through non-exclusive licenses. This has proven to be an ineffective policy as evidenced by the fact that of the more than 28,000 patents in the Government patent portfolio, less than 4 percent are successfully licensed. The private sector simply needs more protection for the time and effort needed to develop and commercialize new products than is afforded by a non-exclusive license. Universities, on the other hand, which can offer exclusive or partially exclusive licenses on their patents if necessary, have been able to successfully license 33 percent of their patent portfolios."

Second, it is suggested that the problems of equity, economic growth and increased productivity require the rapid dissemination of scientific and technical knowledge, and the present patent policies better promote this dissemination than would S. 414. I must disagree.

The theoretical availability of a non-exclusive license does not mean that anyone will actually develop an invention into something useful. The fact remains that 96 percent of all federally-owned inventions, approximately 27,000 out of 28,000, are not licensed, and thus are of no use to the public. The huge majority of small business and university witnesses have testified that the option of exclusive licensing is necessary in order to achieve greater actual development of inventions. We do not now know for certain what would happen under S. 414. However, it is reasonable to assume that it will improve the situation.

Third, it is argued that there is no "factual basis" for the claim that giving private contractors title to inventions will promote rapid commercialization of those inventions. To this contention, there are, I think, two replies. First, private contractors do not now have title to inventions they make with federal assistance. So it is difficult to tell what would happen if they did. Second, the IPA experience with universities precisely indicates that the granting of title and exclusive licensing rights to private contractors does promote the rapid commercialization of inventions.

Fourth, it is maintained that there are potential dangers to small business in the bill. It is argued that if a small business were to possess patents or exclusive licenses, it might be an attractive takeover target. Further, it is maintained that small businesses might not be able to resist patent infringements by larger firms because of the high legal costs involved.

With all due respect to those who make them, these arguments do not strike me as being very weighty. Small business people overwhelmingly support this bill and are willing to take their chances with potential corporate raiders and patent infringers. This bill confers a benefit on small business, and it is not reasonable to oppose the bill because someone may attempt to illegally remove the benefit. Furthermore, the Senate has adopted S. 1679, which was sponsored by Senator Bayh, myself and others. This legislation will reduce the average patent litigation cost from $250,000 to $1,000.

Again, it is useful to return to the favorable experiences under the IPA program, which has been in effect since 1968. The IPA is a series of agreements made with universities and nonprofit organizations that allow these contractors to retain patent ownership to the inventions that they make while working for the government. This program has been so successful in deliverying new products to the public that the General Services Administration has adopted a rule making IPA available to all agencies. Five days of Small Business Committee hearings, which I chaired in 1978, failed to reveal evidence of any economic concentration having resulted from this program. While I agree that there is at least a theoretical potential for abuse, to date we have found none. If S. 414 becomes law, I intend to hold hearings on it after a reasonable period of time has elapsed, to see if any abuses do in fact result from its enactment.

Mr. President, the concepts embodied in S. 414 are part of the key recommendations of the President's Domestic Policy Review on Innovation. I would like to quote President Carter on what he said pertaining to issues relevant to this bill:

"The Policy Review identified strong arguments that the public should have an unrestricted right to use patents arising from federal sponsorship. These patents were derived from public funds, and all the public have an equitable claim to the fruits of their tax dollars. Moreover, exclusive rights establish a monopoly—albeit one limited in time—and this is an outcome not favored in our economy.

"Several competing considerations, however, urge that exclusive rights to such patents should be available. First, government ownership with the offer of unrestricted public use has resulted in almost no commercial application of federal inventions. Without exclusive rights, investors are unwilling to take the risk of developing a federal invention and creating a market for it. Thus, ironically, free public right to use patents results, in practical terms, in a denial of the opportunity to use the invention. Second, many contractors, particularly those with strong background in and experience with patents, are unwilling to undertake work leading to freely available patents because this would compromise their proprietary position. Thus, some of the most capable performers will not undertake the government work for which they are best suited. As a result of the strength of these considerations, most agencies have the authority in some circumstances to provide exclusive rights. But because of the difficulty of balancing competing considerations, this issue has been unsettled for over 30 years, and the various agencies operate under different and contradictory statutory guidance. The uncertainty and lack of uniformity in policy has itself had a negative effect on the commercialization of technologies developed with federal support."

I believe the President has fully and succinctly presented the issue before us, and I agree with the findings.

The bill has been endorsed by Mr. Ky P. Ewing, Deputy Assistant Attorney General, Anti-Trust Division, in testimony before the House Committee on Science and Technology. As noted above, it is supported by the Comptroller General of the United States, Elmer Staats, by the National Small Business Association, and by the Society of University Patent Administrators. Only last month, 1,600 delegates to the White House Conference on Small Business endorsed it as an integral component of S. 1860, the Small Business Innovation Act which I introduced last year. As a matter of fact, S. 1860 was the sixth highest priority of the conference delegates.

The problems of rising inflation and slumping productivity require immediate congressional attention. Passage of S. 414 will help spur innovation and new discoveries by small business. Smaller enterprises were responsible for half of all major industrial innovations since World War II and produced 24 times as many major innovations per research dollar spent as did large firms. As such, S. 414 will play a small, but important role in solving the inflation problem.

Our country is in deep economic trouble. Ideological rigidities should not prevent us from exploring new approaches to the problems of how we revive a stagnating economy. After a careful review of this legislation, I have concluded that S. 414 constitutes an approach worth trying, and I am pleased to support it.

The PRESIDING OFFICER. The Senator's time has expired.

The Senator from Kansas has 12 minutes remaining and the Senator from Louisiana has 1½ minutes remaining. Who yields time?

Mr. LONG. Mr. President, I ask unanimous consent to have printed in the RECORD a synopsis from Admiral Rickover, who has been very active on this subject down through the years.

There being no objection, the synopsis was ordered to be printed in the RECORD, as follows:

SYNOPSIS OF ADMIRAL RICKOVER'S VIEWS ON GOVERNMENT PATENT POLICY

1. In recent years, Members of Congress have introduced various bills which, contrary to the thrust of existing statutes, would give contractors the exclusive rights to inventions arising under their contracts with the U.S. Government. In support of these bills, the patent lobby contends that unless the Government grants its contractors such rights, companies will not have sufficient financial incentive to develop and market the ideas that grow out of Government-funded research.

2. Admiral Rickover has had more than a half century's experience in engineering, technology and contracting. For many years he has strongly opposed bills which would give contractors exclusive rights to inventions developed at Government expense. He believes that each citizen should have equal rights to use these inventions and that the monopoly rights conveyed by a patent should be reserved for those who develop inventions at private expense.

3. In support of his views, Admiral Rickover makes these points:

a. In the vast majority of cases, patent considerations neither attract companies to Government work nor repel them from it. Contractors seek Government work because it generates profit; it helps support their scientific and engineering staffs; and they obtain valuable know-how from performing the work. The idea that the Government cannot attract good companies without giving away patent rights is simply rhetoric by the patent lobby.

b. The technology growing out of most Government R&D efforts is not reflected by the patents generated, but is in the form of data, know-how, concepts, and design features which, although of great technical importance, generally are not patentable.

c. Truly good ideas arising under Government contracts tend to be adopted and used elsewhere without having to grant someone monopoly patent rights. Nuclear technology in this country has flourished under a policy in which Government contractors have not been given exclusive rights to inventions developed at public expense.

d. By generally claiming the rights to inventions their employees develop on the job, industry endorses a principle that patent rights should belong to the employer. But when the Government is the employer, and the contractor the employee, the patent lobby wants to reverse this principle.

e. Large corporations would benefit most from a giveaway Government patent policy because the vast majority of Government research and development funds is spent in contracts with large corporations.

f. It would be wrong to give a company a 17-year monopoly to some technological breakthrough, in the energy area, for example, that was paid for with public funds.

4. Based on this first-hand experience encompassing many years, Admiral Rickover contends that the dissemination of technology and the public good are both best served when the Government retains title to inventions developed at public expense and the public retains the unrestricted right to use them. Because of a proliferation of sometimes conflicting statutes dealing with patent matters, he recommends that Congress enact legislation which would ensure that each citizen has equal rights to use inventions developed at Government expense.

Mr. BAYH. Mr. President, I ask unanimous consent that the Senator from Indiana be permitted to use 2 minutes of the time of the Senator from Kansas, who is a cosponsor of this legislation.

The PRESIDING OFFICER. Without objection, it is so ordered.

Mr. BAYH. The Senator from Kansas has been an avid supporter of this legislation. I want to compliment him, as well as our other sponsors, for their assistance.

I have great sympathy with the thrust of the arguments of the Senator from Louisiana. I would just like to point out two of the factors in this bill that has not been contained in other provisions which goes to the question of the Government being fleeced and the taxpayers losing the dollars that they have invested. Let me just point out two things:

First of all, I do not see how the taxpayers benefit at all if money they spent in research results in ideas just drawing dust. The people have to get the idea commercialized and made available to them as new products before the taxpayers get any return on their investment.

The second point—and I think this is a new point that needs to be considered, and I think it goes to the concerns expressed by the distinguished gentleman, Admiral Rickover, who I have great faith and respect for. I just disagree with his logic on this point.

We have a formula in this bill that says when a small business or a university takes advantage of the provisions of S. 414, begins to market an idea, and that idea, begins to make money, then there is a formula in which the money is repaid to the agencies.

So, in the final analysis, the taxpayer will not be out the cost of the research and they also will have the benefit of the product.

I see my good friend from Kansas is here. He can express these ideas much better on his time than I can.

The PRESIDING OFFICER. The Senator from Kansas has 10 minutes remaining.

UP AMENDMENT NO. 1049

(Purpose: To exempt from the provisions of the bill the Tennessee Valley Authority)

Mr. BAYH. Mr. President, I send an amendment to the desk and ask for its immediate consideration.

The PRESIDING OFFICER. Is the amendment an amendment to the pending amendment?

Mr. LONG. Mr. President, is the pending amendment the amendment by the Senator from Louisiana?

The PRESIDING OFFICER. That is correct.

Mr. LONG. Mr. President, I withdraw my amendment so that Senator BAYH may offer his amendment.

The PRESIDING OFFICER. The Senator from Louisiana has withdrawn his amendment. The clerk will state the amendment of the Senator from Indiana.

The legislative clerk read as follows:

The Senator from Indiana (Mr. BAYH) proposes an unprinted amendment numbered 1049:

On page 27, line 5, insert ", other than the Tennessee Valley Authority," after "agency".

On page 41, line 4, insert ", other than inventions owned by the Tennessee Valley Authority," after "invention".

Mr. BAYH. Mr. President, what this does is to exempt TVA from the provisions of the bill inasmuch as TVA does not do their research with appropriated funds.

Mr. DOLE. Mr. President, the Senator from Indiana has correctly described the amendment.

Mr. President, I rise in support of the amendment that has been offered by Senator BAYH.

This amendment addresses the built-in characteristics of the Tennessee Valley Authority. Indeed, while S. 414 was never intended to apply to the TVA, which does not make use of Federal appropriations in funding their research and development, the bill's definition of funding agreements which reads as "any agreement entered into between * * *" (page 27, lines 3 and 4), was ambiguous since it did not mention the source of these funds. As we are all aware, even though the TVA is a Federal agency, their equipment is financed by floating funds from bonds on income they have earned by generating electricity.

The Tennessee Valley Authority, while not making use of appropriations, does however use Federal funds for in-house research by employees, for which the TVA has its own regulations. They expressed concern that section 208 of the bill, which authorizes the General Services Administration to promulgate regulations, might result in the TVA having to comply with GAO regulations.

Mr. President, this amendment would affirm the fact that S. 414 does not affect the present status of the Tennessee Valley Authority, and that the TVA will continue to be exempt from GSA regulations.

As a cosponsor of this worthwhile amendment, I urge my colleagues to support this effort.

Mr. BAKER. Mr. President, I am happy to see that the Committee on the Judiciary has accepted an amendment designed to enable the Tennessee Valley Authority to develop its own approach for implementing the requirements of S. 414, rather than subjecting it to the uniform regulations which would be developed under this legislation by the Office of Federal Procurement Policy and the General Services Administration. I am convinced that this amendment is necessary to preserve the flexibility and independence which TVA needs to continue to carry out its program responsibilities associated with these patents in an effective manner.

I am proud of the fact that some of the most effective Federal research and development work on the production and use of new and better fertilizers has been done by TVA at its National Fertilizer Development Center at Muscle Shoals, Ala. During the 47 years that TVA has been working at Muscle Shoals, TVA chemical engineers and agricultural research specialists have developed new technology which serves as a basis for the production of 75 percent of the fertilizer used by our Nation's farmers.

TVA owns all the patents for these processes—approximately 230—but, through simple procedures, has issued 622 nonexclusive, royalty-free licenses for the use of this TVA technology at 554 plants in 39 States. The best part about all this is that nearly three-quarters of these plants are owned by small businesses and local farmers' cooperatives.

TVA has been successful in this regard because it has been able to assess the commercial environment on a case by case basis and tailor the manner in which it grants licenses to achieve the fullest possible commercial acceptance and usage of TVA developed technology. I am uncertain whether this success story could continue, however, if these TVA practices were subjected to the uniform, Government-wide regulations developed by FFF and GSA to implement the requirements of S. 414. While these uniform regulations might be appropriate for the bulk of Federal agencies, they might actually increase the amount of bureaucratic paperwork and complexity of TVA's licensing process or otherwise be ill-suited or detrimental to TVA's programs.

I believe it would be inexcusable to risk the success of these highly efficient TVA technology transfer programs when there is no compelling reason to do so. In short, "if it ain't broke, don't fix it." I emphasize, however, that this amendment would not exempt TVA's patent-related activities from the uniform patent policy requirements of S. 414. The amendment simply enables TVA to implement these requirements in the manner most compatible with TVA's program needs.

Furthermore, TVA is not just involved with agricultural research and development. In carrying out President Carter's directive to be in a model in energy-related research and development, TVA is delving into many areas which promise to produce new important technologies which may provide us with better tools to help resolve our Nation's energy problems. Most of the funding for these activities does not come from the Nation's taxpayers, however, but is financed with funds of TVA's self-financing power program, which ultimately are provided by TVA customers when they pay their electric bills.

Given its statutory responsibility to the ratepayers in the Tennessee Valley to keep electric rates as low as feasible, in each of the wide variety of energy-related research and development agreements entered into by TVA an individual determination is made as to the ownership and rights of the parties to any patents which might result from the agreement. This determination is just one of

numerous business judgments the TVA Board must make in the course of operating the Nation's largest electric system in a cost-effective manner. TVA needs to continue to have this flexibility to manage the TVA power program efficiently.

This amendment exempts research and development contracts which involve the use of the nonappropriated funds of TVA's self-financing power system from the strict coverage of the provisions of sections 202 through 205 of S. 414. It is not appropriate to require in all cases that TVA contractors automatically receive title to all inventions which they develop under agreements funded with TVA power system funds.

Nor is it always appropriate for TVA to retain all of the "march-in" and other rights which the bill would require. In TVA's case, it is not uncommon for a business firm to spend its own money on developing a technology and coming to TVA only in the last stage of development to help prove its commercial feasibility in conjunction with the operations of the TVA power system. TVA's contribution in this instance may be relatively small. The business firm may be understandably reluctant to give up the rights this bill would require in such a situation. The net effect would be a reduction in the willingness of firms to try out new technology on the TVA system or to charge TVA more for doing it.

The requirements of the bill would not, therefore, function as an incentive financed by the Nation's taxpayers, but could be an added expense borne solely by the ratepayers of the Tennessee Valley region.

At the same time this amendment would require TVA to follow the provisions of section 202 through 205 of S. 414 with regard to its funding agreements funded with nonappropriated funds to the extent the TVA Board determines they are feasible and consistent with TVA's responsibilities under the TVA Act.

I believe this amendment to S. 414 would provide an effective and equitable approach to enable TVA to continue carrying out its programs in an efficient manner, and I urge its adoption.

The PRESIDING OFFICER. The question is on agreeing to the amendment.

The amendment was agreed to.

The PRESIDING OFFICER. The bill is open to further amendment.

Mr. DOLE. Mr. President, as I understand the consent agreement, we are to vote no later than 3:30, or prior to that time if possible.

The PRESIDING OFFICER. The Senator is correct.

Mr. DOLE. Mr. President, I have listened to some of the discussion today. I believe this bill is a small step in the right direction. I know some Members have concerns about the policy. I am aware of the concerns of the distinguished chairman of the Finance Committee, Senator LONG.

● Mr. STEVENSON. Mr. President, S. 414 is a test of the Senate's concern about America's capacity to produce and compete in a fiercely competitive world. It is not a panacea. It is, in truth, a small part of the solution. But if we are unable to address a problem that has been widely recognized for more than two decades, what can we do? Are we doomed to play out the conventional wisdom, as we did in the twenties, until its futility is inescapable and the moment too late?

Today there is scarcely an industrial sector or technology in which the United States does not face a vigorous challenge. For the United States to hold its own, let alone prosper, in this environment requires redoubled efforts to encourage investment, promote exports, and make economic adjustments, as well as to advance technology and stimulate innovation.

Instead, fiscal and monetary policies lurch from one month's Consumer Price Index and employment figures to the next, compounding economic uncertainty. We provided $1.5 billion in loan guarantees for the geriatric Chrysler Corp., as President Carter, after an 18-month study involving scores of agencies and hundreds of advisers, proposed a mere $55 million for industrial innovation. The new initiatives announced in the President's message to Congress on innovation last October actually cost $44.6 million. Now that pitiful sum has been whittled to $26.1 million in successive rounds of budget cutting. The victims of economic orthodoxy include National Science Foundation grants to industry-supported research in universities, grants to small businesses for innovative research and development, and an NSF-sponsored Cooperative Technology Center. Apart from this legislation and S. 1250, to authorize industrial technology centers, very little remains of the President's modest innovation package.

Mr. President, the University and Small Business Patent Procedures Act is far from an ideal bill. Witnesses in 4 days of hearings before the Commerce, Science, and Transportation Committee urged a uniform Government patent policy that did not discriminate on the basis of company size or institutional tax status. The Judiciary Committee report on S. 414 does not present any rationale for granting title to inventions only to small firms and nonprofit organizations. Small businesses do not account for our stagnant productivity, accelerating inflation, and eroding competitiveness in world markets. They continue to generate a large share of major inventions and innovations. Small businesses and universities are not alone in experiencing the disincentives and frustrations of restrictive Government patent policies. Even the administration has recommended comprehensive reform.

S. 414 will be difficult to administer rationally and fairly. It arbitrarily penalizes successful companies that cross the employment or sales limits of one or another of the Small Business Administration's sets of eligibility criteria, all of them devised to suit different administrative purposes.

The legislation discriminates against its proposed beneficiaries. If they are successful in commercializing or licensing their inventions, they will be required to pay back the Government contribution. Neither of these requirements is imposed by the Defense Department, which for many years has granted unrestricted title to contractors in more than two-thirds of military R. & D. contracts, a large proportion of them with the Nation's biggest corporations. Under this bill, DOD must recoup its expenditures from its smallest but not from its largest contractors.

S. 414 would maintain Government ownership of inventions made by a broad range of firms engaged in energy, transportation, and other civilian research and development enterprises whose success depends upon private commercialization of new technologies and for which the Nation's needs are pressing. The Federal research budget includes nearly $10 billion for civilian R. & D. Congress has authorized a massive investment in the development of synthetic fuels and is considering a cooperative program to advance automotive technology. We cannot afford inhibitory patent policies in these areas while we encourage companies to exploit military R. & D. results, routinely and without controversy.

Nonetheless, S. 414 is a small step in the right direction. It recognizes that, on the whole, a policy of granting exclusive rights in return for commercial development stands the best chance of securing the benefits of Federal R. & D. for the public and the economy. It extends the DOD precedent and brings us closer to a uniform patent policy. It gives small research firms a needed incentive to participate in Federal R. & D. programs and encourages the transfer of technology from university laboratories to commercial markets. For these reasons, I support the University and Small Business Patent Procedures Act.

I believe the limitations of S. 414 will soon become apparent, if they are not already apparent to the House committees considering similar legislation. I am confident that Senator SCHMITT and other members of the Commerce Committee will continue their leadership on this issue, and I suspect that many of the sponsors of this bill will support them. In the meantime, the Senate should pass S. 414.●

Mr. SCHMITT. Mr. President, I wish to commend the Senators from Indiana and Kansas for their able leadership on beginning the process toward a comprehensive Government-wide patent policy. The bill under consideration today, S. 414, is a worthwhile measure designed to stimulate the commercialization of inventions made by small business and universities with the assistance of Federal funds.

I recognize that the stated purpose of S. 414 is similar to that of my own bill, S. 1215, the Science and Technology Research and Development Utilization Policy Act, which has been referred to the Senate Commerce Committee. That committee has concluded 4 days of hearings on this bill and the general subject of Government patent policy. The testimony we received during the course of these hearings from industry, business—both large, small and medium size—and academia was overwhelming in support of a uniform Government patent policy that placed title in the hand of the contractor, subject to appropriate safeguards of the public interest.

While I support the basic objectives of S. 414, I am concerned that the bill does not go far enough. This bill would es-

tablish a uniform Federal patent policy for small business and nonprofit organizations. The bill would not extend the same rights to other Federal contractors with much greater quantitative impact on the marketing of new technologies. Undoubtedly, however, S. 414 would alleviate many of the special problems facing the important innovative sections of our national R. & D. base, namely, small business and universities.

Yet the problems this Nation is experiencing in technological innovation go well beyond small business and universities which together comprise but a small percentage of all Federal contracts. We cannot afford to ignore that segment of private enterprise consisting of medium-sized and larger businesses which account for 90 percent of our federally sponsored R. & D. effort, more than half of U.S. industrial employment, and 85 percent of U.S. exports.

My bill, S. 1215, would allow all contractors, regardless of size or profit status, to acquire title to their inventions made under Federal contracts while retaining the structure and essential provisions of S. 414. It is essential to achieve the widest possible application of Government-supported technology at a time of lagging innovation, stagnant productivity growth and declining U.S. competitiveness in the international and domestic marketplaces.

Mr. President, I continue to believe that S. 1215 is in the real public interest, and I am hopeful that when reported out of the Commerce Committee it will receive favorable consideration by the Senate as a whole.

● Mr. CANNON. Mr. President, the symbolic importance of S. 414 surpasses what I expect to be its practical benefits. At a time of grim economic statistics and even grimmer prospects, it is a test of the Senate's commitment to renewed productivity and economic growth through technological innovation.

Last year exports grew, the trade balance improved. But the United States continued to register huge deficits in steel, automobiles, and other so-called non-R. & D.-intensive manufactured goods. Our shipments of electrical machinery, aircraft, chemicals, and instruments have not prevented an overall trade deficit in manufactures in 4 of the last 9 years. Even our high technology surplus is slipping, and we have a growing deficit with Japan in electronic and other sophisticated products.

Growth in domestic output per worker in the United States—a key source of our economic growth in the early sixties—declined gradually after 1967, dropped sharply after 1973, and failed to revive in the 1975–78 recovery. Now U.S. productivity gains have come to a standstill. Last year labor productivity actually dropped by nearly 1 percent—only the second such decline since World War II. Other industrialized countries also experienced lower growth rates in the seventies, but none was as poor as ours. We trail all of our major trading partners, including Britain.

The solutions lie in increased investment in new plant and equipment, new products, and new firms. They lie in reform of economic regulation. They lie in cooperative efforts to develop new manufacturing technologies, as Senator STEVENSON and I propose in S. 1250, which the Commerce Committee will soon report to the Senate.

But in no small part the solution also lies in encouraging the widest possible use of Government-supported technologies, removing disincentives to participation in Federal R. & D. programs, and promoting cooperation rather than antagonism between Government and industry. Precisely because of tight budget and fiscal constraints, it is vital to move in the areas where we have flexibility.

As Senators are aware, when this bill was first considered by the Senate in February, I cosponsored an amendment to extend its provisions to all Government contractors in the interest of finally achieving a uniform Government patent policy. I believe that should remain the goal, and I note that several sponsors of S. 414 agreed in principle. It detracts nothing from the case for small business and university patent rights to observe that they perform a modest share of Federal R. & D. The Commerce Committee had held 4 days of hearings on comprehensive Government patent policy legislation introduced by Senator SCHMITT. With a single exception, our witnesses strongly endorsed the principle of allowing exclusive commercial use of Government-financed inventions as a necessary incentive, in most cases, to private development and commercialization. Overwhelmingly, they favored a policy of granting title to contractors without discrimination on the basis of size or tax statute. The risk of monopolization was judged to be minimal or nonexistent.

I recognize, however, the underrepresentation of small research companies in Federal R. & D. contracting in spite of their disproportionate contribution to industrial innovation generally. Commercial development of inventions made in university laboratories is especially dependent on their being available for licensing on attractive terms. Allowing these institutions to acquire title to their inventions builds upon the precedent followed by the Defense Department in nearly three-quarters of its R. & D. contracts and brings us closer to a uniform patent policy. For these reasons, I urge my colleagues to support the University and Small Business Patent Procedures Act.●

Mr. DOLE. Mr. President, I yield back any time I have remaining.

Mr. LONG. Mr. President, how much time remains?

The PRESIDING OFFICER. The Senator has 12 minutes remaining.

Mr. LONG. Mr. President, the arguments that have been made by the sponsors of this legislation——

The PRESIDING OFFICER. Does the Senator from Kansas yield to the Senator from Kansas yield to the Senator from Louisiana?

Mr. LONG. Mr. President, I meant to ask how much time I had remaining.

The PRESIDING OFFICER. The Senator from Louisiana has no time remaining.

Mr. DOLE. The Senator from Louisiana can have my time.

Mr. LONG. One minute, please.

The arguments made by the sponsor of this legislation are that you can develop a product better if someone has a monopoly than you can if it is in a competitive situation. Basically, Mr President, that is an argument that monopoly is better for the country than is competition. In my judgment it is ridiculous on the face of it.

The idea where the public spends tens of millions of dollars or maybe a hundred million dollars to develop a product and you can give someone a monopoly so he can charge anywhere from 10 to 100 times the cost of manufacturing the thing is ridiculous on the face of it. That is the mercantile theory, when the king would authorize someone to manufacture a product and nobody could compete.

If this Senate thinks that mercantilism is better than capitalism, let them vote for this bill. If they believe that competition is better than monopoly, then they ought to vote against the bill.

Mr. DOLE. The Senator from Kansas, on that note, will yield back the remainder of his time.

The PRESIDING OFFICER. All time has been yielded back. The bill is open to further amendment. If there be no further amendment to be proposed, the question is on agreeing to the committee amendment in the nature of a substitute, as amended.

The committee amendment in the nature of a substitute, as amended, was agreed to.

The PRESIDING OFFICER. The question is on the engrossment and the third reading of the bill.

The bill was ordered to be engrossed for a third reading and was read the third time.

The PRESIDING OFFICER. The bill having been read the third time, the question is, Shall it pass? On this question the yeas and nays have been ordered, and the clerk will call the roll.

The legislative clerk called the roll.

Mr. CRANSTON. I announce that the Senator from Idaho (Mr. CHURCH), the Senator from Massachusetts (Mr. KENNEDY), and the Senator from Wisconsin (Mr. NELSON) are necessarily absent.

Mr. BAKER. I announce that the Senator from Alaska (Mr. STEVENS) and the Senator from Wyoming (Mr. WALLOP) are necessarily absent.

The PRESIDING OFFICER (Mr. BURDICK). Have all Senators voted?

The result was announced—yeas 91, nays 4, as follows:

[Rollcall Vote No. 84 Leg.]

YEAS—91

Armstrong	Goldwater	Nunn
Baker	Gravel	Packwood
Baucus	Hart	Pell
Bayh	Hatch	Percy
Belimon	Hatfield	Pressler
Bentsen	Hayakawa	Proxmire
Biden	Heflin	Pryor
Boren	Heinz	Ribicoff
Boschwitz	Helms	Riegle
Bradley	Hollings	Roth
Bumpers	Huddleston	Sarbanes
Burdick	Humphrey	Sasser
Byrd, Robert C.	Inouye	Schmitt
Cannon	Jackson	Schweiker
Chafee	Javits	Simpson
Chiles	Jepsen	Stafford
Cochran	Kassebaum	Stennis
Cohen	Laxalt	Stevenson
Cranston	Leahy	Stewart
Culver	Levin	Stone
Danforth	Lugar	Talmadge
DeConcini	Magnuson	Thurmond
Dole	Mathias	Tower
Domenici	Matsunaga	Tsongas
Durenberger	McClure	Warner
Durkin	McGovern	Weicker
Eagleton	Melcher	Williams
Exon	Metzenbaum	Young
Ford	Morgan	Zorinsky
Garn	Moynihan	
Glenn	Muskie	

NAYS—4

Byrd, Harry F., Jr.	Johnston	Randolph
	Long	

NOT VOTING—5

Church	Nelson	Wallop
Kennedy	Stevens	

So the bill (S. 414), as amended, was passed, as follows:

S. 414

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 "University and Small Business Patent Procedures Act".

SEC. 2 (a) AMENDMENT OF TITLE 35, UNITED STATES CODE, PATENTS.—Title 35 of the United States Code is amended by adding after chapter 17, a new chapter as follows:

"CHAPTER 18. PATENT RIGHTS IN INVENTIONS MADE WITH FEDERAL ASSISTANCE

"Sec.
"200. Policy and objective.
"201. Definitions.
"202. Disposition of rights.
"203. March-in rights.
"204. Return of Government investment.
"205. Preference for United States industry.
"206. Confidentiality.
"207. Uniform clauses and regulations.
"208. Domestic and foreign protection of federally owned inventions.
"209. Regulations governing Federal licensing.
"210. Restrictions on licensing of federally owned inventions.
"211. Precedence of chapter.
"212. Relationship to antitrust laws.

"§ 200. Policy and objective

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

"§ 201. Definitions

"As used in this chapter—

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

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

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

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

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

"(f) The term 'practical application' means to manufacture in the case of a composition or product, to practice in the case of a process or method, or to operate in the case of a machine or system; and, in each case, under such conditions as to establish that the invention is being utilized and that its benefits are to the extent permitted by law or Government regulations available to the public on reasonable terms.

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

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

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

"§ 202. Disposition of rights

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

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

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

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

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

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

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

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

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

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

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

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

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

"(8) The requirements of sections 203, 204, and 205 of this chapter.

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

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

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

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

"§ 203. March-in rights

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

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

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

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

"(d) action is necessary because the agreement required by section 205 has not been obtained or waived or because a licensee of the exclusive right to use or sell any subject invention in the United States is in breach of its agreement obtained pursuant to section 205.

"§ 204. Return of Government investment

"(a) If after the first United States patent application is filed on a subject invention, a nonprofit organization, a small business firm, or an assignee of a subject invention of such an organization or firm to whom such invention was assigned for licensing purposes, receives $70,000 in gross income for any one calendar year from the licensing of a subject invention or several related subject inventions, the United States shall be entitled to 15 per centum of all income in excess of $70,000 for that year other than any such excess income received under nonexclusive licenses (except where the nonexclusive licensee previously held an exclusive or partially exclusive license).

"(b)(1) Subject to the provisions of paragraph (2), if after the first United States patent application is filed on a subject invention, a nonprofit organization, a small business firm, or an asignee of a subject invention of such an organization or firm, receives gross income of $1,000,000 for any one calendar year on sales of its products embodying or manufactured by a process employing one or more subject inventions, the United States shall be entitled to a share, the amount of which to be negotiated but not to exceed 5 per centum, of all gross income in excess of $1,000,000 for that year accruing from such sales.

"(2) In no event shall the United States be entitled to an amount greater than that portion of the Federal funding under the funding agreement or agreements under which the subject invention or inventions was or were made expended on activities related to the making of the invention or inventions less any amounts received by the United States under subsection (a) of this section. In any case in which more than one subject invention is involved, no expenditure funded by the United States shall be counted more than once in determining the maximum amount to which the United States is entitled.

"(c) The Director of the Office of Federal Procurement Policy is authorized and directed to revise the dollar amounts in subsections (a) and (b) of this section at least every three years in light of changes to the Consumer Price Index or other indices which the Director considers reasonable to use.

"(d) The entitlement of the United States under subsections (a) and (b) shall cease after (i) the United States Patent and Trademark Office issues a final rejection of the patent application covering the subject invention, (ii) the patent covering the subject invention expires, or (iii) the completion of litigation (including appeals) in which such a patent is finally found to be invalid.

"§ 205. Preference for United States industry

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

"§ 206. Confidentiality

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

"§ 207. Uniform clauses and regulations

"The Office of Federal Procurement Policy, after receiving recommendations of the Office of Science and Technology Policy, may issue regulations which may be made applicable to Federal agencies implementing the provisions of sections 202 through 205 of this chapter and the Office of Federal Procurement Policy shall establish standard funding agreement provisions required under this chapter.

"§ 208. Domestic and foreign protection of federally owned inventions

"Each Federal agency is authorized to—

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

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

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

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

"§ 209. Regulations governing Federal licensing

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

"§ 210. Restrictions on licensing of federally owned inventions

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

closure under section 552 of title 5 of the United States Code.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

"§ 211. Precedence of chapter

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

"(1) section 10(a) of the Act of June 29, 1935, as added by title 1 of the Act of August 14, 1946 (7 U.S.C. 427i(a); 60 Stat. 1085);

"(2) section 205(a) of the Act of August 14, 1946 (7 U.S.C. 1624(a); 60 Stat. 1090);

"(3) section 501(c) of the Federal Mine Safety and Health Act of 1977 (30 U.S.C. 951 (c); 83 Stat. 742);

"(4) section 106(c) of the National Traffic and Motor Vehicle Safety Act of 1966 (15 U.S.C. 1395(c); 80 Stat. 721);

"(5) section 12 of the National Science Foundation Act of 1950 (42 U.S.C. 1871(a); 82 Stat. 360);

"(6) section 152 of the Atomic Energy Act of 1954 (42 U.S.C. 2182; 68 Stat. 943);

"(7) section 305 of the National Aeronautics and Space Act of 1958 (42 U.S.C. 2457);

"(8) section 6 of the Coal Research Development Act of 1960 (30 U.S.C. 666; 74 Stat. 337);

"(9) section 4 of the Helium Act Amendments of 1960 (50 U.S.C. 167b; 74 Stat. 920);

"(10) section 32 of the Arms Control and Disarmament Act of 1961 (22 U.S.C. 2572; 75 Stat. 634);

"(11) subsection (e) of section 302 of the Appalachian Regional Development Act of 1965 (40 U.S.C. App. 302(e); 79 Stat. 5);

"(12) section 9 of the Federal Nonnuclear Energy Research and Development Act of 1974 (42 U.S.C. 5901; 88 Stat. 1878);

"(13) section 5(d) of the Consumer Product Safety Act (15 U.S.C. 2054(d); 86 Stat. 1211);

"(14) section 3 of the Act of April 5, 1944 (30 U.S.C. 323; 58 Stat. 191);

"(15) section 8001(c)(3) of the Solid Waste Disposal Act (42 U.S.C. 6981(c); 90 Stat. 2829);

"(16) section 219 of the Foreign Assistance Act of 1961 (22 U.S.C. 2179; 83 Stat. 806);

"(17) section 427(b) of the Federal Mine Health and Safety Act of 1977 (30 U.S.C. 937(b); 86 Stat. 155);

"(18) section 306(d) of the Surface Mining and Reclamation Act of 1977 (30 U.S.C. 1226(d); 91 Stat. 455);

"(19) section 21(d) of the Federal Fire Prevention and Control Act of 1974 (15 U.S.C. 2218(d); 88 Stat. 1548);

"(20) section 6(b) of the Solar Photovoltaic Energy Research Development and Demonstration Act of 1978 (42 U.S.C. 5585(b); 92 Stat. 2516);

"(21) section 12 of the Native Latex Commercialization and Economic Development Act of 1978 (7 U.S.C. 178(j); 92 Stat. 2533); and

"(22) section 408 of the Water Resources and Development Act of 1978 (42 U.S.C. 7879; 92 Stat. 1360).

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

"(b) Nothing in this chapter is intended to alter the effect of the laws cited in paragraph (a) of this section or any other laws with respect to the disposition of rights in inventions made in the performance of funding agreements with persons other than nonprofit organizations or small business firms.

"(c) Nothing in this chapter is intended to limit the authority of agencies to agree to the distribution of rights in inventons made in the performance of work under funding agreements with persons other than nonprofit organizations or small business firms in accordance with the Statement of Government Patent Policy issued by the President on August 23, 1971 (36 Fed. Reg. 16887), agency regulations, or other applicable regulations or to otherwise limit the authority of agencies to agree to allow such persons to retain ownership of inventions.

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

"§ 212. Relationship to antitrust laws

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

(b) The table of chapters for title 35, United States Code, is amended by adding immediately after the item relating to chapter 17 the following:

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

SEC. 3. AMENDMENTS TO OTHER ACTS.—The following Acts are amended as follows:

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

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

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

SEC. 4. EFFECTIVE DATE.—This Act and the amendments made by this Act, shall take effect one hundred and eighty days after the date of its enactment, except that the regulations referred to in section 2, or other implementing regulations, may be issued prior to that time.

Mr. BAYH. Mr. President, I move to reconsider the vote by which the bill was passed.

Mr. ROBERT C. BYRD. I move to lay that motion on the table.

The motion to lay on the table was agreed to.

-- End of Section D --

5/14/80

For May 1980 Inventors' Report

LEGISLATION

S. 414, the University and Small Business Patent Procedures Act, was passed by the Senate by a 91 - 4 vote and was sent to the House.

Hearings in the House on the corresponding House bill, H. R. 2414, and various other pieces of patent related legislation have been the subject of hearings by Congressman Kastenmeier's Subcommittee. Mark-up and recommendation of a piece of legislation is scheduled for May 27 and 28. No conclusion can be drawn as to what recommendations the Subcommittee will make.