

THE NEED FOR A UNIFORM GOVERNMENT PATENT POLICY: THE D.O.E. EXAMPLE

*Edward C. Walterscheid**

INTRODUCTION

During the decade just ended, both Congress¹ and President Reagan² sought to establish a government patent policy applicable to all federal agencies and departments. While a government patent policy was indeed created, it has not been uniformly applied to all federal agencies and departments. This Article begins with a brief introduction that recounts why there is a government patent policy. Part I focuses on the historical development of the patent right allocation procedures and practices of the Department of Energy ("DOE") and its predecessor agencies. The DOE example shows why it has been so difficult to establish a uniform government patent policy. Part II discusses what must be done to create a uniform government patent policy in the future.

In this century, patentable inventions have arisen mostly through research and development ("R&D") efforts.³ World War II wrought a fundamental change in the way such R&D activities are funded in this country.⁴ Prior to the war, the role of the federal government in funding such activities was almost negligible. During the war and quickly thereafter, government funding became more and more extensive, and

* Deputy Laboratory Counsel, University of California Los Alamos National Laboratory, Los Alamos, NM 87545. Although the work which resulted in this Article was performed under a contract between the Department of Energy and the University of California, the views expressed herein are uniquely those of the author and do not necessarily represent those of either the Department or the University.

1. See *infra* notes 113, 155 and accompanying text.

2. See *infra* notes 135, 183 and accompanying text. President Reagan was not the first president to seek to establish a governmental patent policy. In 1963, President Kennedy issued the first presidential memorandum on government patent policy. See *infra* note 62 and accompanying text. In 1971, President Nixon issued a statement on government patent policy which was in essence a revision of the 1963 statement issued by President Kennedy. See *infra* note 67 and accompanying text.

3. In the 19th century almost all patents were for inventions arising out of the work of artisans and craftsmen. There was very little organized R&D of the type that has characterized the latter half of the 20th century. See, e.g., D. MOWERY & N. ROSENBERG, *TECHNOLOGY AND THE PURSUIT OF ECONOMIC GROWTH* ch. 2 (1989).

4. The increased role of the federal government in funding R&D during and immediately after World War II is generally discussed in, e.g., D. PRICE, *GOVERNMENT AND SCIENCE: THEIR DYNAMIC RELATION IN AMERICAN DEMOCRACY* (1954); V. BUSH, *SCIENCE: THE ENDLESS FRONTIER* (1945); 2 R. HEWLETT & F. DUNCAN, *ATOMIC SHIELD: A HISTORY OF THE UNITED STATES ATOMIC ENERGY COMMISSION* (1969, reprint 1972).

for more than twenty-five years the government was the primary R&D funder. In recent years the government has remained a major source of funding for R&D work.⁵

The Battelle Memorial Institute estimates that total R&D expenditures in 1989 in the United States were about \$129.2 billion, with the federal government providing \$60.3 billion, or 46.7% of the total. Slightly more than half of this federal outlay was intended to support industry research; about one-quarter was directed to government-conducted R&D; about one-fifth was expended through colleges and universities; and the remainder was sent to nonprofit organizations.⁶

Appendix I breaks down this enormous governmental expenditure for R&D, by major department and agency, as contemplated by the executive branch for the years 1988 through 1990. Appendix II shows a similar breakdown with regard to the conduct of basic research.⁷ While the creation of patentable inventions is usually not the primary aim of government-funded R&D, the sheer magnitude of this R&D activity results in a significant number of such inventions. Ascertaining exactly how many subject inventions⁸ arise out of this federal R&D expenditure is difficult,⁹ but each year literally thousands of such inventions are

5. The Federal government was the major source of R&D funds from 1953 through 1979, but industry was dominant over the period 1980-1988, with the exception of 1986. See BATTELLE MEMORIAL INSTITUTE, PROBABLE LEVELS OF R&D EXPENDITURES IN 1989: FORECAST AND ANALYSIS (1988).

6. *Id.*

7. Appendices I and II are from EXECUTIVE OFFICE OF THE PRESIDENT & OFFICE OF MANAGEMENT AND BUDGET, SPECIAL ANALYSES, BUDGET OF THE UNITED STATES GOVERNMENT, FISCAL YEAR 1990, Special Analysis J at J-9, J-10 [hereinafter SPECIAL ANALYSES].

8. "Subject invention" is a term of art. As used herein, it is intended to encompass any invention first conceived or reduced to practice by a party to a funding agreement with an executive agency of the federal government. A "funding agreement" in turn means any contract, grant, or cooperative agreement made between a federal agency and any person or entity for the performance of experimental, developmental, or research work funded in whole or in part by the federal government. For definitions of these terms, see generally 35 U.S.C. § 201 (1988). Note, however, that the term "subject invention" as used in this article encompasses inventions made by large for-profit organizations which are parties to a funding agreement and thus is broader in scope than the definition given at 35 U.S.C. § 201 (1988).

9. There are several reasons for this difficulty. First, during the past decade the government has made no concerted effort to compile figures of this type. Second, not all subject inventions result in invention disclosures to the government, and even fewer result in issued patents. That is to say, many subject inventions are never disclosed as such for a variety of reasons, including lack of adequate funding to prepare and submit such disclosures, lack of understanding of what constitutes a subject invention, and even inventor *enmity* or outright opposition to the paperwork involved.

made.¹⁰

Because government-funded R&D has resulted in such a large number of subject inventions, it is important to evaluate the government policies which control the disposition of rights in the inventions. How are rights, and especially patent rights, in these federally-funded inventions determined and allocated? This, of course, is the question ultimately addressed and decided by a government patent policy, but there are a number of component issues to be considered. Among these are:

- (1) the feasibility of a single, uniform government patent policy for determining rights in all subject inventions arising from any government-funded R&D;
- (2) the parties who should acquire rights in subject inventions and the scope of those rights which the government should acquire, such as title, license, or some intermediate right; and
- (3) the method by which the patent policy should be specified; for example, by statute, by executive order, by a single executive agency having comprehensive oversight responsibility, or by individual agencies based on their own perceptions of needed policies.¹¹

In light of these issues, this article's theses are that:¹²

- (1) a single, uniform government policy for determining rights in subject inventions is not only feasible but also highly desirable;
- (2) such a policy should be predicated on a presumption—with only the most limited exceptions—that the entity performing the R&D work retains title ownership of resulting subject inventions, and the government retains a royalty-free license to use the inventions for governmental purposes; and

10. An average of approximately 7700 invention disclosures were received annually from government contractors and grantees during the period from 1963 to 1975. FEDERAL COUNCIL FOR SCIENCE AND TECHNOLOGY, REPORT ON GOVERNMENT PATENT POLICY, (1973-1976), at 408 (1978). See R. NASH & L. RAWICZ, PATENTS AND TECHNICAL DATA 69, 70 (1983). The Assistant General Counsel for Patents for the DOE stated in May 1989 that the DOE alone had received about 1500 invention disclosures in 1988. Personal communication from Richard Constant, DOE Assistant General Counsel for Patents (May 1989).

11. See R. NASH & L. RAWICZ, *supra* note 10, at 72.

12. These theses extend the government patent policy set forth by President Reagan in Exec. Order No. 12,591, 3 C.F.R. 220 (1987). See *infra* text accompanying notes 183-85.

- (3) this presumption of ownership should be based on statute rather than on presidential patent policy.

These theses will be developed through an historical review of the DOE's interpretation of government patent policy as applied to subject inventions arising out of DOE-funded R&D work, and through an analysis of the adverse effects the DOE interpretation has had on the development of a uniform government patent policy.

A uniform government patent policy has not yet been formulated, although there have been a number of efforts during this decade to develop a more uniform policy.¹³ The role played by the DOE has been a major factor in the failure to achieve a uniform policy.¹⁴ No other agency has more organic legislation than the DOE directed at allocation of patent rights arising out of R&D work funded by it, and no other agency has sought so desperately to retain agency control of patent policy.¹⁵

I. PATENT RIGHTS ARISING OUT OF DOE-FUNDED RESEARCH

To determine the ownership and scope of patent rights to inventions arising out of DOE-funded research, one must consult four separate

13. See, e.g., Pub. L. No. 96-517, 94 Stat. 3015 (1980); Trademark Clarification Act of 1984, Pub. L. No. 98-620, 98 Stat. 3335; Exec. Order No. 12,591, *supra* note 12.

14. As set forth in Appendix I, the DOE spent an estimated five billion dollars on R&D in 1988. The vast majority of this funding was expended at government-owned, contractor-operated facilities, including the nine DOE national laboratories. Comparable but slightly higher amounts are expected to be expended in 1989 and in 1990. SPECIAL ANALYSES, *supra* note 7.

15. See, e.g., *infra* note 153 and accompanying text.

16. The extant relevant statutory provisions are: (i) Atomic Energy Act of 1954, § 152 (codified as amended at 42 U.S.C. § 2182 (1988)); (ii) Federal Nonnuclear Energy Research and Development Act of 1974, § 9 (codified as amended at 42 U.S.C. § 5908 (1988)); (iii) Chapter 18 of Title 35 of the United States Code entitled "Patent Rights in Inventions Made with Federal Assistance," 35 U.S.C. §§ 200 *et seq.* (1988); and (iv) Department of Energy National Security and Military Applications of Nuclear Energy Authorization Act of 1987, § 3131 (codified as amended at 42 U.S.C. § 7261a (1988)).

The recently passed National Competitiveness Technology Transfer Act of 1989, Pub. L. No. 101-189, §§ 3131-33, is arguably a fifth statutory provision that must be addressed. This Act amends Section 12 of the Stevenson-Wydler Technology Act of 1980 (codified as amended at 15 U.S.C. § 3710a (1988)), to make it applicable to cooperative research and development agreements at government-owned, contractor-operated laboratories as well as at government-owned, government-operated laboratories. The Act addresses rights in subject inventions arising out of such cooperative research and development agreements.

statutory provisions,¹⁶ as well as an executive order,¹⁷ and a presidential patent policy statement.¹⁸ One of the difficulties in determining just what those patent rights are or should be is that later statutes usually did not repeal or rescind the earlier existing law. The result is a legal background of overlapping laws enacted respectively in 1954 (amended 1961), 1974 (amended 1980), 1980 (amended 1984), and 1986 (amended 1987). A further difficulty is that the legislative histories of the earlier enactments are quite different from those of the later enactments. As will be demonstrated, the interpretation of this legal background has resulted in substantial disagreement between those seeking to rely on the legislative intent of the earlier enactments, which favor retention of patent rights by the government, and those seeking to rely on the legislative intent of the later enactments, which favor granting of patent rights to contractors.

A. *The Early History of the DOE Patent Policy*

The DOE traces the origins of its patent policy back to well before there was extant legislation regarding patent rights arising out of federally-funded R&D, and before the DOE's predecessor agencies came into existence.¹⁹ Writing in 1983, DOE General Counsel Tenney Johnson set forth the early policy history from the DOE perspective.²⁰ He noted that in 1940 the National Defense Research Committee ("NDRC") and the Office of Scientific Research and Development ("OSRD") used two different contract clauses for the allocation of patent rights in the nuclear field. The "short-form" clause provided for the government to have the sole power to determine the disposition of title to subject inventions. The "long-form" clause gave title to the contractor subject to a governmental license for military and national defense purposes.²¹

17. Exec. Order No. 12,591, *supra* note 12.

18. Memorandum to the Heads of Executive Departments and Agencies, 19 WEEKLY COMP. PRES. DOC. 252 (Feb. 18, 1983).

19. The predecessor agencies were the Atomic Energy Commission and the Energy Research and Development Administration.

20. T. Johnson, Memorandum on Impact of Presidential Memorandum on Government Patent Policy on the Department of Energy Patent Policy (May 5, 1983) [hereinafter Impact Memo].

21. According to Johnson:

Prior to the Manhattan Engineer District the allocation of patent rights in the nuclear field began with two patent clauses developed and used by the National Defense Research Committee (NDRC) and the Office of Scientific Research and Development (OSRD) in 1940. The "short-form" clause provided for the Government to have the sole power to determine the disposition of title to inventions made under the contracts. The "long-form" clause was used in situa-

In the spring of 1942, President Roosevelt authorized that all future NDRC and OSRD contracts use the "short-form" clause.²² In principle, the use of the "short-form" clause meant that the government could grant title in any subject inventions made under the contract to the contractor or to anyone else. However, it also meant that the government itself could retain the whole right, title, and interest in any subject inventions.²³ In effect, through the use of the "short-form" clause, subject inventions came into existence owned by the government, which could exercise all the powers given by title to the invention.

The policy trend favoring governmental control of rights advanced in August 1942, when the Manhattan Engineer District ("MED") was formed.²⁴ For allocating patent rights in its R&D contracts, the MED

tions where the contractor refused to accept the "short-form" clause; the "long-form" clause allocated to the contractor the title to inventions made under the contract subject to a governmental license for military and defense purposes.

The use of the short and long-form clauses in the atomic energy program was discussed by Mr. Irvin Stewart, then Deputy Director of OSRD, in a hearing held during 1946 on the Atomic Energy Act of 1946 before the Special Senate Committee on Atomic Energy. Mr. Stewart testified before the Committee:

The long-form clause was used primarily in those cases where NDRC or OSRD was dealing with a contractor who had an established position in the field of work or a substantial amount of basic information which NDRC or OSRD wished to have concentrated upon a specific problem concerning the development of a weapon or an instrument of war. The short-form clause was used in cases where the Government took the initiative in stimulating the assembly of a group of men to work in a field where such a fund of information was not available in a single organization. . . . In addition, the short-form clause was regularly used in OSRD medical research contracts because of the unusual public interest involved.

Impact Memo, *supra* note 20, at 4 n.7 (quoting *Hearings Before the Special Senate Committee on Atomic Energy*, 79th Cong., 2d Sess. 332-33 (1946) [hereinafter *1946 Hearings*]).

22. As stated by Johnson:

The rationale for utilizing the "long-form" clause was that these contractors already had a technical position in the field or related field, and the probability of success in this small-scale program was thought to be modest. However, in view of the success of the program and of the public interest involved therein, OSRD and President Roosevelt in the spring of 1942 changed the patent policy for all future NDRC and OSRD research and development contracts and subcontracts to provide the Government with the right to allocate all patent rights under these contracts and subcontracts.

Impact Memo, *supra* note 20, at 4 n.7.

23. See *infra* note 25.

24. The MED was granted full authority for the war-time development of the atomic bomb. 1 R. HEWLETT & O. ANDERSON, *THE NEW WORLD: A HISTORY OF THE UNITED STATES ATOMIC ENERGY COMMISSION* 82 (1962) [hereinafter *THE NEW WORLD*].

adopted three types of patent clauses, which were essentially variations of the "short-form" clause used by the OSRD and the NDRC.²⁵

B. *The Atomic Energy Act of 1946*

The next step in the development of the policy on which the DOE would ultimately rely came about with the enactment of the Atomic

25. Capt. Robert A. Lavender, the MED patent advisor, testified before Congress in 1946:

Captain Lavender. . . . I will now describe the four patent clauses that were used in the Manhattan district production and research contracts.

For the research contracts we had the regular short-form patent clause without any additional limitations. That is, the Government had the right to determine the disposition of the whole right, title, and interest in inventions.

Senator Millikin. Let me ask you at that point whether in your opinion that is the same as saying the Government shall own the patent without consideration if it shall desire to do so?

Captain Lavender. That is correct, sir. Then a type of contract was used where they had the short-form patent clause modified, where the contractor, as a matter of contract right, could retain a nonexclusive license in outfields, and I shall define "outfield" as commercial activities, and "infield" as any mechanical device, apparatus, or process that is used . . . [in the atomic energy program] where there was some information given to the contractor as to the research work that had been done, and it was, you might say, particularly applicable to the atomic energy field.

Then there was the third type of contract with a short-form patent clause, in which we had the right to determine the disposition of the rights under inventions made in carrying out the work under the contract, but the contractor retained the sole license under the inventions with the right to grant sublicenses. That contract was used where we went to a contractor in his own field of development, but there was some engineering or redesign for the particular work that we were engaged in. In other words, it was a contract where there was a slight modification of the standard production but with the chance that in working with this or assembling the material he may find some invention that did have some reference to atomic energy which the Government would desire to control.

Therefore, we said that as far as the commercial rights are concerned, he can have those rights the same as the ordinary development contract by the Navy and War Departments, but that the Government still had the right to determine the disposition of the rights except for the reserved conditions, and it did have the title to the invention, so that the Government could exercise all the powers that the title to the invention and the patent gives, and have not only the infield rights in whole, but would have a license under the outfield rights as well. . . .

[The fourth type of clause allocated liability for any patent infringement arising when components were required to be purchased off the shelf.]

1946 Hearings, *supra* note 21, at 338-39. See also THE NEW WORLD, *supra* note 24, at 496-97.

Energy Act of 1946 ("the 1946 Act").²⁶ However, the 1946 Act was silent in its terms as to the allocation of patent rights in subject inventions made under Atomic Energy Commission ("AEC") contracts. The most likely reason for this legislative silence was that there was no perceived need for a provision to allocate patent rights because the legislation included a provision to limit patent rights. Namely, Section 11(b) of the 1946 Act stated that "[n]o patent hereafter granted shall confer any rights with respect to any invention or discovery to the extent that such invention or discovery is used in the conduct of research or development activities"²⁷ in the fields in which Section 3 of the 1946 Act authorized the AEC to conduct R&D. Thus, there was no need to require government ownership of any such invention or discovery, because any patent issuing thereafter would not confer any rights against the government with respect to the use of such invention or discovery in the types of R&D activities that the AEC was authorized to conduct. Simply stated, the use of such inventions by the AEC was declared to be outside the scope of rights provided by the patent system.²⁸

In 1983 DOE General Counsel Johnson set forth a second reason why the 1946 Act contained no provision concerning allocation of patent rights. In his view, "[t]he Atomic Energy Act of 1946 had no stated patent provision for contracts, presumably because it was intended that the patent clauses used by the Manhattan Engineer District would continue to be used."²⁹ According to Johnson, after passage of the 1946 Act the AEC had great latitude regarding the patent provisions it could use in its contracts, but in practice it continued to use the MED patent clauses which gave the government control over the allocation of patent rights.³⁰ The only distinction from the MED clauses was that the AEC now identified the clauses respectively as type A, type B, and type C. It can thus be seen that from its earliest days, the AEC was a "title taking" rather than a "title granting" agency. That is to say, from its inception the AEC adopted a policy under which it would retain title to inventions made or conceived under its R&D contracts, rather than grant title to the contractor.

Neither the 1946 Act itself nor the background history required the AEC to adopt this "title-taking" stance. Indeed, in January 1945 President Roosevelt had established a committee to make recommendations concerning a possible government patent policy. That committee

26. Atomic Energy Act of 1946, Pub. L. No. 79-585, 60 Stat. 755.

27. *Id.* § 11(b)

28. See THE NEW WORLD, *supra* note 24, at 497-98.

29. Impact Memo, *supra* note 20, at 4-5.

30. *Id.* at 5-6.

apparently took a different perspective than the AEC in stating that "since the Government has no need of the right to exclude conferred by a patent and does not enter into ordinary commercial enterprises in competition with its citizens, full ownership of patents [arising out of federally-funded R&D] should not ordinarily be asserted by the Government."³¹ It further took the view that a single, uniform government patent policy was neither desirable nor feasible.

In 1947, however, the Attorney General issued a report that was much more consonant with the AEC approach.³² He pointed out that:

At one extreme the Government could acquire title to all inventions produced in the course of federally financed research and development subject to limited exceptions (the "title" policy). On the other hand, as a minimum, the Government should acquire at least a nonexclusive, irrevocable, royalty-free license for governmental purposes to such inventions (the "license" policy).³³

He further strongly recommended that the government adopt a uniform title-taking policy, with only a very limited right of agency heads to grant waivers of this policy.³⁴

31. Report of the National Patent Planning Committee on Government-Owned Patents and Inventions of Government Employees and Contractors 11 (Jan. 1945), *reprinted in* 2 SUBCOMM. ON DOMESTIC AND INTERNATIONAL SCIENTIFIC PLANNING AND ANALYSIS OF THE HOUSE COMM. ON SCIENCE AND TECHNOLOGY, BACKGROUND MATERIALS ON GOVERNMENT PATENT POLICIES—REPORTS OF COMMITTEES, COMMISSIONS AND MAJOR STUDIES, 94th Cong., 2d Sess. (1976) [hereinafter BACKGROUND MATERIALS].

32. 1 U.S. ATT'Y GEN., INVESTIGATION OF GOVERNMENT PATENT PRACTICES AND POLICIES (1947) [hereinafter AG REPORT], *reprinted in* BACKGROUND MATERIALS, *supra* note 31.

33. R. NASH & L. RAWICZ, *supra* note 10, at 71 (quoting AG REPORT, *supra* note 32, at 4).

34. The specific recommendations were:

1. As a basic policy, all contracts for research and development work financed with Federal funds should contain a stipulation providing that the Government shall be entitled to all rights to inventions produced in the performance of the contract.
2. If the head of any Government agency certifies, with the approval of the Government Patents Administrator, that an emergency situation exists requiring that an exception be made to the basic policy in a particular case in respect of prospective inventions to which the contractor has made a substantial independent contribution prior to the award of the contract, such exception may be made, upon such terms and conditions as the Administrator may prescribe or approve. Every such exception should, to the extent possible, be subject to the following conditions:

- (a) The head of the agency concerned should certify, with the approval of the

If the AEC manifested the epitome of the title-taking approach to patent policy, the Navy and War Departments and later the Department of Defense ("DOD") represented classic examples of agencies adopting the title-granting approach (called the "license" policy by the Attorney General). The rationale set forth by the military departments for adopting a title-granting policy rather than a title-taking policy was straightforward: The grant of title was the most effective means of obtaining R&D work from the most competent contractors.³⁵

Government Patents Administrator, that he has made a reasonable effort to enter into a contract for the research or development work in question with a qualified organization in accordance with the Government's basic patent policy, but has been unsuccessful.

- (b) The contract as awarded should stipulate that the contractor will be permitted to retain patent rights only to inventions which involve a substantial independent contribution by the contractor or his staff antedating the work called for in the contract, as determined by the head of the agency with the approval of the Government Patents Administrator, or, in appropriate cases, by arbitration.
 - (c) The contractor should grant the United States a nonexclusive, irrevocable, royally-free [sic] license, to make, have made, use and dispose of any inventions awarded to him under the contract.
 - (d) The contractor (or his assignee) should agree to place the invention in adequate commercial use within a designated period; and if at the end of such time the Government determines that such use is not being made, the contractor (or his assignee) should be required to offer nonexclusive licenses at a reasonable royalty to all applicants.
3. Cooperative research projects shall also be subject to the basic patent policy, but the head of the agency concerned, with the approval of the Government Patents Administrator, may make an exception to this policy in a particular case when a proper showing of the need therefor has been made; provided, however, that the conditions of section 2 above shall be observed to the extent feasible.
 4. To the extent permitted by law, grants of Federal funds for research or development work which may result in patentable inventions should be subject to the same patent policy as pertains to research and development contracts.

AG REPORT, *supra* note 32, at 5.

35. As stated by Graeme C. Bannerman, Deputy Assistant Secretary of Defense (Procurement) for the Department of Defense:

In selecting contractors for research and development work, it is the expressed policy of the Department of Defense to make awards to those organizations which have the highest competence in the specific field of science or technology involved. This is done because, by seeking the organization which is most advanced in the field, we avoid repetition of effort and thereby get our weapons developed on a quicker and less costly basis. We do not wish to pay for having the wheel reinvented each time we contract. It should be recognized that this means that we seek out our development contractors and subcontractors because of their specialized skills and backgrounds which were normally acquired at their own expense for use in their own commercial pursuits. It is essential to the national defense that these specialized firms and their best background ideas and prior investment be freely available for weapons development.

It was against this background that the Atomic Energy Act of 1954 ("the 1954 Act")³⁶ was enacted, with its Section 152 addressing a patent policy for the Atomic Energy Commission.

C. Section 152 of the Atomic Energy Act of 1954

Although Section 152 of the 1954 Act did not represent the first Congressional foray into the field of government patent policy,³⁷ it was certainly the first major effort in that regard. Section 152 has been amended several times; however, the language setting forth rights in inventions has remained unchanged since a 1961 amendment. That language is:

....

It is most important that the committee understand the scope of this argument. The Department certainly is not advancing an argument that it could not find private industrial and research organizations to perform research and development under contracts providing for Government ownership of title to patents. There are contractors who are in Government business exclusively. There are others whose business is research for hire with no production for the commercial market.

Some companies see the potentials of followon [sic] production programs as a real factor and inducement. Economic necessity may drive others to accept our contracts. There are many firms which would be glad to have us finance their entry into new fields in which they have no prior experience on any terms they can get. It is readily apparent that there are substantial motivations, exclusive of patent fallout, in undertaking research and development work for the Department.

However, many of the most competent industrial laboratories which have done the most advanced work in fields of interest to us are not normally for hire to develop products for others to make commercially. Our goal is not the mere placement of research and development contracts but the placement of those contracts with firms currently developing the most advanced technology. It is vital, in our considered view, that such firms freely accept DOD contracts and put their best technical effort and background ideas wholeheartedly in problem solutions for national defense. The Government has no power to compel this. It is a matter of mutually agreeable terms which appear to offer advantages to both parties.

Hearings on Government Patent Policy Before the Subcomm. on Patents, Trademarks and Copyrights of the Senate Judiciary Comm., 87th Cong., 2d Sess., pt. 1, at 28, 34, 36 (1961).

36. Atomic Energy Act of 1954, Pub. L. No. 83-703, 68 Stat. 919 (codified as amended at 42 U.S.C. § 2182 (1988)).

37. See, e.g., Research and Marketing Act of 1946, Pub. L. No. 79-733, 60 Stat. 1082, requiring Agricultural Department contracts to make "the results of research and investigation available to the public through dedication, assignment to the Government, or such other means as the Secretary shall determine"; and National Science Foundation Act of 1950, Pub. L. No. 81-507, 64 Stat. 154, requiring that NSF contracts have "provisions governing the disposition of inventions produced thereunder in a manner calculated to protect the public interest and the equities of the individual or organization with which the contract or other arrangement is executed."

Any invention or discovery, useful in the production or utilization of special nuclear material or atomic energy, made or conceived in the course of or under any contract, subcontract, or arrangement entered into with or for the benefit of the Commission [now DOE], regardless of whether the contract, subcontract, or arrangement involved the expenditure of funds by the Commission [now DOE], shall be vested in, and be the property of the Commission [now DOE], except that the Commission [now DOE] may waive its claim to any such invention or discovery under such circumstances as the Commission [now DOE] may deem appropriate, consistent with the policy of this section.³⁸

This provision has been interpreted by the courts as mandating a statutory presumption in favor of the government's retention of patent rights in inventions made under AEC contracts.³⁹

Section 152 was new in the 1954 Act. As discussed earlier,⁴⁰ the 1946 Act included no equivalent provision for allocating patent rights, but instead included a provision that any patent issuing thereafter would not confer any rights against the government regarding the use of the patented invention in any authorized R&D activities. Therefore, the actual ownership of patent rights had not been such an important issue.

During the Congressional hearings on the bills that ultimately became the 1954 Act, the AEC indicated its intent to continue to use in its contracts the type A, B, and C clauses that arose from the Manhattan Engineer District policy.⁴¹ Section 152 of the 1954 Act clearly placed a statutory presumption of correctness on this policy.⁴² As one group of

38. 42 U.S.C. § 2182 (1988).

39. See *Nuclear Data, Inc. v. AEC*, 344 F. Supp. 719 (D. Ill. 1972).

40. See *supra* notes 27, 28 and accompanying text.

41. Thus, for example, AEC General Counsel William Mitchell testified that:

[T]he Commission under the present law [the 1946 Act] has not in a great many instances granted or made contractual arrangements which allowed patent rights as wide as the statute would have permitted. In other words, we have, as you refer to, our type A, type B, and type C clauses, and those to varying degrees allow patent rights within the framework of the statute, but the A clause particularly is much more limiting than the present law would permit; and I would expect the Commission to follow the same practice under the new law.

Hearings on S. 3323 and H. R. 8862 to Amend the Atomic Energy Act of 1946, Before the Joint Comm. on Atomic Energy, 83d Cong., 2d Sess., pt. 2, at 666 (1954).

42. Moreover, Section 159 of the 1954 Act stated:

Nothing in this chapter shall affect the right of the Commission to require that patents granted on inventions, made or conceived during the course of federally financed research or operations, be assigned to the United States.

commentators has put it:

[T]he genuine concern was that the Government would not get what it was entitled to and that contractors would get what they were not entitled to. But it must be remembered that the Commission patent policy was plainly known to Congress and endorsed by them. Thus, the conclusion is inescapable that the real problem which Congress was concerned with was how to effectively enforce the sanctioned contracting practices of the Commission.⁴³

Section 152 was a late addition to the bills that would become the 1954 Act. It was not included in the April 15, 1954 bills, H.R. 8862 and S. 3323, on which most of the public hearings were held. A form of Section 152 first appeared in a version of the bill proposed by the Joint Committee on Atomic Energy ("JCAE") on May 21, 1954, but that version did not contain any express procedural presumption concerning title to inventions or discoveries. The version of Section 152 that was ultimately enacted was introduced on July 23, 1954 as a substitute for the compulsory licensing provision of the Act, which had come under strenuous challenge.⁴⁴

It is interesting to note that Section 152 was introduced by Representative W. Sterling Cole, who was the JCAE chairman and House floor manager for the proposed legislation. During the debates, Representative Cole pointed out that the intent of Section 152 was "to make sure that ideas and inventions which flow from Commission-financed activity do not give rise to any private patents which might be used contrary to the best interest of the public."⁴⁵ At the same time, however, he emphasized that "[i]t would be a serious misinterpretation of the intent of Section 152 to turn the strength of its protective language against the stimulus which patents provide for private initiative."⁴⁶

The concern expressed by Representative Cole was prescient, for the AEC, with the full blessing of the JCAE,⁴⁷ thereafter treated the language of Section 152 as mandating government ownership of almost

Atomic Energy Act of 1954, *supra* note 36, § 159.

43. Hamann & Koris, *Section 152 of the Atomic Energy Act of 1954*, 42 J. PAT. OFF. SOC'Y 702, 705 (1960).

44. *Id.*

45. 100 CONG. REC. 13,783 (1954).

46. *Id.*

47. See *infra* text accompanying notes 55-60.

all of the inventions made or conceived in R&D work funded by it.⁴⁸ Soon after passage of the 1954 Act, Representative Cole admitted that the language of Section 152 was overbroad and that the first sentence⁴⁹ in particular was unnecessary.⁵⁰ As events later showed, that language indeed became a significant detriment to "the stimulus which patents provide for private initiative."⁵¹

However, early concerns were of a different nature. Two problems regarding rights in inventions or discoveries became apparent under Section 152 as enacted. The first problem was that the original language of the 1954 Act made it applicable to any contract, subcontract, arrangement, "or other relationship." If the 1954 Act was to be read literally, it seemed that any form of relationship with the AEC, even one not contractual in nature, would create a presumption that any invention arising out of such relationship would vest in and be the property of the AEC. Needless to say, this exceedingly broad and indefinite language caused substantial concern among those in the private sector who had dealings with the AEC.

The second problem arose because Section 152, while creating a very broad presumption of ownership rights in the government, also granted the AEC the right to waive ownership rights under such circumstances as the AEC might deem appropriate. The power to waive title was a unique concept in the patent policy area,⁵² and it was perhaps inevitable that Congress would eventually become concerned about this broad grant of waiver authority. However, several years passed before such a concern

48. See *infra* note 73.

49. See *supra* text accompanying note 38.

50. Within a year, Representative Cole would write:

Ironically, under the pressure of zealously trying to protect the normal American patent system, too much was written into this section. The first sentence of the section [which is reproduced *supra* as amended in the text accompanying note 38] states that any invention made under any contract or other relationship with the Commission shall be deemed to have been made by the Commission. Actually, this first sentence is unnecessary if Section 152 is considered in its proper frame of reference, namely, as a procedural device for giving the Commission ready title to those patents to which it is entitled. Since the rights to the title to a patent flow from a contract, whether expressed or implied, there is no need for any declaration such as that contained in the first sentence.

Hamann & Koris, *supra* note 43, at 706 (quoting Cole, *Patenting Nuclear Developments*, NUCLEONICS, April 1955, at 31, 34).

51. See *supra* note 46 and accompanying text.

52. See R. NASH & L. RAWICZ, *supra* note 10, at 81.

about how the AEC might be applying a waiver policy became apparent.⁵³

In 1959, the AEC reported to the JCAE that while it was continuing to use the type A, B, and C patent clauses in its contracts,⁵⁴ it had also granted some waivers to patent rights (in non-R&D contracts) under Section 152.⁵⁵ Upon discovering that the AEC had actually granted waivers, some Congressmen apparently became concerned about the amount of discretion that Section 152 afforded the AEC.

According to DOE General Counsel Johnson, during the 1959 hearings before the Subcommittee on Legislation, Representative Holifield asked the AEC General Counsel whether the AEC might use its broad waiver power under Section 152 to waive all rights to inventions. The General Counsel replied:

That thought has not entered my mind, Mr. Holifield. I would doubt that such an interpretation would be consistent with the legislative history. It certainly is clearly indicative on its history that there would have to be very specially meritorious circumstances to warrant departing from the general policy prescribed in the statute that the Commission is to get title.⁵⁶

53. In the interim, William Mitchell, general counsel of the AEC, reported to the JCAE that:

Since the passage of the new [1954 Atomic Energy Act], the Commission has continued to incorporate its standard patent provisions in contracts, with the particular type of clause used being dependent upon the nature and scope of the contract. In contracts primarily for research or development or for the operation of a facility, the patent provision provides for a determination by the Commission of the rights in and to any inventions. Such a clause is referred to as a type A patent provision. In instances where the work under a contract pertains indirectly to basic research and development and relates to a general field of activity of the contractor, the retention of a nonexclusive license by the contractor in fields other than the production of special nuclear materials or atomic energy is provided for under what is referred to as the type B patent provision. Where the work to be performed pertains only incidentally to research and development in which the Commission is interested and relates to a field in which the contractor has an established industrial and patent position, a type C clause is used. This provision allows the contractor to retain a sole license with the sole right to grant sublicenses for purposes other than use in the production or utilization of special nuclear material or atomic energy.

2 *Hearings on Development, Growth, and State of the Atomic Energy Industry, Before the Joint Comm. on Atomic Energy, 84th Cong., 1st Sess., pt. 1, at 193 (1955).*

54. For the AEC interpretation of these clauses, see *id.*

55. See Impact Memo, *supra* note 20, at 9. See also *infra* note 73.

56. See Impact Memo, *supra* note 20, at 9.

Later in the hearings the real concern of the JCAE became apparent: that the AEC might adopt the title-granting policy the DOD had been using rather than continue the title-taking policy the AEC had been consistently pursuing.⁵⁷

In 1960, as in 1959, the JCAE proposed language

that would help make it clear that any waiver would have to be consistent with the policy of the section, i.e., that the Government normally takes title when it is putting its money in research and development. The waiver would have to be consistent with this overall general policy that is set forth there.⁵⁸

Finally, in 1961 the first sentence of Section 152 was amended by deleting the expansive words "other relationship" and by adding the limiting phrase "consistent with the policy of this section" to qualify the AEC's discretionary power to waive title.⁵⁹ Concerning the addition of this latter phrase, the JCAE stated:

[T]he additional language . . . will make it clear that any waiver will have to be consistent with the general policy expressed in Section 152, namely, that the Commission will normally take title to resulting atomic energy patents when it is supporting research and development out of which the patents arise.⁶⁰

As DOE General Counsel Johnson stated in 1983, "[c]learly, the amendment was intended to foreclose the adoption by the AEC of anything other than a 'title [taking] policy' in carrying out research and development in the field of nuclear energy."⁶¹

D. Early Presidential Statements on Government Patent Policy

On October 10, 1963, President Kennedy issued a "Presidential Memorandum and Statement on Government Patent Policy,"⁶² which set

57. *Id.*

58. 14 *Hearings on Omnibus Bills—1960, Before the Subcomm. on Legislation of the Joint Comm. on Atomic Energy*, 86th Cong., 2d Sess. 25 (1960).

59. Pub. L. No. 87-206, § 10, 75 Stat. 477 (1961).

60. H.R. REP. NO. 963, 87th Cong., 1st Sess., reprinted in 1961 U.S. CODE CONG. & ADMIN. NEWS 2591, 2598.

61. Impact Memo, *supra* note 20, at 10.

62. 28 Fed. Reg. 10,943 (1963), reprinted in R. NASH & L. RAWICZ, *supra* note 10, app. at 1-5.

forth, for the first time, uniform rules governing the type of patent provisions to be used in government contracts and grants. The Presidential Statement was, however, expressly "subject to specific statutes governing the disposition of patent rights of certain Government agencies."⁶³ The policy sought to strike a balance between title taking and title licensing or granting, with an underlying concern that an across-the-board adoption of either policy was not in the best interests of the government. Thus, it set up general policy guidelines indicating when title taking and when title granting or licensing were respectively appropriate.⁶⁴

One of the areas in which the 1963 Presidential Statement recommended that "the Government shall normally acquire or reserve the right to acquire the principal or exclusive rights throughout the world in and to any invention made in the course of or under the contract" was where

the contract is in a field of science or technology in which there has been little significant experience outside of work funded by the Government, or where the Government has been the principal developer of the field, and the acquisition of exclusive rights at the time of contracting might confer on the contractor a preferred or dominant position.⁶⁵

Apparently this subsection was designed to accommodate special situations such as the field of atomic energy.⁶⁶

On August 23, 1971, President Nixon issued a revised "Memorandum and Statement on Government Patent Policy,"⁶⁷ which basically reaffirmed the 1963 Presidential Statement, but also expanded the authority of agency heads to permit contractors to obtain greater rights in inventions arising out of government contracts.⁶⁸ However, the 1963 Presidential Statement still contained the specific disclaimer that the policy therein was "subject to specific statutes governing the disposition of patent rights of certain Government agencies."⁶⁹

DOE General Counsel Johnson summarized the view that prevailed in the AEC during this period as follows:

63. R. NASH & L. RAWICZ, *supra* note 10, app. at 3.

64. *Id.* at 93.

65. *Id.*, app. at 3.

66. *Id.* at 106.

67. 36 Fed. Reg. 16,889 (1971), reprinted in R. NASH & L. RAWICZ, *supra* note 10, app. at 6-11.

68. R. NASH & L. RAWICZ, *supra* note 10, app. at 7.

69. *Id.*, app. at 8.

Both the '63 and 1971 President's Memorandum and Statement of Government Patent Policy defined minimum rights which the Government should acquire in inventions made under contracts. But since the 1963 and 1971 President's Memorandum and Statement were subject to specific statutes, Section 152 was considered controlling with respect to inventions in the field of nuclear energy. As to inventions outside the scope of Section 152, the President's Memorandum and Statement was considered applicable.

Where the contractor was to perform research and development work at Government expense, the AEC did not grant waivers. Rights to nonnuclear inventions or nonnuclear uses of inventions did not fall within the ambit of Section 152, and therefore these were frequently waived. The AEC pursued this policy even though the Atomic Energy Act did not set forth specific standards for procedures in granting waivers, and no detailed administrative rules for implementation of statutory waiver provisions were established by the AEC.⁷⁰

Although Johnson suggested that rights to nonnuclear inventions or to nonnuclear uses of nuclear inventions were "frequently waived" by the AEC, it is not clear that such waiver occurred at the government-owned, contractor-operated facilities where the vast majority of AEC-funded R&D work was performed.⁷¹ Despite Johnson's statement that "[a]s to

70. Impact Memo, *supra* note 20, at 10-11. It is not clear what Johnson intended by the first two sentences of the second paragraph. Read literally, they appear to conflict in certain cases. Thus, for example, if the research work resulting in an invention was done at government expense, then no waiver apparently was ever granted by the AEC even though such inventions could be nonnuclear in nature or could have nonnuclear uses. To the extent that waivers were granted by the AEC, Johnson does not indicate what criteria were used.

For discussion and elaboration on the policies and practices of the AEC with respect to allocation of patent rights before and after the 1963 Presidential Statement, see Dobkin, *Patent Policy in Government Research and Development Contracts*, 53 VA. L. REV. 564, 570-74, 607-13 (1967). See also Watson, Bright & Burns, *The Title Policy of the Atomic Energy Commission*, 4 PAT. TRADEMARK & COPYRIGHT J. OF RES. & EDUC. 347 (1960).

71. During all the years the AEC funded the Los Alamos Scientific Laboratory (1947-1974), there is no record of title to any invention made at the Laboratory ever being waived to the University of California, which continuously operated the Laboratory for the AEC. This is perhaps not surprising when it is realized that from 1943 through 1974 there was essentially no change in the type A patent clause allocating rights in discoveries and inventions. In 1943, when the Laboratory was formed, that clause read:

It is understood and agreed that whenever any patentable discovery or invention is made by the Contractor or its employees in the course of the work called for in this contract, the Contractor shall furnish the Contracting Officer with complete information thereof, and the Contracting Officer shall have the sole power to determine whether or not and where a patent application shall be filed.

inventions outside the scope of Section 152, the President's Memorandum and Statement was considered applicable" by the AEC, the applicability of the Presidential Statement was apparently never reflected in the patent clause of the management and operating contracts of government-owned, contractor-operated facilities.⁷²

The JCAE need never have worried about the AEC's waiver discretion, for during the AEC's entire existence from 1947 to 1974 it apparently never once waived government rights in subject inventions made under its R&D contracts.⁷³ It would take Congressional action and a successor agency before such waivers became a reality.

E. Section 9 of the Federal Nonnuclear Act

As has been discussed earlier, the first sentence of Section 152 of the 1954 Act was amended in 1961 by the addition of the phrase "consistent with the policy of this section" to qualify the AEC's discretionary power to waive title.⁷⁴ The intent of this phrase was that the AEC would normally take title to patents arising out of the research it supported. Nonetheless, it was clear that there must have been some circumstances in which it would have been appropriate to waive title, but it was unclear just what those circumstances might have been. However, the JCAE certainly expected the AEC to exercise its waiver prerogative judiciously and sparingly.

and to determine the disposition of the title to and the rights under any application or patent that may result. The judgment of the Contracting Officer on such matters shall be final.

In 1974 the clause read:

Whenever any discovery or invention is made or conceived by the University or any of its employees, in the course of, or under the terms of this contract, the University shall furnish the Commission with complete information thereon and the Commission shall have the sole power to determine whether or not and where a patent application shall be filed, and to determine the disposition of the title to and rights under any application or patent that may result. The judgment of the Commission on such matters shall be accepted as final.

72. See, e.g., *supra* note 71 for a comparison between the 1943 and 1974 patent clauses in the contract for the operation of the Los Alamos Scientific Laboratory (now Los Alamos National Laboratory).

73. R. NASH & L. RAWICZ, *supra* note 10, at 81-82 ("The authority to waive title was not exercised by the Commission in research and development contracting situations, but a limited number of 'general waivers' were issued covering other situations which the Commission deemed inappropriate to take title."). Thus, in non-R&D contracts, such as construction or procurement contracts, the AEC sometimes waived rights to inventions, but where the specific subject of a contract was R&D work or funding, the AEC did not waive government ownership of resulting inventions.

74. 42 U.S.C. § 2182 (1988). See *supra* text accompanying notes 54-60.

As DOE General Counsel Johnson noted, "the Atomic Energy Act [of 1954] did not set forth specific standards for procedures in granting waivers, and no detailed administrative rules for implementation of statutory waiver provisions were established by the AEC."⁷⁵ One can only speculate as to why the AEC failed to establish waiver regulations pursuant to Section 152. It may well have been that the AEC perceived that any such regulations necessarily would have restricted its freedom of action: not only its freedom to grant waivers, which it did only infrequently and almost never for the contractors operating its government-owned, contractor-operated facilities, but also its freedom not to grant waivers.⁷⁶ By not publishing regulations, the AEC avoided having its practices opened to public scrutiny and challenge, especially by its contractors.

In 1974, Congress attempted to formulate a government patent policy for inventions arising out of nonnuclear R&D funded by the Energy Research and Development Administration ("ERDA"), the successor agency to the AEC.⁷⁷ Congress produced in Section 9 of the Federal Nonnuclear Energy Research and Development Act⁷⁸ what Johnson has called "the most comprehensive Government patent policy provision ever enacted."⁷⁹ In Section 9, Congress for the first and only time set forth detailed criteria to be considered in granting waivers.⁸⁰

75. Impact Memo, *supra* note 20, at 11 n.23.

76. See *supra* notes 71, 73.

77. The Federal Nonnuclear Energy Research and Development Act of 1974, Pub. L. No. 93-577, 88 Stat. 1879, is codified as chapter 74 of Title 42 of the United States Code. Chapter 74 is entitled "Nonnuclear Energy Research." Section 3 of Pub. L. No. 93-577 states in relevant part:

(b) (1) The Congress declares the purpose of this chapter to be to establish and vigorously conduct a comprehensive, national program of basic and applied research and development, including but not limited to demonstrations of practical applications, of all potentially beneficial energy sources and utilization technologies, within the Energy Research and Development Administration.

(2) In carrying out this program, the Administrator of the Energy Research and Development Administration (hereinafter in this chapter referred to as the "Administrator") shall be governed by the terms of this chapter and other applicable provisions of law with respect to all nonnuclear aspects of the research, development, and demonstration program; and the policies and provisions of the Atomic Energy Act of 1954, and other provisions of law shall continue to apply to the nuclear research, development, and demonstration program.

42 U.S.C. § 5902(b)(1988). See also *infra* text accompanying note 91.

78. Pub. L. No. 93-577, 88 Stat. 1879, 1887 (1974).

79. Impact Memo, *supra* note 20, at 12.

80. For a comprehensive report on the legislative history of Section 9, see ERDA 75-16, PATENT POLICIES AFFECTING ERDA ENERGY PROGRAM (1976).

1. History of Section 9

Before looking at the history of Section 9, it should be noted that when Congress abolished the AEC and created the ERDA in the Energy Reorganization Act of 1974,⁸¹ it granted to the ERDA Administrator the powers previously exercised by the AEC but established no new patent provisions. This is probably due to the fact that Congress was working on the legislation that several months later became Section 9 of the Federal Nonnuclear Act. Thus, Section 9 refers to the Administrator rather than the Commission.⁸²

Section 9 represented a compromise between the House and Senate versions of the bills that were under consideration. The original Senate bill would have totally prohibited waiver of title.⁸³ Any change in the compromise language that was eventually enacted would have been a very sensitive issue⁸⁴ for reasons that can only be understood with a bit of background.

During the 1950s and 1960s an amorphous group of Senators and Congressmen strongly advocated a uniform title-taking patent policy for the government. Their principal spokesman was Senator Long of

81. Pub. L. No. 93-438, 88 Stat. 1234 (1974).

82. Although the following discussion refers to the "Administrator," it should be noted that as a result of subsequent legislation creating the Department of Energy, wherever the term "Administrator" appears in Section 9, it is effectively replaced by the "Secretary" of Energy. See *infra* text accompanying notes 106-07.

83. S. CONF. REP. NO. 1563, 93rd Cong., 2d Sess., reprinted in 1974 U. S. CODE CONG. & ADMIN. NEWS 6905, 6909 [hereinafter CONFERENCE REPORT].

84. In this regard, Mr. Roy L. Ash, Director, Office of Management and Budget, stated:

Thus, the resultant language strikes an extremely delicate balance between divergent preferences. Even minor changes in the text of this document are likely to upset the balance to the extent that one or the other of the parties might be obliged to withdraw its support. In the spirit of reciprocity, therefore, the Administration must ask that its endorsement of this proposal be regarded as withdrawn in the event that any changes are made in the text of the agreed-upon language, notwithstanding the fact that such changes might be in the direction of the Administration's preference.

120 CONG. REC. 40,381 (1974). In this same vein, Senators Hart and Long stated:

We should note that the compromise contains many highly interrelated provisions and is quite delicately balanced. While a number of concepts and provisions are not quite what we would advance in a bill of our own, on balance we do believe a fair compromise on an extremely complex and controversial issue has been reached.

Louisiana.⁸⁵ Although a variety of factors informed their position,⁸⁶ these Congressmen shared a basically populist view predicated on the argument that research which is funded by the taxpayer belongs to the taxpayer and should be in the public domain.⁸⁷

This group of Senators was opposed by the Nixon Administration, which sought greater flexibility for agency heads to waive title.⁸⁸ Section 9 represented a close-drawn compromise from which neither side was prepared to move. According to the conference committee:

Section 9 adopts the basic structure of the patent policy of the National Aeronautics and Space Act, with some modifications derived from the Atomic Energy Act. The provisions provide for the Federal Government normally to retain title to inventions developed under ERDA contracts, and for the licensing of ERDA inventions normally to be granted on a nonexclusive basis. Authority to grant waivers and exclusive or partially exclusive licenses is vested in the Administrator to assure flexibility; but only in conformity with specific minimum considerations which have been adopted primarily from the NASA and AEC regulations, and the Presidential Patent Policy Statement. This flexibility permits—but does not require—the Administrator, under carefully delineated conditions, to grant exclusive rights to contractors or inventors in objectively appropriate circumstances. Government patent policy carried out under the NASA and AEC Acts and regulations, and the Presidential Patent Policy Statement with respect to energy technology, has resulted in relatively few waivers or exclusive licenses in comparison with the number of inventions involved. The conference committee expects

85. R. NASH & L. RAWICZ, *supra* note 10, at 90. For Senator Long's views, see Long, *Federal Contract Patent Policy and the Public Interest*, 21 FED. B.J. 7 (1961).

86. Congressman Daddario listed their arguments as threefold: (1) since the government pays the costs of developing the inventions, it should own any patents that result; (2) only by owning the patents can the government assure widespread access to the technological knowledge developed under government-funded R&D contracts; and (3) only by owning the patents to government-funded inventions can the government prevent undue concentration of economic power in a few large business firms. See Daddario, *Effects of Government Patent Policy on Research and Development*, 45 J. PAT. OFF. SOC'Y 663 (1963).

87. Indeed, this view has continued to be expressed by some members of Congress. See, e.g., *infra* text accompanying note 126.

88. Presidential Memorandum for Heads of Executive Departments and Agencies, Subject: Government Patent Policy, 7 WEEKLY COMP. PRES. DOC. 1209 (Aug. 23, 1971)

that similar results will obtain under section 9.⁸⁹

It is unclear, however, which AEC regulations the conference committee was referring to because, as DOE General Counsel Johnson acknowledged in 1983, the AEC had issued no "detailed administrative rules for implementation of statutory waiver provisions."⁹⁰

Section 9 of the Nonnuclear Act did not amend, rescind, repeal, or supercede Section 152 of the Atomic Energy Act of 1954 in any way. Congress intended that Section 9 complement Section 152. As the conference committee stated, "nuclear programs will continue to follow the patent policy of the Atomic Energy Act while nonnuclear programs will follow the patent policy of section 9."⁹¹ Nonetheless, Congress intended that the ERDA act wherever possible to harmonize these two patent policies.⁹²

2. Structure of Section 9

Section 9(a) sets forth a wide range of contractual circumstances in which title to an invention made or conceived in the course of or under any ERDA contract "shall vest in the United States." Additionally, it requires that patents on such inventions must issue to the United States, except in the circumstance wherein the Administrator has properly waived the rights of the United States.⁹³

Section 9(c) gives the Administrator authority to waive rights of the United States in any subject invention or class of subject inventions "if he determines that the interests of the United States and the general public will be best served by such waiver."⁹⁴ Any waiver determination must be based on the following objectives:

- (1) making the benefits of the energy research, development, and demonstration program widely available to the public in the shortest practicable time;
- (2) promoting the commercial utilization of such inventions;
- (3) encouraging participation by private persons in the Administrator's energy research, development, and demonstration program; and
- (4) fostering competition and preventing undue market concentration or the creation or maintenance of other situations

89. CONFERENCE REPORT, *supra* note 83, at 6910.

90. Impact Memo, *supra* note 20, at 11.

91. CONFERENCE REPORT, *supra* note 83, at 6912-13.

92. *Id.*

93. 42 U.S.C. § 5908(a) (1988).

94. *Id.* § 5908(c).

inconsistent with the antitrust laws.⁹⁵

The conference committee recognized, however, "that there may be times when it is not possible to attain each of the[se] objectives immediately and simultaneously for any one determination."⁹⁶ Section 9(d) and (e) set forth the considerations involved for two different types of waivers. Section 9 expressly recognizes that waivers may be sought either at the time an invention is made, or earlier at the time of contracting. The latter situation involves a so-called "advance" waiver. Section 9 treats requirements for advance waivers differently than it does the requirements for identified invention waivers. First, only contractors may seek advance waivers whereas both contractors and inventors⁹⁷ may seek waivers of rights in identified inventions.⁹⁸ Second, the two types of waivers involve somewhat different considerations.

Section 9(d) sets forth eleven specific issues that must be considered for an advance waiver.⁹⁹ In addition, Section 9(j) requires that the small

95. *Id.*

96. CONFERENCE REPORT, *supra* note 83, at 6911.

97. The inventor is the individual who legally makes the invention under the law, whereas the contractor is the employer of the inventor.

98. An identified invention is one that has actually been made, as opposed to one that may be made in the future under the contract.

99. The Administrator shall specifically include as considerations:

- (1) the extent to which the participation of the contractor will expedite the attainment of the purposes of the program;
- (2) the extent to which a waiver of all or any part of such rights in any or all fields of technology is needed to secure the participation of the particular contractor;
- (3) the extent to which the contractor's commercial position may expedite utilization of the research, development, and demonstration program results;
- (4) the extent to which the Government has contributed to the field of technology to be funded under the contract;
- (5) the purpose and nature of the contract, including the intended use of the results developed thereunder;
- (6) the extent to which the contractor has made or will make substantial investment of financial resources or technology developed at the contractor's private expense which will directly benefit the work to be performed under the contract;
- (7) the extent to which the field of technology to be funded under the contract has been developed at the contractor's private expense;
- (8) the extent to which the Government intends to further develop to the point of commercial utilization the results of the contract effort;
- (9) the extent to which the contract objectives are concerned with the public health, public safety, or public welfare;
- (10) the likely effect of the waiver on competition and market concentration; and
- (11) in the case of a nonprofit educational institution, the extent to which such institution has a technology transfer capability and program, approved by the Administrator as being consistent with the applicable policies of this section.

business status of the applicant be taken into account.¹⁰⁰ It is true that the conference committee recognized the need for flexibility in granting waivers under Section 9(d). It noted that:

[T]here may be occasions when application of the various considerations to a particular case could cause conflicting results. In those instances the Administrator will have to reconcile the differences giving due regard to the overall purposes of the patent policy provisions. It is not intended that specific findings be made as to each and every consideration.¹⁰¹

Nevertheless, it was clear that the enumerated factors had to be considered. It followed, therefore, that any regulations under Section 9(d) would have to require a petition for an advance waiver to address each factor.

Section 9(e) sets forth ten specific criteria that must be considered for waiver of rights to an identified invention.¹⁰² In addition, the conference committee stated that because the invention is identified, "the Administrator shall consider each of the enumerated criteria as it specifically applies to that invention."¹⁰³ Again, it followed that any regulations under Section 9(e) would have to require a petition for rights in an identified invention to address each of these considerations.

3. Effect of Section 9

The ERDA, and then the DOE, implemented the requirements of Section 9 by adopting detailed waiver regulations.¹⁰⁴ Insofar as the ERDA was concerned, these regulations served to harmonize the requirements of Section 152 of the 1954 Act with those of Section 9 of the Federal Nonnuclear Act. The regulations were considered to be applicable

100. *Id.* § 5908(j).

101. CONFERENCE REPORT, *supra* note 83, at 6911.

102. It requires the Administrator to specifically include as considerations items (4) through (11) from Section 9(d). See *supra* note 99. In addition, the Administrator must also consider:

- (1) the extent to which such waiver is a reasonable and necessary incentive to call forth private risk capital for the development and commercialization of the invention; and
- (2) the extent to which the plans, intentions, and ability of the contractor or inventor will obtain expeditious commercialization of such invention.

42 U.S.C. § 5908(e) (1988).

103. CONFERENCE REPORT, *supra* note 83, at 6911.

104. 41 C.F.R. § 9-9.109-6 (1988).

regardless of whether the invention was made under a contract covered by Section 152 or one covered by Section 9.¹⁰⁵

The ERDA existed for three years before the DOE was established.¹⁰⁶ All functions of the ERDA Administrator were transferred to the Secretary of Energy.¹⁰⁷ The DOE Organization Act contained no substantive patent provisions. Accordingly, the DOE waiver regulations that became effective June 30, 1979 state that DOE patent policy is governed by Section 152 of the Atomic Energy Act of 1954 as amended and Section 9 of the Federal Nonnuclear Energy Research and Development Act of 1974.¹⁰⁸ They also state that, where not inconsistent with the requirements of Section 152 and Section 9, waiver determinations will also be guided by the revised Presidential Memorandum and Statement of Government Patent Policy issued August 23, 1971.¹⁰⁹

Under these regulations, the Secretary of Energy or a designee is required "at a minimum" to consider the criteria set forth in Section 9(d).¹¹⁰ In addition, with regard to advance waivers, these regulations added another criterion: "the extent to which the work to be performed under the contract is useful in the production or utilization of special nuclear material or atomic energy."¹¹¹ This was presumably intended to "harmonize" Section 152 with Section 9 by combining requirements of both sections.

In 1983 DOE General Counsel Johnson summarized this history as follows:

In summary, the legislative history of both Section 152 and Section 9 establishes that the statutory provisions provide for the Government normally to retain title to inventions developed under contracts. Both sections have been given administrative interpretations for many years. Section 9 has far more detailed guidance than does Section 152; yet the guidance in Section 9 contains considerations which would normally be considered in a waiver situation under Section 152. The guidance focuses on the effect the waiver would have on the Government's research, development, and demonstration effort, the objectives of the Government program, and

105. See Impact Memo, *supra* note 20, at 16.

106. DOE Organization Act, Pub. L. No. 95-91, § 201, 91 Stat. 565, 569 (1977).

107. *Id.* § 301 at 577.

108. 41 C.F.R. § 9-9.109-6(a)(1) (1988).

109. *Id.* § 9-9.109-6(a)(3).

110. *Id.* § 9-9.109-6(b).

111. *Id.*

the proper ultimate end use of the patent. Thus, as a mode of harmonization, ERDA found the criteria of Section 9 and the considerations of Section 152 to be compatible and amalgamated them into regulations which are currently found at 41 CFR 9-9.¹¹²

This summary was accurate insofar as it applied to the situation as it existed in the late 1970s, but it contained a crucial defect when applied to the situation that existed in 1983. Simply put, it ignored the existence of the Bayh-Dole Act, enacted in 1980.

F. *The Bayh-Dole Act*

On December 12, 1980, Congress enacted the first patent policy statute applicable to all federal agencies, including DOE. This statute, which added Chapter 18 to Title 35 of the United States Code, was the Bayh-Dole Act.¹¹³ It set forth as the policy and objectives of Congress:

[T]o 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.¹¹⁴

To accomplish these purposes, the Act set up a system of criteria for

112. Impact Memo, *supra* note 20, at 16.

113. Pub. L. No. 96-517, § 6(a), 94 Stat. 3015, 3018-29 (1980). The official title of Pub. L. No. 96-517 is the University and Small Business Patent Procedure Act of 1980, but it is more commonly known as the Bayh-Dole Act. As initially codified, the Bayh-Dole Act was designated as chapter 38 of Title 35 of the U.S.C. However, Pub. L. No. 97-256, § 101(5), 96 Stat. 816 (1982) redesignated chapter 38 as chapter 18.

114. 35 U.S.C. § 200 (1988).

allocating rights in inventions made under contracts between government agencies and small businesses or nonprofit organizations.

1. Allocation of Rights Under the Bayh-Dole Act

The disposition of rights provisions in the Bayh-Dole Act represented a fundamental reversal of the presumptions of ownership that were present in Section 152 of the 1954 Act and Section 9 of the Federal Non-nuclear Act. Instead of placing a presumption of ownership in the federal government, these provisions set up a presumption that ownership of a subject invention¹¹⁵ under a funding agreement¹¹⁶ with a small business or nonprofit organization would be in the contractor. The small business or nonprofit organization contractor must, however, "elect to retain title" within a reasonable period of time after disclosing the subject invention to the funding agency in order to retain title.¹¹⁷

For this presumption to remain valid, however, the funding agreement must require that the contractor:

- (1) 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) 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) . . . 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.¹¹⁸

115. A "subject invention" is defined by the Act as "an invention of the contractor conceived or first actually reduced to practice in the performance of work under a funding agreement." 35 U.S.C. § 201 (1988). See also *supra* note 8.

116. A "funding agreement" is defined by the Act as "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." 35 U.S.C. § 201 (1988).

117. See *id.* § 202(a).

118. *Id.* § 202(c).

When a contractor does elect to retain title, the funding agency retains "a nonexclusive, nontransferable, irrevocable, paid-up license to practice or have practiced for or on behalf of the United States [the] subject invention throughout the world."¹¹⁹

The presumption of ownership in the contractor that is found in the Bayh-Dole Act is clearly contrary to the presumption of ownership in the government found in a number of other statutes. The Bayh-Dole Act reconciles this apparent conflict by expressly stating that it takes precedence over any other Act which would require a disposition of rights in a manner inconsistent with its provisions.¹²⁰ The Act expressly lists twenty-two statutory provisions over which it takes precedence. This list includes Section 152 of the 1954 Act and Section 9 of the Federal Non-nuclear Act.¹²¹

2. History of the Bayh-Dole Act

The fundamental change in the Congressional policy regarding patent rights, as reflected in the Bayh-Dole Act, did not come about rapidly or easily. The Bayh-Dole Act was the culmination of significant Congressional consideration and debate in the late 1970s.¹²² The legislative history¹²³ makes clear that the Act arose out of a deep concern about the ability of U.S. industry to keep pace with its foreign competition in technological innovation.¹²⁴ There was a clear-cut perception that the problem was intimately connected with the role of the federal government in funding R&D and transferring it to the private sector.¹²⁵

119. *Id.*

120. *Id.* § 210(a).

121. *Id.*

122. See R. NASH & L. RAWICZ, *supra* note 10, at 146-47.

123. See S. REP. NO. 480, 96th Cong., 1st Sess. (1979) [hereinafter 1979 SENATE REPORT], accompanying S. 414 as amended, and H.R. REP. NO. 1307, 96th Cong., 2d Sess., pt. 1, reprinted in 1980 U.S. CODE CONG. & ADMIN. NEWS 6460 [hereinafter 1980 HOUSE REPORT], accompanying H.R. 6933. These reports set forth the legislative history pertaining to the Bayh-Dole Act. Although the Senate version of the legislation resulted in the Bayh-Dole Act, the House Report nonetheless serves along with the Senate Report to provide the background against which Congress acted in passing the Bayh-Dole Act.

124. See, e.g., 1980 HOUSE REPORT, *supra* note 123, at 6460; 1979 SENATE REPORT, *supra* note 123, at 19.

125. As stated in the 1980 HOUSE REPORT, *supra* note 123:

[T]he effective commercialization of government financed research is becoming an ever more important issue for those who are concerned with industrial innovation.

....

The crisis in U.S. productivity and the governmental role in it has not gone unnoticed, however. In May of 1978 the President called for a major policy review of industrial innovation as the key to increased productivity in the United

There is little question that Congress was fully aware that the Bayh-Dole Act represented a fundamental departure from the earlier title-taking policy that had been inherent in such statutory provisions as Section 152 and Section 9. Some members of Congress were not pleased with this departure. As Representative Jack Brooks stated in presenting his dissenting views on the House version of the legislation that ultimately became the Bayh-Dole Act:

The major problem I have with H.R. 6933 is that it violates a basic provision of the unwritten contract between the citizens of this country and their government; namely, that what the government acquires through the expenditure of its citizens' taxes, the government owns. Assigning automatic patent rights and exclusive licenses to companies or organizations for inventions developed at government expense is a pure giveaway of rights that properly belong to the people.¹²⁶

States. This White House call to action resulted in the creation of an advisory committee of more than 150 senior representatives from the industrial, public interest, labor, scientific, and academic communities. The work of the Advisory Committee was overseen by a cabinet level coordinating committee chaired by the Secretary of Commerce. The Committee studied all the areas in which federal government policy impacts on productivity and innovation in the private sector. These fields of inquiry included: economic and trade policy; environmental, health and safety regulations; anti-trust enforcement; federal procurement policies; and federal patent and information policies.

When the advisory committee issued its 300 page report last year, a key segment contained recommendations on government patent policy. These recommendations, in turn, were received by the President, and formed the basis of a major legislative proposal which was conveyed to the Congress. Special emphasis was placed on the role of the patent system and the patent policy regarding government funded research *in promoting industrial innovation*.

Id. at 6461-62 (emphasis added).

As further pointed out in the 1979 SENATE REPORT, *supra* note 123:

One factor that can be clearly identified as a part of this problem is the inability of the Federal agencies to deliver new inventions and processes from their research and development programs to the marketplace where they can benefit the public. A prime cause of this failure is the existence of ineffective patent policies regarding ownership of potentially important discoveries. In general, the present patent policies require contractors and grantees to allow the funding agency to own any patentable discoveries made under research and development supported by the Federal Government unless the contractor or grantee successfully completes lengthy waiver procedures justifying why patent rights should be left to the inventor.

Id. at 2.

126. 1980 HOUSE REPORT, *supra* note 123, at 6487.

These words succinctly summarized the populist view that had long been in the ascendancy. This philosophy, however, would no longer prevail.

While Representative Brooks stressed that that which belongs to the government belongs to the people, he failed to appreciate the consequences for U.S. economic competitiveness of a policy mandating that the government retain title to all subject inventions arising out of federal R&D contracting.

Apparently, Representative Brooks was not convinced by the argument that had persuaded a majority of Congress that the government is not and should not be in the business of commercializing inventions arising out of the R&D that it funds. As a practical matter, such inventions are almost never in a commercial form when they are first reduced to practice. To the extent that such inventions are ultimately commercialized, experience indicates that in many instances more investment is required in the commercialization effort than is required to actually make the inventions in the first place.¹²⁷ That which belongs to the people may belong to everybody; but the end result is that that which belongs to everybody belongs to nobody. Inventions which continued to belong to the government were simply lying fallow. The inventions failed to be commercialized because the private sector was not willing to take the developmental investment risk associated with commercialization when competitors could then manufacture the commercial product with no legal liability.¹²⁸

In a broader context the Congressional concern was set forth as follows:

It has been well demonstrated over a number of years that Federal agencies are not as successful in delivering new products and inventions to the marketplace as the private sector. The result is that the public is not receiving the full benefits of the research and development efforts that it is supporting. It is

127. See generally, Mansfield, *Industrial Innovation in Japan and the United States*, 241 SCIENCE 1769 (1988).

128. In terms of economic theory, government-owned inventions are what economists refer to as "public goods." They are not commercialized, or are under-commercialized, because the usual economic incentives to commercialize do not exist. One reason for this is that once "public goods" are supplied to one person, they are available to others at no additional cost, for one person's enjoyment of the goods does not interfere with the concurrent ability of others to use and enjoy them. If others may benefit without cost from previous commercialization efforts, there is essentially no incentive to risk capital to commercialize, and the inventions lie fallow even though there may be an actual collective demand for them in a commercial form from the general public. See generally, R. MUSGROVE & P. MUSGROVE, PUBLIC FINANCE IN THEORY AND PRACTICE 49-80 (2d ed. 1976).

in the public interest to see that new discoveries are commercialized as quickly as possible without the artificial restraints caused by the unnecessary delays and uncertainties of the present Government patent policies which only serve to make an already risky attempt to develop new products more of a burden on interested companies.¹²⁹

The recognition of this problem was one of the major reasons why the assignment of rights provisions of the Bayh-Dole Act came into being. Another reason for the Act was that Congress wanted to mitigate the many problems associated with the DOE waiver process,¹³⁰ including the inordinate delays that were then being experienced in completing the waiver process.¹³¹

3. DOE Patent Policy under the Bayh-Dole Act

The language of the Bayh-Dole Act must be interpreted against the above background and perspective. Although it has been asserted that the Act provided a uniform government patent policy covering small businesses and nonprofit organizations,¹³² this is not the case. As enacted in 1980, the Bayh-Dole Act contained an important proviso stating that a funding agreement may preclude the right of a small business

129. 1979 SENATE REPORT, *supra* note 123, at 19.

130. As stated in *id.* :

The bill should substantially reduce the amount of time and paperwork now being devoted to the processing of patent waiver petitions by the agencies and will enable the agency patent staffs to put this time into other areas of responsibility. It will also remove from the shoulders of the Government patent attorneys the onerous burden of trying to determine the ownership of patents arising from the agencies' research and development grants and contracts. Many times these attorneys are forced by agency patent policies to retain title to inventions that the agency simply is not able to develop. S. 414 will serve to make sure that the maximum return is received from the multibillion dollar Government research and development effort.

Id. at 30.

In view of this language, it is interesting to note the efforts that would be put forth in subsequent years within DOE to retain a significant amount of the "onerous burden" on the shoulders of its patent attorneys. See *infra* text accompanying notes 138-47.

131. As stated in the 1980 HOUSE REPORT, *supra* note 123:

For example, delays in acting on patent right waiver requests, which now take on the average a year and a half in agencies like the Department of Energy, will be eliminated.

Id. at 6464.

132. See R. NASH & L. RAWICZ, *supra* note 10, at 145.

or nonprofit organization to elect title to a subject invention:

- (i) when the funding agreement is for the operation of a Government-owned research or production facility;
- (ii) in exceptional circumstances when it is determined by the agency that restriction or elimination of the right to retain title to any subject invention will better promote the policy and objectives of this chapter; or
- (iii) when it is determined by a Government authority which is authorized by statute or Executive order to conduct foreign intelligence or counter-intelligence activities that the restriction or elimination of the right to retain title to any subject invention is necessary to protect the security of such activities.¹³³

Clearly, to the extent that any of these exceptions were applied to subject inventions generated by small businesses or nonprofit organizations, the government patent policy as applied to such entities would not be uniform.

The DOE did not hesitate to take advantage of the opportunity provided by these exceptions. A number of DOE laboratories are operated by nonprofit institutions.¹³⁴ For the stated purpose of avoiding inconsistency in treatment of rights in inventions arising out of work performed at its various government-owned, contractor-operated ("GOCO") facilities, the DOE immediately took advantage of exception (i) noted above, so that no nonprofit contractor operating any DOE GOCO facility was permitted to elect title to subject inventions. While this may have made DOE patent policy more uniform, it served to make overall government patent policy less uniform.

G. The 1983 Presidential Patent Policy Statement

1. Summary of the Statement

The next attempt to formulate a more uniform federal patent policy came on February 18, 1983. On that date, President Reagan issued a new patent policy statement applicable to all executive agencies. This

133. 35 U.S.C. § 202(a) (1982).

134. These include Brookhaven National Laboratory, Argonne National Laboratory, Los Alamos National Laboratory, Lawrence Livermore National Laboratory, and Lawrence Berkeley Laboratory.

memorandum directed:

To the extent permitted by law, agency policy with respect to the disposition of any invention made in the performance of a federally-funded research and development contract, grant or cooperative agreement award shall be the same or substantially the same as applied to small business firms and nonprofit organizations under Chapter 38 of Title 35 of the United States Code.¹³⁵

Chapter 38 of Title 35 was the original codification of the Bayh-Dole Act.¹³⁶ The "Fact Sheet" that accompanied the Presidential Memorandum pointed out that those agencies such as NASA and the DOE operating under statutes "which are inconsistent in respects with the Memorandum" were expected to make maximum use of the flexibility available to them under existing statutes to comply with the provisions and spirit of the Memorandum.¹³⁷

The Presidential Memorandum was of considerable interest to those DOE laboratories operated by nonprofit organizations. The Memorandum clearly indicated that the DOE was now required to exercise its statutory discretion or "flexibility" to grant title in government-funded inventions to nonprofit organizations in accordance with the provisions of the Bayh-Dole Act. This in turn suggested that the DOE was obligated to modify the funding agreements for the operation of these GOCO facilities to permit the nonprofit organizations to take title to subject inventions in accordance with the provisions of the Bayh-Dole Act.

2. *The DOE Response to the Presidential Memorandum*

The DOE response to the Presidential Memorandum was prompt and to the point. In three position papers issued through the office of the DOE General Counsel, the DOE effectively stated that it was "precluded by law" from complying with the Presidential Memorandum.¹³⁸ In the

135. Presidential Memorandum to the Heads of Executive Departments and Agencies, Subject: Government Patent Policy, 1983 PUB. PAPERS 248 (Feb. 18, 1983).

136. Chapter 38 had been changed to Chapter 18. See *supra* note 113. This occurred six months prior to the date of the Presidential Memorandum, but word sometimes gets around slowly in Washington.

137. Office of the Press Secretary to the President, Fact Sheet (Feb. 18, 1983).

138. The first of these position papers was a paper by DOE Assistant General Counsel for Patents James Denny, entitled "Future Developments in Federal Patent Policy" presented at an APLA/BNA Patent Conference on March 24, 1983 [hereinafter Denny Paper]. Another one of the papers was the Impact Memo that has been discussed *supra*. The third was another memorandum signed by DOE General Counsel Tenney Johnson on May 5, 1983 and entitled "Memorandum on the Patent Policy Applicable to DOE's GOCO

first of these papers, DOE Assistant General Counsel for Patents James Denny contended that agencies such as NASA and the DOE have no flexibility or discretion that they can apply to the allocation of rights in subject inventions. To argue otherwise, according to Denny, would place these agencies "in a dilemma between finding that they have been interpreting their legislation incorrectly for all these years, or simply saying that their laws, having no flexibility, are not affected by a Presidential Memorandum, notwithstanding the statement in the White House Fact Sheet."¹³⁹

The dilemma postulated by Denny was predicated on a fundamental fallacy, namely, that the Bayh-Dole Act does not take precedence over Section 152 of the Atomic Energy Act of 1954 and Section 9 of the Federal Nonnuclear Energy Research and Development Act of 1974. Rather, exactly the reverse is true.¹⁴⁰ The Bayh-Dole Act gave the DOE precisely the "flexibility" or discretion mentioned in the Fact Sheet to grant title to subject inventions to nonprofit contractors operating GOCO facilities. DOE General Counsel Johnson perpetuated this fallacy in the DOE position by arguing that the exceptions set forth at 35 U.S.C. § 202(a) were mandatory rather than discretionary.¹⁴¹

Johnson addressed the question in two memoranda (the "Impact Memo"¹⁴² and the "GOCO Memo"¹⁴³). The Impact Memo framed the issue as: "[h]ow the present statutory patent policy of the Department of Energy is affected by the President's Memorandum on Government Patent Policy."¹⁴⁴ It concluded:

The constituent patent policies of DOE require that unless a contractor falls within the ambit of the Bayh-Dole Act provisions, a presumption of title to inventions in DOE is raised. The Presidential Memorandum on Government Patent Policy adopts the opposite presumption, namely, title in the contractor/grantee, or in other words, a blanket waiver policy with limited exceptions. This presumption is inconsistent with DOE's statutes. . . . [T]he waiver authority of the Atomic Energy Act and of the Federal Nonnuclear Act was not

Contracts with Small Business Firms and Nonprofit Organizations" [hereinafter GOCO Memo].

139. Denny Paper, *supra* note 138, at 6-45.

140. See 35 U.S.C. § 210(a) (1988); *supra* text accompanying notes 120-21.

141. See *infra* note 149 and accompanying text.

142. See *supra* note 20.

143. See *supra* note 138.

144. Impact Memo, *supra* note 20, at 1.

intended to provide a policy of granting waivers as the normal course of business, but rather was intended to provide a policy that is presumptively title-taking with only individually justified waivers. Thus, the reverse presumption adopted in the Presidential Memorandum is not "permitted by law" with respect to inventions under the Atomic Energy Act and the Federal Nonnuclear Act. The Memorandum, which applies only "to the extent permitted by law," does not require such a reverse presumption. Therefore, the patent policy of Section 152 of the Atomic Energy Act and Section 9 of the Federal Nonnuclear Act remains in effect except where the Bayh-Dole Act requires a different disposition of rights in contracts with small businesses and nonprofits.¹⁴⁵

The GOCO memo addressed a different issue, namely, whether the Bayh-Dole Act "changes the patent policy applicable to DOE's Government-owned, contractor-operated (GOCO) facilities run by small business firms (if any) and nonprofit organizations."¹⁴⁶ It concluded:

[T]he Bayh-Dole Act is better construed as being consistent with Section 152 of the Atomic Energy Act and Section 9 of the Federal Nonnuclear Act in the areas of discretionary exceptions of the Bayh-Dole Act and therefore as not taking precedence over those statutes in such areas. Consequently, the patent policy applicable to DOE's contracts with small business firms and nonprofit organizations for the operation of its GOCO facilities need not be changed as a result of the Bayh-Dole Act.¹⁴⁷

In summary, these memos expressed the DOE position that the Bayh-Dole Act did not and could not take precedence over the guidance provided by the Atomic Energy Act and the Federal Nonnuclear Act. Further, according to the DOE, to the extent precedence of the Bayh-Dole Act appeared to be required to implement the policy of the Presidential Memorandum, it was not permitted by law. Therefore, the DOE contended, the Presidential Memorandum did not apply to rights in subject inventions arising out of the operation of DOE GOCO facilities. However, this position was based on false premises. It relied entirely on

145. *Id.* at 17-18.

146. GOCO Memo, *supra* note 138, at 1.

147. *Id.* at 7.

the legislative history of the Atomic Energy Act and the Federal Nonnuclear Act, and simply ignored or misrepresented both the language and the legislative history of the Bayh-Dole Act.

Thus, the issue as framed in the GOCO Memo was incorrect and irrelevant to the more basic issue of whether the DOE was precluded by law from complying with the Presidential Memorandum. The issue was not whether the Bayh-Dole Act changed the patent policy applicable to the DOE GOCO facilities operated by small businesses and nonprofit organizations. No one seriously contended that the Bayh-Dole Act *in and of itself* either changed or required a change in the DOE's patent policy with respect to inventions made at such GOCO facilities. Rather, it was argued that the Bayh-Dole Act granted the DOE discretionary authority to change its patent policy with respect to such GOCO facilities, and the Presidential Memorandum required the DOE to exercise such discretion so as to grant title to subject inventions to the nonprofit contractors operating such facilities. By framing the issue as it did, the GOCO memo simply begged the question of whether the Bayh-Dole Act made the patent policy applicable to DOE GOCO facilities operated by nonprofit contractors discretionary with the DOE rather than mandated by the legislative history of Section 152 of the 1954 Act or Section 9 of the Federal Nonnuclear Act.

Of the three DOE position papers, only the GOCO Memo actually referred to the codification of the Bayh-Dole Act in any detail.¹⁴⁸ It argued that the Act was not applicable to subject inventions made at DOE GOCO facilities because the Act itself:

in the three discretionary areas does not require a disposition of rights inconsistent with any other statute that might be applicable, *because it excepts itself altogether*. In other

148. The GOCO Memo correctly pointed out that 35 U.S.C. § 202(a) as in effect in 1983 stated: "Each nonprofit organization or small business firm may . . . elect to retain title to any subject invention: *Provided, however*, that a funding agreement may provide otherwise" with regard to three enumerated exceptions. 35 U.S.C. § 202(a) (1988) (emphasis added). It went on to acknowledge that since 35 U.S.C. § 210(a) expressly provides for "this chapter" (Bayh-Dole Act) to take precedence over Section 152 of the Atomic Energy Act of 1954 and Section 9 of the Federal Nonnuclear Act to the extent that they would require a different disposition of rights in subject inventions of small business firms or nonprofit organizations, "[t]he Bayh-Dole Act changed DOE's patent policy with regard to small businesses and nonprofits." GOCO Memo, *supra* note 138, at 2. It also admitted that "the Bayh-Dole Act normally takes precedence over Section 152 of the Atomic Energy Act and Section 9 of the Federal Nonnuclear Act as to contracts with small business firms and nonprofit organizations since the latter statutes require title to inventions to vest in the Government, which is a disposition of rights inconsistent with that of the Bayh-Dole Act." *Id.*

words, since the Bayh-Dole Act excepts itself in three specific situations, it does not take precedence over other Acts in those situations, since whatever disposition of rights to inventions those other Acts may require is, by virtue of the Bayh-Dole Act's making itself not applicable, not inconsistent with Bayh-Dole.¹⁴⁹

However, the conclusion is incorrect because it is based on an erroneous assumption that the exceptions are mandatory rather than discretionary.¹⁵⁰

Neither in its express language nor in its legislative history did the Bayh-Dole Act except itself in the three situations set forth in 35 U.S.C. § 202(a) and discussed above.¹⁵¹ To implement a mandatory exception, the statutory language would have used the mandatory "shall," which Congress deliberately did not use, rather than the discretionary "may," which Congress did use. Moreover, the legislative history makes clear that "may" as used in the context of the GOCO exception was intended to confer discretion rather than obligation. Indeed, the legislative history expressly states that agencies can allow nonprofit GOCO contractors to retain rights in subject inventions.¹⁵²

As a consequence, the GOCO Memo was incorrect in stating that the Bayh-Dole Act excepts itself altogether in the context of the operation of GOCO facilities by nonprofit contractors. To the contrary, the Bayh-Dole Act gave the DOE the discretionary option to use funding agreements which could either permit or refuse the GOCO contractors the right to elect to retain title to subject inventions. By so doing, the Bayh-Dole Act did take precedence over Section 152 of the 1954 Act and Section 9 of the Federal Nonnuclear Act.

In brief, the Bayh-Dole Act, by its express wording, gave the DOE the right, if it so chose, to permit nonprofit contractors operating GOCO facilities to elect to retain title to subject inventions. The Presidential

149. GOCO Memo, *supra* note 138, at 4-5 (emphasis added).

150. For whatever reason, DOE General Counsel Johnson chose simply to ignore the obvious inconsistency between calling the exceptions "discretionary" in the GOCO Memo while at the same time arguing that they were in effect mandatory.

151. 35 U.S.C. § 202(a)(i)-(iii) (1982); see *supra* text accompanying note 133.

152. The 1979 SENATE REPORT, *supra* note 123, states:

Federal agencies are permitted to use different provisions in three categories of situations. First, contracts for the operation of Government-owned facilities may contain other provisions, *although agencies are not precluded from also allowing such contractors to retain rights in inventions.*

Id. at 31 (emphasis added).

Patent Policy Statement then obligated the DOE to exercise that discretion by granting title to such contractors. The DOE became the only major agency which not only failed to comply with that Policy Statement, but also issued legal opinions that it was precluded by law from so doing. The DOE's position should be contrasted with NASA's posture. Although NASA had similar prior patent legislation and a history of legislative interpretation as fully restrictive as that on which the DOE sought to rely, NASA promptly complied with the policy statement.¹⁵³

H. P.L. 98-620

Based on the Johnson memoranda, the DOE refused to comply with the Presidential Memorandum and did not modify the operating contracts for those GOCO facilities operated by nonprofit contractors. Congress soon acted, however, to emphasize a different perspective than that espoused by the DOE. In late 1984, Congress enacted and President Reagan signed the Trademark Clarification Act of 1984 ("P.L. 98-620").¹⁵⁴ Section 501 of P.L. 98-620 consisted of a series of amendments to the Bayh-Dole Act.

As introduced, each of the bills¹⁵⁵ that led up to the P.L. 98-620

153. Although Denny argued that NASA was "precluded by law" from complying with the Presidential Memorandum, *see supra* text accompanying note 139, less than two weeks after the Johnson memoranda were signed, NASA on May 17, 1983 issued interim regulations bringing it into full compliance with the patent policy set forth in the Presidential Memorandum. *See Field, Brief Survey of and Proposal for Better Reconciliation of the Options in Patent, Trademark, Copyright and Related Law*, 26 *IDEA* 57 (1985); 14 *C.F.R.* § 1245 (1988).

154. Pub. L. No. 98-620, 98 Stat. 3335 (1984).

155. A perceived reluctance on the part of various agencies to abide by the intent of the Bayh-Dole Act and the Presidential Patent Policy Statement caused Senator Dole to introduce new patent legislation in the Senate on November 18, 1983. In introducing his Uniform Patent Procedures Act of 1983, S. 2171, 98th Cong., 1st Sess. (1983), Senator Dole said that it would "unify and simplify" the patent procedures of the various agencies and "would end, once and for all, the frustrating bureaucratic maze which has hindered the retention of patent discoveries by the private sector and thereby inhibited the commercialization of those discoveries." He also noted that "[c]ompared to a licensing rate of 33 percent for university developed inventions, the Government has licensed less than 4 percent of inventions owned by it to the private sector for commercial use. This is primarily because of chaotic and inefficient agency patent procurement policies that strangle innovation on red tape." He stated that the bill "would eliminate this waste by allowing all contractors clear ownership of the inventions they make under Government research and development contracts and grants, while protecting the legitimate rights of the agencies to use the discoveries royalty free. In this way, it would encourage the private marketing of new discoveries and thus stimulate innovation."

A companion bill, H.R. 4964, 98th Cong., 2d. Sess. (1984), was introduced in the House of Representatives by Representative Sensenbrenner. In his introductory remarks he stated: "The retention by the Federal Government of the title to any patents developed by federally sponsored research and development is counterproductive, since the Federal Government cannot commercialize the market products or processes and the absence of

amendments would have repealed Section 152 of the Atomic Energy Act of 1954 and most of Section 9 of the Federal Nonnuclear Energy Research and Development Act of 1974. They would also have required the DOE to permit the operator of a GOCO facility that conducted research and development to elect to take title, with limited exceptions, to government-funded inventions made at that facility. This policy would have applied whether the operator was a big business or a nonprofit contractor. The DOE strongly opposed these bills as they were introduced. It sought to have them amended to retain a specific exemption for contractors operating GOCO facilities. The DOE argued strenuously for its position, but it became apparent that many in Congress wanted to expand the coverage of the Bayh-Dole Act to include the right to elect title to subject inventions by all nonprofit contractors including those operating GOCO facilities. The result of the debate was that P.L. 98-620 deleted the GOCO exception¹⁵⁶ of 35 U.S.C. § 202(a) and replaced it with the following:

Provided, however, That a funding agreement may provide otherwise . . . (iv) when the funding agreement includes the operation of a Government-owned, contractor-operated facility of the Department of Energy primarily dedicated to that Department's naval nuclear propulsion or weapons related programs and all funding agreement limitations under this subparagraph on the contractor's right to elect title to a subject invention are limited to inventions occurring under the above two programs of the Department of Energy.¹⁵⁷

The effect of this amendment was twofold: (1) the DOE could not exempt nonprofit contractors operating GOCO facilities from the right to elect title to subject inventions unless such facility was primarily dedicated to naval nuclear propulsion or nuclear weapons programs; and (2) if the DOE applied the exception to such a facility, the exception was limited to inventions under these two programs.¹⁵⁸

exclusivity, which is received through a patent, prevents the private sector from investing the capital necessary to market the products or processes." On March 1, 1984, Representative Fuqua introduced H.R. 5003, 98th Cong., 2d. Sess. (1984), which was similar to S. 2171 and H.R. 4964.

156. See *supra* text accompanying note 133.

157. 35 U.S.C. § 202(a)(iv) (1988).

158. Although there is a Senate Report 98-662 which accompanies S. 2171, that report does not provide a correct legislative history because it refers to an earlier version of S. 2171 before it was amended in the form that was eventually enacted. Rather, as Representative Fuqua pointed out on October 9, 1984, almost every provision of the final legislation came from H.R. 5003. He referred his colleagues to H.R. REP. NO. 983, 98th Cong., 2nd Sess., pt. 1 (1984), for an explanation of those provisions. Thus, H.R. REP. NO. 983 more

But 35 U.S.C. § 202(a) as amended by P.L. 98-620 did not *require* the DOE to apply this exception to GOCO facilities operated by nonprofit contractors. Instead, the statute continued to render any such action discretionary with the DOE. Nonetheless, the DOE promptly indicated its intention to apply this exception to the only two GOCO facilities to which it could be applied: Los Alamos National Laboratory and Lawrence Livermore National Laboratory.¹⁵⁹

On February 5, 1985, Secretary of Energy Donald Hodel announced a formal DOE patent policy.¹⁶⁰ According to Secretary Hodel, the DOE would incorporate the results of its programs and missions into the mainstream of American commerce. He stated that “[i]t is the policy of the Department to allow contractors to retain title to inventions to the maximum extent possible consistent with the President’s Memorandum on Patent Policy, applicable statutory authority and mission requirements.”¹⁶¹

On February 6, 1985, Secretary Hodel approved a statement of “Policy for Research and Development Facilities in Defense Programs.”¹⁶² This policy statement specifically referred to the three major weapons research and development facilities funded by the DOE: Sandia Laboratories, Los Alamos National Laboratory, and Lawrence Livermore National Laboratory. With respect to these facilities, the policy stated: “New technologies developed by Defense Programs R&D facilities will be transferred to private industry to the extent practicable if such transfer will not endanger national security.”¹⁶³

But despite Secretary Hodel’s announcements, the DOE did not permit the University of California, as operating contractor at the Los

correctly presents the legislative history of the language of the amendments. See the colloquy between Representatives Fuqua and Lujan at 130 CONG. REC. H11,614-615 (daily ed. Oct. 9, 1984).

159. The exception was applicable to these two facilities because they were the only GOCO facilities operated by a nonprofit contractor, the University of California, which were primarily dedicated to the weapons program of the DOE. All other GOCO facilities primarily dedicated to the weapons program or the naval nuclear propulsion program were operated by large business contractors and hence did not come within the coverage of 35 U.S.C. § 202(a).

160. This is somewhat remarkable in view of the long history of the DOE and its predecessor agencies. The DOE prior to this time had no formal patent policy statement.

161. Memorandum from Secretary of Energy Donald Hodel to Assistant Secretaries and Operations Office Managers, Subject: Department Patent Policy (Feb. 5, 1985).

162. Memorandum from Assistant Secretary for Defense Programs William Hoover to Secretary of Energy Donald Hodel entitled “Policy for Research and Development Facilities in Defense Programs” (Feb. 5, 1985), requesting approval to release and promulgate the policy set forth in the memorandum. On February 6, 1985, Secretary Hodel approved release of the policy statement.

163. *Id.*

Alamos and Livermore Laboratories, to retain title to inventions to the maximum extent possible. Despite the directives of the President's Memorandum and the Bayh-Dole Act as amended by P.L. 98-620, the DOE apparently continued to adhere to the position that it was "precluded by law" from so doing.¹⁶⁴

The language of 35 U.S.C. § 202(a) as amended seemed clearly to suggest that the DOE had discretion to provide contractually for a two-tiered system of disposition of title to subject inventions at Los Alamos and Livermore Laboratories. Under such a system, the University would have the right to elect title only to those subject inventions not covered by the weapons program exception.¹⁶⁵ The question of which specific inventions fell under this exception then arose. The statute referred to inventions made under the weapons program, but it was unclear what this meant. The final interim regulations issued under P.L. 98-620 on July 14, 1986, took the position that the exception applied to any subject invention that "occurred under activities funded" by the weapons program of the DOE.¹⁶⁶ Although this interpretation appears to be supported by the legislative history,¹⁶⁷ it is unusual that the method of disposition of rights to subject inventions should be determined by the source of funding rather than by the subject matter of such inventions.¹⁶⁸

I. 42 U.S.C. § 7261a

Not all members of Congress were happy with the passage of P.L. 98-620. In particular, certain members of the House Armed Services Committee believed that the legislation had been drafted to limit or restrict the jurisdiction of the Committee over the DOE weapons laboratories. Thus, the House Armed Services Committee assumed primary jurisdiction over new patent legislation pertaining to disposition of rights in subject inventions made at the DOE weapons laboratories. The result was effectively a disposition of rights section (although it was not called that) added to the Department of Energy National Security and Military Applications of Nuclear Energy Act of 1987, codified at 42 U.S.C.

164. The DOE also precluded Sandia from retaining title to subject inventions to the maximum extent permitted by the President's Memorandum, but for a different reason: Sandia was ostensibly operated by a large for-profit business (although for the sum of one dollar per year) and hence did not come within the ambit of Pub. L. No. 96-517.

165. Neither laboratory performs work funded by the naval nuclear propulsion program.

166. See 37 C.F.R. § 401.14(b) (1989).

167. See H.R. REP. NO. 983, *supra* note 158.

168. The more rational approach is clearly to base such disposition on the subject matter since that is what is fundamentally at issue in the disposition.

§ 7261a.¹⁶⁹ The title given to this section, "Protection of sensitive technical information," is a misnomer. The statute is concerned solely with disposition of rights to certain inventions made with DOE funding. Regardless of whether disposition is in the government or the contractor, the fact of that disposition does not per se do anything to protect against the improper dissemination of sensitive technical information.

According to 42 U.S.C. § 7261a(a)(1):

Whenever any contractor makes an invention or discovery to which the title vests in the Department of Energy pursuant to exercise of § 202(a)(ii) or (iv) of Title 35, or pursuant to [Section 152 of the 1954 Atomic Energy Act or Section 9 of the Federal Nonnuclear Act] in the course of or under any Government contract or subcontract of the Naval Nuclear Propulsion Program or the nuclear weapons programs or other atomic energy defense activities of the Department of Energy and the contractor requests waiver of any or all of the Government's property rights, the Secretary of Energy may decide to waive the Government's rights and assign the rights in such invention or discovery.¹⁷⁰

The statement that the Secretary may waive the government's rights in such inventions or discoveries adds nothing to the waiver authority already statutorily possessed by the Secretary,¹⁷¹ and it is unclear why it

169. Pub. L. No. 99-661, § 3131, 100 Stat. 4062 (1986) (codified at 42 U.S.C. § 7261a (1988)).

170. 42 U.S.C. § 7261a(a)(1) (1988). The language of this section is semantically confusing because unlike 35 U.S.C. §§ 202-10 (1988) it does not speak in terms of funding agreements but rather in terms of statutory provisions. Rights in inventions made at DOE laboratories are determined not by statutory provisions per se but rather by the specific provisions of their management and operating ("M&O") contracts. While the statutory provisions set forth in 42 U.S.C. § 7261a(a)(1) may provide the basis for DOE authority to place provisions in the M&O contracts which require that title to certain subject inventions vest in the government, it is not the statutory provisions but rather the contractual provisions that determine the actual legal rights in such inventions, assuming always that the contractual provisions are consonant with applicable statutory language.

171. Both 42 U.S.C. § 2182 and 42 U.S.C. § 5908 provide authority for the DOE to waive title to subject inventions to the contractor. See *supra* text accompanying notes 38, 93-103. While 35 U.S.C. § 200 *et seq.* does not expressly provide for such authority, it does not preclude the use of such authority under the two other statutes. Thus, even to the extent that the DOE seeks to avoid granting a nonprofit contractor the right to elect title to subject inventions by applying the exceptions permitted by 35 U.S.C. § 202(a)(ii) or (iv), this does not preclude it from waiving title to such subject inventions under the other two statutes.

was reiterated here.¹⁷²

The language of 42 U.S.C. § 7261a(a)(1) is troubling in several other respects. It seems at first glance to suggest that the DOE may routinely rely on either 35 U.S.C. § 202(a)(ii) or (iv) or Section 152 of the 1954 Atomic Energy Act or Section 9 of the Federal Nonnuclear Act as authority for contractual language requiring title to subject inventions made under the naval nuclear propulsion or nuclear weapons programs to vest in the government. If this is indeed the case, then it appears inconsistent with the provisions of 35 U.S.C. §§ 200 *et seq.*¹⁷³ It is also unclear what the phrase "nuclear weapons programs or other atomic energy defense activities" means as used in 42 U.S.C. § 7261a(a)(1). This language appears narrower than "weapons related programs" as used in 35 U.S.C. § 202(a)(iv); however, it is not apparent what distinction may have been intended.¹⁷⁴

172. The only rationale seems to have been a jurisdictional one. By stating the right of the DOE to waive title to subject inventions made under these two programs independently of the earlier statutory provisions noted *supra* in note 171, the House Armed Services Committee was able to add further restrictions and requirements that must be met by contractors before the DOE can grant such waivers without having referral to other committees which might well have strongly challenged these additional requirements and restrictions.

173. In this regard, 35 U.S.C. § 202(a) (1988) grants an absolute right to a small business or nonprofit organization to elect title to a subject invention within a reasonable time after the required disclosure is made except that the funding agreement may provide otherwise if one of the four exceptions set forth in clauses (i) through (iv) are met. In addition, 35 U.S.C. § 210(a) (1988) states that:

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: . . . section 152 of the Atomic Energy Act of 1954 . . . [and] section 9 of the Federal Nonnuclear Energy Research and Development Act of 1974

Thus, 35 U.S.C. § 202(a) (1988) in combination with 35 U.S.C. § 210(a) (1988) appears to indicate that the DOE must rely on either 35 U.S.C. § 202(a)(ii) or (iv), but not Section 152 of the Atomic Energy Act of 1954 or Section 9 of the Federal Nonnuclear Act, in order to require contractual provisions mandating an absolute rather than a contingent vesting of title in the government to certain subject inventions made at the DOE laboratories operated by nonprofit organizations.

But 42 U.S.C. § 7261a(a)(1), being enacted more recently, may be argued to take precedence over the noted provisions of 35 U.S.C. § 202(a) and 35 U.S.C. § 210(a). However, nowhere in 42 U.S.C. § 7261a is there any specific statement that it takes precedence over 35 U.S.C. §§ 200–10, nor does it expressly amend any of these statutory provisions. In this regard, it is to be noted that 35 U.S.C. § 210(a) also expressly states that "[t]he 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."

174. Although both the legislative history of 35 U.S.C. § 202 and the Commerce Department interim final regulations issued with respect thereto took the position that "weapons related" referred to subject inventions that "occurred under activities funded" by the weapons program of the DOE, *see supra* notes 166–67, the DOE refused to accept what it considered to be a restrictive interpretation and instead relied on the authority granted it

A further difficulty is that 42 U.S.C. § 7261a(a)(1) appears to apply to any subject inventions arising out of "any Government contract or subcontract of the Naval Nuclear Propulsion Program or the nuclear weapons programs or other atomic energy defense activities of the Department of Energy." Are the management and operating contracts for the DOE weapons laboratories intended to be within the ambit of this language? If so, does this mean that the two-tiered system contemplated by 35 U.S.C. § 202(a) is no longer applicable at the Lawrence Livermore National Laboratory and the Los Alamos National Laboratory?¹⁷⁵ Does title to all subject inventions made at these two laboratories then vest in the government? Is the DOE authorized by this statutory provision to take title to all subject inventions made under contracts or subcontracts with small businesses or nonprofit organizations under these two programs?¹⁷⁶ While the DOE has not so interpreted this language, it is simply not clear what ultimate effect is intended on disposition of title to subject inventions made at these two weapons laboratories or under contracts or subcontracts with small businesses or nonprofit organizations.¹⁷⁷

There is little doubt that 42 U.S.C. § 7261a effectively increases the difficulty of obtaining a waiver of title to subject inventions made under the nuclear weapons or naval nuclear propulsion programs or other atomic energy defense activities of DOE. It does so by setting forth

by 37 C.F.R. §§ 401.3(c), .14(b) (1988) to develop its own contract clauses interpreting the meaning to be given to "weapons related." In this regard, it has taken the position that "weapons related" means used in the weapons program, regardless of the source of funding.

Thus, at least in this context, 42 U.S.C. § 7261a(a)(1) may arguably be more restrictive than the DOE interpretation of "weapons related" as used in 35 U.S.C. § 202(a). However, the inclusion of the phrase "or other atomic energy defense activities" may be more expansive. Ordinary principles of statutory interpretation would suggest that it ought not to be treated as merely redundant to "nuclear weapons programs," but what it may be intended to encompass outside "nuclear weapons programs" is vague at best.

175. Both laboratories are multiprogram DOE laboratories even though they are primarily weapons laboratories. Under 35 U.S.C. § 202(a), the exception on the right to elect title to subject inventions at these two laboratories is limited to inventions made under the weapons program so that the right to elect title to subject inventions made under other programs conducted at the laboratories is not affected. Consequently, a two-tiered system involving the right to elect title to subject inventions is required.

176. This would be in direct conflict with 35 U.S.C. § 202(a) which requires that small business and nonprofit contractors be given the right to "elect to retain" title unless the funding agreement contains one of the four enumerated exceptions.

177. Unfortunately, the legislative history of 42 U.S.C. § 7261a is not particularly helpful in this regard. The conference committee report states only that "[t]he conferees concluded that inventions and discoveries originating in the military activities of the Department of Energy must be carefully reviewed to ensure that assignment of property rights in such inventions and discoveries to contractors does not violate the public interest." See 1986 U.S. CODE CONG. & ADMIN. NEWS 6614. While this seems to suggest that the statute's coverage is limited to "military activities" of the DOE, it does not define what is meant by "military activities."

more criteria to be addressed:

In making a decision under this section, the Secretary shall consider, in addition to the applicable policies of [Section 152 of the 1954 Atomic Energy Act or Section 9 of the Federal Nonnuclear Act]—

- (1) whether national security will be compromised;
- (2) whether sensitive technical information (whether classified or unclassified) under the Naval Nuclear Propulsion Program or the nuclear weapons programs or other atomic energy defense activities of the Department of Energy for which dissemination is controlled under Federal statutes and regulations will be released to unauthorized persons;
- (3) whether an organizational conflict of interest contemplated by Federal statutes and regulations will result; and
- (4) whether failure to assert such a claim will adversely affect the operation of the Naval Nuclear Propulsion program or the nuclear weapons programs or other atomic energy defense activities of the Department of Energy.¹⁷⁸

It is apparent that these further criteria are to be considered in addition to those of Section 152 of the 1954 Atomic Energy Act and Section 9 of the Federal Nonnuclear Act. However, it remains unclear whether the DOE must also determine which policies to apply: those of Section 152 or those of Section 9.

On July 20, 1988, the DOE issued proposed regulations¹⁷⁹ about how a "complete request"¹⁸⁰ for waiver under 42 U.S.C. § 7261a is constituted.¹⁸¹ These regulations are essentially a modified, and in some

178. 42 U.S.C. § 7261a(b) (1988).

179. 48 C.F.R. § 927 (1988).

180. In 1987, 42 U.S.C. § 7261a(a) was amended to add the following:

- (2) Such decision shall be made within 150 days after the date on which a complete request for waiver of such rights has been submitted to the Secretary by the contractor. For purposes of this paragraph, a complete request includes such information, in such detail and form, as the Secretary by regulation prescribes as necessary to allow the Secretary to take into consideration the matters described in subsection (b) of this section in making the decision.

Pub. L. No. 100-180 (1987), § 3135(a), 101 Stat. 1240 (1987).

181. For requests to waive title to identified inventions, a waiver request is required to include at a minimum:

- (1) A description of the technical steps required and funds necessary therefor to develop the invention to the point of readiness for commercialization;
- (2) A description of the plans, intentions and ability of the petitioner to commercialize the invention, including any anticipated amounts of capital and expen-

respects more complex, version of those issued under Section 9 of the Federal Nonnuclear Act.¹⁸²

-
- ditures, and associated time periods, to be directed toward development and commercialization of the particular invention, together with a description of the commercial position (if any) of the petitioner in the marketplace, and a statement by the petitioner that either the petitioner or petitioner's present or intended licensee will expend the anticipated amounts of capital and resources required to develop the invention to the point of readiness for commercialization;
- (3) A description of any continuing Government funding of the development of the invention (including investigation of materials or processes for use therewith), from whatever Government source, whether direct or indirect, and, to the extent known by the petitioner, any anticipated future Government funding to further develop the invention;
 - (4) A description of the competitive technologies or other factors which would ameliorate any anticompetitive effects of granting the waiver;
 - (5) A statement that petitioner will reimburse the Department of Energy for any and all costs and fees incurred by the Department in the preparation and prosecution of the patent applications covering the invention that is the subject of the waiver petition;
 - (6) Where applicable, a statement of reasons why the petition was not timely filed in accordance with the applicable patent rights clause of the contract, or why a request for an extension of time to file the petition was not filed in a timely manner;
 - (7) Identification of whether the invention pertains to work that is classified, or sensitive, i.e., unclassified but controlled pursuant to Section 148 of the Atomic Energy Act of 1954, as amended, (42 U.S.C. 2168) (1982), or subject to export control under Chapter 17 of the Military Critical Technology List (MCTL) contained in Department of Defense Directive 5230.25, including identification of all principal uses of the invention inside or outside of the contractor program, and an indication of whether any such uses involve classified or sensitive technologies;
 - (8) Identification of all DOE and DOD programs and projects in the same general technology as the invention for which the petitioner intends to be providing program planning advice or has provided program planning advice within the last three years;
 - (9) A statement of whether a classification review of the invention disclosure, any resulting patent application(s), and/or any reports or other documents disclosing a substantial portion of the invention has been made, together with any determination on the existence of classified or sensitive information in either the invention disclosure, the patent application(s), or reports or other documents disclosing a substantial portion of the invention; and
 - (10) Identification of any and all proposals, work for other activities, or other arrangements submitted by the petitioner, DOE, or a third party, of which the petitioner is aware, which may involve further funding of the work on the invention at either the contractor facility where the invention arose or another facility owned by the Government.

182. To see the differences between the requirements of the two sets of statutes and their resultant regulations, see *supra* notes 108-11 and accompanying text.

J. Executive Order 12,591

On April 10, 1987, President Reagan issued Executive Order 12,591 entitled "Facilitating Access to Science and Technology."¹⁸³ In issuing this Order he stated:

It is important not only to ensure that we maintain American preeminence in generating new knowledge and know-how in advanced technologies, but also that we encourage the swiftest possible transfer of federally developed science and technology to the private sector. All of the provisions of this Executive Order are designed to keep the United States on the leading edge of international competition.¹⁸⁴

Among other things, the Executive Order provides that:

The head of each Executive department and agency shall, within overall funding allocations and to the extent permitted by law . . . promote the commercialization, in accord with my Memorandum to the Heads of Executive Departments and Agencies of February 18, 1983, of patentable results of federally funded research by granting to all contractors, regardless of size, the title to patents made in whole or in part with Federal funds, in exchange for royalty free use by or on behalf of the government.¹⁸⁵

Presumably this language is intended to refer to title to patents for inventions made in whole or in part with federal funds. It is of interest to note that it *requires* that title to such patents be granted to all contractors, "to the extent permitted by law." There is no restriction with regard to contractors operating GOCO weapons laboratories or facilities primarily dedicated to the naval nuclear propulsion program. Thus, presumably, unless precluded by law from so doing, the Executive Order obligates the DOE to grant title to all subject inventions made in whole or in part with federal funding to all contractors—including those operating its GOCO laboratories. Recall that in 1983 the DOE took the position that it was precluded by law from complying with the Presidential Patent Policy Statement. The DOE argued then that "the patent policy of Section

183. Exec. Order No. 12,591, 3 C.F.R. 220 (1987), *reprinted in* 15 U.S.C.A. § 3710, app. at 185-86 (1989).

184. Office of the Press Secretary, Statement by the President (Apr. 10, 1987).

185. Exec. Order No. 12,591, *supra* note 183, § 1(b)(4).

152 of the Atomic Energy Act and Section 9 of the Federal Nonnuclear Act remains in effect except where the Bayh-Dole Act requires a different disposition of rights in contracts with small businesses and nonprofits."¹⁸⁶ In other words, the DOE contended that it could not grant title to subject inventions to large, for-profit businesses, including those operating GOCO facilities for DOE, because the law forbade such a disposition of rights.¹⁸⁷

In the intervening years, the law with respect to disposition of rights to subject inventions to large, for-profit contractors has not changed.¹⁸⁸ Apparently the DOE interpretation of the applicable law has. On November 4, 1988, the DOE published a notice of proposed rulemaking of a class patent waiver.¹⁸⁹ The proposed rule provides for two categories of class waivers:

- (1) A class advance waiver (i.e., waiver at the time of contracting) of the Government's rights in inventions arising from contracts with domestic large business contractors, other than management and operating contractors generally referred to as GOCOs; and
- (2) A class waiver of the Government's rights in identified inventions arising from contracts with domestic large business contractors, including management and operating contractors.¹⁹⁰

One may reasonably ask why this class waiver is now permitted by law when the DOE claims the waiver was precluded by the same law in 1983. By issuing this notice of proposed rulemaking, the DOE has at least tacitly admitted that the position taken in 1983 was erroneous.

This admission is supported by a September 20, 1988 report of the House Committee on Science, Space, and Technology:

The Department of Energy has been in the process of preparing generic patent waivers for all its for-profit laboratory contractors since the 1983 executive memorandum and yet is only now reportedly about to issue final regulations. These regulations can only address part of the overall problem. Without clear regulation, DOE will work within the confines of the

186. Impact Memo, *supra* note 20, at 18.

187. See *supra* text accompanying notes 138-47.

188. The amendments made to 35 U.S.C. §§ 200-10 by P.L. 98-620 involved only rights arising out of funding agreements with small businesses or nonprofit organizations.

189. See 53 Fed. Reg. 44,602 (1988).

190. *Id.*

Atomic Energy Act and the Federal Nonnuclear Act which were written several decades ago in a very different policy framework.¹⁹¹

If it is true that the DOE began in 1983 to prepare such patent waivers, then at the same time it was informing its contractors that it was "precluded by law" from issuing such waivers.¹⁹² The inconsistency is obvious, and suggests at least one reason for the skepticism of DOE contractors with respect to DOE motivations.

The notice of proposed rulemaking sets forth the background for the proposed waivers,¹⁹³ quotes the applicable disposition of rights language from the Presidential Statement referenced in Executive Order 12,591,¹⁹⁴ and then proceeds to state:

With the overall goal of incorporating the results of the Department's research, development, and demonstration programs into the mainstream of American commerce consistent with the objectives of the President's patent policy and in accordance with the authority of [Section 152 of the Atomic Energy Act of 1954 and Section 9 of the Federal Nonnuclear Act], DOE proposes that it is in the best interests of the United States and the general public to grant a class waiver as pro-

191. H.R. REP. NO. 943, 100th Cong., 1st Sess., pt. 1, at 9 (1988).

192. See *supra* text accompanying notes 138-47.

193. The background was set forth as follows:

Normally, for contracts, grants, agreements, or other arrangements with DOE for research, development or demonstration work with entities other than domestic small businesses or nonprofit organizations, title in inventions vests in the Government, pursuant to the Atomic Energy Act of 1954 (42 U.S.C. 2182 (1982)) and the Federal Nonnuclear Energy Research and Development Act of 1974 (42 U.S.C. 5908 (1982)), unless the Government waives its rights in inventions in conformity with the provisions of these statutes. Title 35 U.S.C. 202 (1982) (Public Law 96-517, as amended by Pub. L. 98-620) generally permits domestic small business firms and domestic nonprofit organizations to elect to retain title in inventions made under funding agreements with the Federal Government. Accordingly, this notice concerns only domestic large, for profit, businesses, not covered by 35 U.S.C. 202, as to which the right to title to inventions is governed by the Atomic Energy and Nonnuclear Acts, subject to the guidance to agencies contained in the President's Memorandum on Government Patent Policy of February 18, 1983, as referenced in Executive Order 12591, dated April 10, 1987.

53 Fed. Reg. 44,602 (1988).

194. See *supra* text accompanying note 135.

vided in the proposed regulation.¹⁹⁵

However, it is not at all clear that the proposed waivers are in fact "consistent" with the objectives of Presidential patent policy. Executive Order 12,591 unequivocally states that Executive departments and agencies *shall* grant "to *all* contractors, regardless of size, the title to patents made in whole or in part with Federal funds, in exchange for a royalty-free use by or on behalf of the government."¹⁹⁶ There is no proviso in the Executive Order which permits the DOE to exempt from its coverage those patents for which it decides to apply the exceptions set forth in the Bayh-Dole Act at 35 U.S.C. § 202(a)(ii) and (iv). Yet this is the effect of the proposed waiver regulations. According to the notice of proposed rule making:

Certain areas in the national interest are excluded from the scope of these waivers. The exclusions are generally as follows: inventions arising under international agreements or treaties; weapons-related inventions; inventions made under agreements funded by DOE's naval nuclear propulsion program; classified or sensitive inventions; uranium enrichment inventions; inventions relating to storage and disposal of civilian high-level nuclear waste or spent nuclear fuel; and inventions falling within other class waivers granted to third parties by DOE.

....

Weapons-related inventions are excluded from the class waivers for reasons involving nonproliferation of weapons, national security, conflicts of interest, management requirements of DOE's unique contractor operated weapons laboratories and in order that DOE may ensure prosecution of patent applications or statutory invention recordings on selected inventions in which the Government has a strong interest in establishing patent rights.¹⁹⁷

The exclusions set forth above pertain to the discretionary exceptions (listed in the Bayh-Dole Act at 35 U.S.C. § 202(a)(ii) and (iv)) that the DOE has specifically implemented in its funding agreements.

In addition, under the notice of proposed rulemaking, the Secretary of

195. 53 Fed. Reg. 44,602-03 (1988).

196. Exec. Order No. 12,591, *supra* note 183, § 1(b)(4). See *supra* text accompanying note 185.

197. 53 Fed. Reg. 44,603 (1988).

Energy reserves the right to designate further exclusions to these class waivers as deemed necessary in the national interest.¹⁹⁸ Moreover, an advance waiver requires the contractor to provide either twenty percent cost sharing, or a level thought necessary by the DOE General Counsel or designee for specific mission, programmatic, or statutory needs.¹⁹⁹

As has been emphasized earlier in this article, there is nothing in 35 U.S.C. § 202(a) which mandates that the DOE apply the exceptions set forth in clauses (ii) and (iv).²⁰⁰ If the statute does not require that these exceptions be applied to the DOE laboratories or the DOE contractors, then there is no reason to contend that the DOE is precluded by law from exercising its discretion not to apply them as the Executive Order clearly directs.

Executive orders²⁰¹ issued pursuant to a grant of statutory authority are generally considered to have the force and effect of law.²⁰² President Reagan stated that Executive Order 12,591 was issued "pursuant to the authority vested in me as President by the Constitution and laws of the United States of America, including the Federal Technology Transfer Act of 1986 (Public Law 99-502), the Trademark Clarification Act of 1984 (Public Law 98-620), and the University and Small Business Act of 1980 (Public Law 96-517)."²⁰³ For authority to require that title to subject inventions be passed to the contractors, he relied specifically on P.L. 96-517 as amended by P.L. 98-620. No argument has been made that Executive Order 12,591 does not have the force and effect of law.

How then does the DOE justify its failure to comply fully with the express requirement of Executive Order 12,591? One response might be that the agency believes it is fully complying with the intent but not the express requirement of the Order.²⁰⁴ More pragmatically, however, the DOE realizes that any regulations it issues that are inconsistent with the

198. *Id.*

199. *Id.*

200. See *supra* text accompanying notes 135-40.

201. For a discussion of the overall authority of the President to issue executive orders, see *Dames & Moore v. Regan*, 453 U.S. 654 (1981); *Youngstown Sheet & Tube Co. v. Sawyer*, 343 U.S. 579 (1952).

202. See, e.g., *Youngstown Sheet & Tube*, 343 U.S. at 635 (Jackson, J., concurring); *Association for Women in Science v. Califano*, 566 F.2d 339, 344 (D.C. Cir. 1977); *Independent Meatpackers Ass'n v. Butz*, 526 F.2d 228, 234 (8th Cir. 1975), *cert. denied*, 424 U.S. 966 (1976); *Farkas v. Texas Instrument*, 375 F.2d 629, 632 n.1 (5th Cir.), *cert. denied*, 389 U.S. 977 (1967); *Farmer v. Philadelphia Electric Co.*, 329 F.2d 3, 7 (3d Cir. 1964).

203. See Exec. Order No. 12,591, *supra* note 183.

204. Thus, the DOE has taken the position that the proposed large business class waiver is consistent with the "objectives" of the President's patent policy. See *supra* notes 195-96 and accompanying text.

language of the Executive Order are unlikely to be successfully challenged in court.²⁰⁵ The DOE thus has little incentive to assure that it is in full compliance with the Order.²⁰⁶

II. CREATING A MORE UNIFORM GOVERNMENT PATENT POLICY

Today there are only limited circumstances in which the government should retain ownership of subject inventions.²⁰⁷ Retention of title to subject inventions by the government is frequently detrimental to the commercial use of these inventions.²⁰⁸ In contrast, the presumption of subject invention ownership by government contractors serves as an incentive to public use and enjoyment of subject inventions; it also adds to national security by enhancing the economic competitiveness of this country.²⁰⁹

Creating a more uniform government patent policy does not mean creating new intellectual property rights.²¹⁰ Rather, existing rights

205. There are several reasons why the DOE feels safe from a judicial challenge of its failure to comply fully with the requirements of Exec. Order No. 12,591. First of all, the only entities that would have a sufficient interest to challenge the DOE are its contractors, but past experience indicates that its contractors are in general highly reluctant to challenge any disposition of rights determination made by the DOE. Secondly, it is not easy to obtain judicial enforcement of an executive order, particularly if the order does not expressly create a cause of action in identified entities. This is particularly true when an agency exercises its discretion not to enforce the order. See generally Raven-Hansen, *Making Agencies Follow Orders: Judicial Review of Agency Violations of Executive Order 12,291*, 1983 DUKE L.J. 285; Note, *Enforcing Executive Orders: Judicial Review of Agency Action under the Administrative Procedure Act*, 55 GEO. WASH. L. REV. 659 (1987).

206. While the DOE may have little incentive, there is a national interest or incentive for its compliance with the Executive Order. See *infra* note 213 and accompanying text.

207. Such circumstances may reasonably be said to be those set forth in exceptions (i), (ii), and (iii) in 35 U.S.C. § 202(a). See *supra* note 168 and accompanying text.

208. See *supra* notes 127-28 and accompanying text.

209. There is an increasing recognition that military preparedness is only one aspect of national security and that economic competitiveness plays a critical role in assuring national well being. This is a principal reason why President Reagan stated that the provisions of Executive Order No. 12,591 "are designed to keep the United States on the leading edge of international competition." See *supra* note 184 and accompanying text. For an interesting and provoking historical perspective on the tensions between military commitments and what would now be termed economic competitiveness, see P. KENNEDY, *THE RISE AND FALL OF THE GREAT POWERS* (1987).

210. For a discussion of the issues involved in the creation of a new intellectual property right, see Kastenmeier & Remington, *The Semiconductor Chip Protection Act of 1984: A Swamp or Firm Ground?*, 70 MINN. L. REV. 417 (1985). Kastenmeier and Remington suggest certain general principles and a political test for intellectual property legislation.

One general principle is that statutes should respond to problems. "If it ain't broke, don't fix it." Moreover, consideration of intellectual property issues should be governed by standards and procedures that are understood in advance and applied uniformly from case to case. In addition, the proponents of change should have the burden of showing that a

would be more uniformly applied. In fact, the framework for developing such a policy already exists in the Bayh-Dole Act, which creates a presumption of ownership of subject inventions in small business and nonprofit government contractors.²¹¹ Before discussing the overall modifications to Bayh-Dole that are necessary to produce the desired patent policy,²¹² it is useful to review those statutory changes that are required to bring the DOE within such a policy. Simply eliminating those statutory provisions directed at the DOE greatly facilitates creation of a more uniform government patent policy.

A. *Bringing the DOE Within the Fold*

In issuing Executive Order 12,591, President Reagan emphasized the need both to maintain American preeminence in generating new knowledge and capability in advanced technologies and to encourage the swiftest possible transfer of federally developed science and technology to the private sector.²¹³ The premise that the economic competitiveness of this nation is enhanced by rapid transfer of technology developed at the DOE laboratories to the private sector is inherent in this view. Also inherent in the Executive Order is the precept that granting title to patents that arise out of such technology to the contractors who operate the DOE laboratories is the most efficient way to effect such a transfer.

If these premises are correct, then the current statutory framework, which consists of four separate statutes that span four decades, is not a rational way to determine disposition of rights in subject inventions made at the DOE laboratories. The disposition of these rights should not depend on whether the contractor is a large for-profit business or a small business or nonprofit entity, and should be determined by the actual content of the particular invention instead of the source of funding of the technology. Except in the most limited circumstances, there should be

meritorious public purpose is served by the proposed Congressional action.

Whether this burden is met can be measured against the following political test: (a) a showing that a new intellectual property interest can fit within the existing legal framework without violating existing principles or basic concepts; (b) a reasonably clear and satisfactory definition of the new property interest; (c) an honest analysis of all the costs and benefits of the proposed legislation; and (d) a showing of how giving the protection sought by the legislation will enrich or enhance the public domain.

Id.

211. 35 U.S.C. § 202(a) (1988).

212. It is clearly not desirable to have an absolutely uniform policy of granting title to subject inventions to the contractors in all cases. There are occasions when title should remain in the government, but retention of title by the government should be judiciously exercised and only provided on a case-by-case basis with adequate justification.

213. See *supra* note 184 and accompanying text.

no presumption of government ownership of subject inventions made at DOE laboratories.

Thus the present statutory framework that governs disposition of rights in subject inventions made at DOE laboratories is not in the national interest. Rather, it is an artifact of confusing and conflicting Congressional committee jurisdictions that seeks to reconcile largely contradictory presumptions. In so doing, however, it has permitted the DOE to evade policy reform and to construct a regulatory framework that is unnecessarily complicated.

There is no longer any need for a statutory presumption of government ownership of rights in subject inventions made at DOE laboratories. Indeed, all recent evidence suggests that such a presumption is counterproductive to the swift and effective transfer of technology from these laboratories to the private sector. There may exist some circumstances in which contractual limitations on the presumption of ownership of rights in subject inventions by contractors are in order. But no statutory framework directed at the DOE is necessary to accomplish this. Nor is any separate statutory framework necessary to protect the national security aspects of technology developed at the DOE weapons laboratories.

Accordingly, Congress should consider:

- (1) repealing Section 152 of the Atomic Energy Act of 1954 in its entirety, or simply deleting the first sentence thereof;
- (2) repealing Section 9 of the Federal Nonnuclear Energy Research and Development Act of 1974 in its entirety;
- (3) repealing 42 U.S.C. § 7261a in its entirety; and
- (4) amending 35 U.S.C. § 202(a) to delete clause (iv).

In addition, the grounds for waiver exclusion in the DOE notice of proposed patent waiver rulemaking should be reconsidered.

Implementation of items (1) and (2) would remove any presumption of government ownership of subject inventions made at the DOE laboratories. Implementation of all four items would largely remove the need for waivers or complicated waiver regulations. While a waiver process would still exist for those inventions to which the DOE has contractually retained title, requests for waiver would not be required to meet the complicated criteria presently set by Section 9 of the Federal Nonnuclear Act.²¹⁴ Those considerations appear to have little relationship to the economic competitiveness issues that exist today. Instead, the decision

214. See *supra* note 99.

to grant a waiver should be based on a demonstration that the reasons for the government to retain title are either no longer applicable or presently invalid, or that the benefits of a waiver outweigh government concerns. To the extent that a waiver process is still required, it should not be based on the outmoded considerations set forth in Section 9 of the Federal Nonnuclear Act and reiterated in 42 U.S.C. § 7261a.

Item (3) concerning repeal of 42 U.S.C. § 7261a requires a closer look. Ostensibly, the criteria set forth therein are for the purpose of protecting national security by precluding unauthorized dissemination of sensitive information.²¹⁵ No one would argue that this is not an admirable goal, but if it is indeed the purpose of the statute, why is the coverage of the statute limited to specific programs funded by the DOE? Should not the same or similar considerations apply to almost all inventions or discoveries funded by the government which may involve "sensitive" information?

A more fundamental question is: How does requiring disposition of rights in subject inventions made under a contract or subcontract of these two programs in accordance with the criteria set forth in 42 U.S.C. § 7261a protect the national security anymore than it is already protected by other statutory or regulatory requirements? There is nothing to suggest that it actually does. Rather, the result is to render much more difficult the transfer to the private sector of technology funded through these two programs which in no way involves "sensitive" information.

Although 42 U.S.C. § 7261a speaks in terms of inventions or discoveries,²¹⁶ pragmatically what it is about is disposition of patent rights. It says nothing about whether patent applications should be filed or whether patents should issue on subject inventions funded by the two particular programs. Rather, its concern is about ownership of patent rights. But ownership of patent rights has very little to do with protection of national security; instead, the real issue is protection against improper dissemination of technical information. When a U.S. patent issues, regardless of whether it is owned by the government or a contractor, it is publicly available around the world to anyone who wishes to purchase a copy of it.²¹⁷

Thus, the real issue is not ownership of patent rights but improper dissemination of sensitive technical information. But any limitation on dissemination of technical data developed at DOE laboratories is controlled by Section 146 of the Atomic Energy Act of 1954 which states that

215. See *supra* notes 169-81 and accompanying text.

216. See *supra* note 170 and accompanying text.

217. 37 C.F.R. § 1.19 (1988). See also 35 U.S.C. §§ 10-13 (1988).

"[t]he Commission [now Secretary of Energy] shall have no power to control or restrict the dissemination of information other than as granted by this or any other law."²¹⁸ Insofar as can be ascertained, the only statutory basis for restricting dissemination of information developed at the DOE laboratories is if it is classified or sensitive under Section 148 of the Atomic Energy Act of 1954.²¹⁹

While it is reasonable to preclude any automatic right to elect title to subject inventions that are classified or sensitive under Section 148, contractors operating DOE laboratories rarely seek rights in such inventions because there is usually no practical way to commercialize these inventions. But 42 U.S.C. § 7261a is not required in order to give the DOE authority to preclude contractors from electing title to such inventions. That authority already exists under 35 U.S.C. § 202(a)(ii),²²⁰ and the DOE has routinely exercised it by relying on an exceptional circumstance determination.²²¹

218. 42 U.S.C. § 2166(b) (1988).

219. 42 U.S.C. § 2168 (1988) provides that the Secretary of Energy, with respect to atomic energy defense programs, shall take those steps necessary to "prohibit the unauthorized dissemination of unclassified information pertaining to—

- (A) the design of production facilities or utilization facilities;
- (B) security measures (including security plans, procedures, and equipment) for the physical protection of (i) production or utilization facilities, (ii) nuclear material contained in such facilities, or (iii) nuclear material in transit; or
- (C) the design, manufacture, or utilization of any atomic weapon or component if the design, manufacture, or utilization of such weapon or component was contained in any information declassified or removed from the Restricted Data category by the Secretary (or the head of the predecessor agency of the Department of Energy) pursuant to section 2162 of this title."

42 U.S.C. § 2168(a)(1) (1988).

220. Under 35 U.S.C. § 202(a)(ii) (1988), a funding agreement may provide for title to remain in the government "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." In turn, 37 C.F.R. § 401.3(b) (1988) expressly indicates that this exception can be used "on the basis of national security."

221. Thus, for example, by letters dated October 22 and 23, 1987 (copies on file with the author), the DOE informed the University of California that it

has determined that exceptional circumstances obtain for DOE funding agreements involving work in technologies which are classified, or sensitive under section 148 of the Atomic Energy Act (42 U.S.C. 2168), or controlled pursuant to federal export control regulations as stipulated in DOD Directive 5230.25. Accordingly, a disposition of patent rights different from that applicable under Pub. L. 96-517 and Pub. L. 98-620 is necessary for funding agreements with small businesses or nonprofit organizations involving these technologies.

Thereafter, pursuant to 37 C.F.R. § 401.4 (1988), the University appealed this exceptional circumstances determination to the extent that it sought to cover subject inventions in technologies "controlled pursuant to federal export control regulations as stipulated in DOD Directive 5230.25."

The fact that the DOE has reserved governmental rights to classified or sensitive subject inventions under 35 U.S.C. § 202(a)(ii) also supports item (4) of the above list of proposed statutory changes. Aside from protection of such information, there is no realistic basis for seeking to treat disposition of rights in subject inventions funded under the weapons or naval propulsion programs of the DOE any differently than for any other subject inventions.²²²

For similar reasons, the DOE justifications given for precluding weapons-related inventions from its proposed class waiver involving large, for-profit contractors appear to be largely without merit.²²³ Restrictions on the right to elect title do nothing to protect national security or to avoid proliferation when the subject matter of the invention is neither classified nor sensitive under Section 148.²²⁴ The subject matter may still be publicly available in a patent issued to the government, or

In a two-part response, dated respectively February 17, and April 15, 1988, by Acting DOE General Counsel Eric Fygi, the DOE withdrew that portion of the exceptional circumstances determination pertaining to export control regulations. In so doing, the DOE acknowledged "that the particular retention of title to inventions addressed in the appeal [i.e., those subject to export control regulations] is not the appropriate means to attempt to deal with legitimate concerns about proliferation of potentially damaging technology."

222. The reason for including the exception set forth at clause (iv) of 35 U.S.C. § 202(a) was a Congressional concern that information would not be freely exchanged within the DOE weapons complex because of attempts by contractors to protect a commercially valuable position. There is no evidence to indicate any factual basis for this concern. Rather, there are several extant mechanisms for assuring that this does not occur, even in the absence of 35 U.S.C. § 202(a)(iv).

First, the DOE M&O contracts routinely provide that title to technical data developed in the course of, or under, the contract shall be in the government, and that the DOE has an absolute right to access and copy such data. See Walterscheid, *Access to Federally Funded Research Data Under the Freedom of Information Act*, 15 RUTGERS COMPUTER & TECH. L. J. 1, 42-43 (1989). Second, "[w]ith 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." 35 U.S.C. § 202(c)(4) (1988). Third, under the U.S. patent law, patent protection may be obtained for up to a year after a subject invention has been in public use or otherwise publicly disclosed. 35 U.S.C. § 102(b) (1988). These all serve as disincentives to treat subject inventions as trade secrets within the weapons complex.

Finally, and perhaps most importantly, for more than a decade contractors and inventors have been permitted to obtain title to weapons-related subject inventions through the waiver process, and the DOE has in fact granted title to a number of such inventions to both contractors and inventors. There is no indication that during the time that waivers were being sought on any of these inventions, any attempt to preclude transmittal of information about any such subject invention within the weapons complex occurred.

223. See *supra* note 197 and accompanying text.

224. The DOE has acknowledged that export control regulations do not provide an appropriate basis for restricting the right to elect title to subject inventions. See *supra* note 221.

may be obtained under the Freedom of Information Act.²²⁵

Furthermore, conflicts of interest are not precluded merely by restricting the right to elect title. These conflicts can also exist when a waiver is involved. Moreover, there appears to be little or no valid rationale for a statutory requirement that conflicts of interest be considered with respect to waivers that involve subject inventions made under the weapons-related or naval nuclear propulsion programs of the DOE but not under any other DOE programs.²²⁶ As a practical matter, during the past decade, when DOE has routinely waived weapons related inventions to inventors there has been almost no indication that any conflict of interest, either real or apparent, has occurred. To the extent that a conflict is perceived, the DOE has existing contractual provisions to deal with such matters.

Contrary to assertions made by the DOE, there is nothing in the management requirements of its weapons laboratories that obligates a restriction on the right of operating contractors to elect title to subject inventions. Nor has the DOE shown a strong government interest in establishing license rights to all weapons-related inventions. To the very limited extent such establishment has occurred, the DOE has issued exceptional circumstance determinations under 35 U.S.C. § 202(a)(ii).²²⁷ Again, there is no basis for a blanket exclusion of weapons-related inventions.

B. Treating All Contractors Equally

While bringing the DOE within the fold goes a long way toward creating a more uniform government patent policy, there remains a difference in treatment of subject inventions that involve large businesses and those involving small businesses and nonprofit entities. The Bayh-Dole Act creates a presumption of ownership of subject inventions by small businesses and nonprofit entities,²²⁸ but is silent with respect to such inventions by large businesses. The Presidential Patent Policy Statement of February 18, 1983 and Executive Order 12,591

225. 5 U.S.C. § 552 (1988). For a detailed discussion concerning access to federally funded research data under the Freedom of Information Act ("FOIA"), see Walterscheid, *supra* note 222. Suffice it to say here that present DOE policy permits FOIA access to technical data that is not classified or sensitive under Section 148. *Id.* at 42-43.

226. *E.g.*, 42 U.S.C. § 5908 (1988); 42 U.S.C. § 7261a (1988).

227. For example, the DOE made an exceptional circumstances determination with respect to its uranium enrichment program.

228. 35 U.S.C. § 202(a) (1988).

sought to extend the presumption of ownership to all contractors.²²⁹ But as the DOE has demonstrated,²³⁰ presidential pronouncements are only as effective as executive agencies will allow.

A decade has passed since the first demand for patent policy reform to enhance economic competitiveness.²³¹ The initial outcome was the Bayh-Dole Act of 1980. The original House version of the Act contained a federal patent policy that applies to all businesses uniformly, but the Senate deleted the portions that apply to contractors other than small businesses and universities.²³² Nonetheless, there was clearly an intent in the House to formulate a federal patent policy uniformly applicable to all contractors.²³³

As originally submitted, the companion bills²³⁴ that ultimately resulted in the P.L. 98-620 amendments to the Bayh-Dole Act contained provisions to treat big businesses in the same manner as small businesses and nonprofit entities.²³⁵ Indeed, the primary purposes of the House bill were "to remove all legislative roadblocks to implementation" of the February 18, 1983 Presidential Patent Policy Statement and "to establish a more uniform federal patent policy."²³⁶ Once again, however, the Senate opposed any presumption of title in subject inventions to big businesses,²³⁷ and, as a consequence, P.L. 98-620 failed to contain any such presumption.²³⁸

One of the objectives as set forth by Congress of the Bayh-Dole Act was "to provide the commercialization and public availability of inventions made in the United States by United States industry and labor."²³⁹ Today, that is interpreted as increasing economic competitiveness. But the mechanism chosen for achieving that goal—a presumption of contractor ownership of subject inventions—is flawed as long as it is limited to small businesses and nonprofit entities.

At one time there may well have been valid concerns that creating a presumption of ownership in subject inventions in large business contractors would result in limited competition and undue expansion of

229. See *supra* notes 135, 185 and accompanying text.

230. See, e.g., *supra* notes 138-47 and accompanying text.

231. See President's Advisory Committee on Industrial Innovation, Final Report (Sept. 1979).

232. See H.R. REP. NO. 983, *supra* note 158, at 13.

233. *Id.* at 13-14.

234. H.R. 5003, *supra* note 155; S. 2171, *supra* note 155. See *supra* note 155.

235. See *supra* text accompanying note 155.

236. H.R. REP. NO. 983, *supra* note 158, at 15 (1984). The House Report incorrectly refers to the Patent Policy Statement as an Executive Order.

237. S. REP. NO. 662, 98th Cong., 2d Sess. 2-3 (1988).

238. See *supra* note 155.

239. See 35 U.S.C. § 200 (1988).

corporate profits at government expense.²⁴⁰ But any such concerns have long since been belied by the DOD experience of the past several decades. There is little or nothing to indicate that the DOD practice of granting title to subject inventions to contractors, regardless of size, has been detrimental to the national interest.²⁴¹ Conversely, it has been amply demonstrated that government retention of title to subject inventions does little to aid in their commercialization, but instead frequently serves as a disincentive to such commercialization.²⁴²

As has been noted,²⁴³ the Bayh-Dole Act provides a framework to develop a more uniform government patent policy. The dichotomy now inherent in the Bayh-Dole Act can be readily remedied by amending the Act to apply to government contractors in general rather than only to small businesses and nonprofit organizations.²⁴⁴ Such an amendment would incorporate the mandate of Executive Order 12,591 into statute, while still providing sufficient agency discretion to protect the government's interest on those limited occasions when the government should retain title to a particular subject invention.²⁴⁵

240. See, e.g., *infra* note 241, setting forth the views of Admiral Rickover.

241. See *supra* note 35 and accompanying text. But see the views expressed by Vice Admiral H. G. Rickover, who was adamantly opposed to any title-granting policy. With regard to the legislation that became the Bayh-Dole Act, he testified:

Based on 40 years experience in technology and dealing with various segments of American industry, I believe the bill would achieve exactly the opposite of what it purports. It would impede, not enhance, the development and dissemination of technology. It would hurt small business. It would inhibit competition. It would promote greater concentration of economic power in the hands of large corporations. It would be costly to the taxpayer.

H.R. REP. NO. 1307, 96th Cong., 2d Sess., pt. 2, at 22 (1980). See also Rickover, *Government Patent Policy*, 60 J. PAT. OFF. SOC'Y 14 (1978).

242. See *supra* note 155. See also *supra* note 208 and accompanying text.

243. See *supra* text accompanying note 214.

244. This would involve: (1) amending 35 U.S.C. § 202(a) and (c) to replace "nonprofit organization or small business firm" with "contractor"; (2) amending 35 U.S.C. § 203(1) to replace "small business firm or nonprofit organization" with "contractor"; (3) amending 35 U.S.C. § 204 to replace "small business firm or nonprofit organization" and "small business firm, nonprofit organization" with "contractor"; and (4) amending 35 U.S.C. § 210(a) to delete "small business firms or nonprofit organizations." In addition, 35 U.S.C. § 210(b) should be deleted and 35 U.S.C. § 210(c) amended to read: "Any disposition of rights in inventions made in accordance with the Statement of Government Patent Policy issued February 18, 1983 or implementing regulations, including any disposition occurring before enactment of this section, are hereby authorized." One limited exception to this amendment would be to retain the present language of 35 U.S.C. § 202(c)(7) (1988).

245. The exceptions as set forth in 35 U.S.C. § 202(a) are discretionary with the funding agency. Executive Order 12,591 as presently drafted literally obligates executive agencies not to use the discretion afforded by 35 U.S.C. § 202(a) to retain title but instead in all instances where "permitted by law" to grant title to the contractor. As a practical matter, there will be some instances in which, based on a case-by-case determination, exceptions (i), (ii), or (iii) should be used to retain title in the government. In other words, some flexi-

CONCLUSION

As Representative Kastenmeier has wisely pointed out, a primary concern in evaluating the need for intellectual property legislation, corrective or otherwise, is to apply the old adage that "if it ain't broke, don't fix it."²⁴⁶ But the DOE example discussed in detail in this article clearly suggests that the present government patent policy is "broken" and ought to be fixed.²⁴⁷ Establishing a more uniform government patent policy can readily be accomplished within the existing legal framework without violating existing principles or basic concepts. The property rights involved are not new: agencies currently have discretion to grant them if they choose to do so.²⁴⁸

In summary, there appears to be no national security or any other imperative that requires patent rights in subject inventions made under DOE funding agreements to be treated differently than those in such inventions made under any other government funding agreement through any other agency. Nor is there any basis to differentiate among nonprofit and for-profit contractors in determining disposition of rights to subject inventions. Instead, there is much to recommend a presumption of title in all subject inventions to the contractors, with but limited exceptions. It is truly time for a more uniform government patent policy to be adopted.

bility would be retained above that contemplated by the Executive Order.

246. See *supra* note 210.

247. *Id.*

248. The principles enunciated by Kastenmeier and Remington for: new intellectual property legislation, see *supra* note 210, have been met. Thus, the property rights involved are clearly delineated. An analysis has been provided of the costs and benefits of the proposed legislation. Finally, a showing has been made that the proposed Congressional action serves a meritorious public purpose by enhancing the economic competitiveness of this country.

APPENDIX I
 CONDUCT OF RESEARCH AND DEVELOPMENT
 BY MAJOR DEPARTMENTS AND AGENCIES

(In millions of dollars)

Department or Agency	Obligations			Outlays		
	1988 act.	1989 est.	1990 est.	1988 act.	1989 est.	1990 est.
Defense—Military functions	37,063	38,879	41,518	35,417	37,306	39,437
Health and Human Services (National Institutes of Health) [1]	7,161	7,892	8,375	6,862	7,345	8,094
(National HIV Program)	(6,289)	(6,791)	(6,443)	(6,031)	(6,386)	(6,616)
National Aeronautics and Space Admin.			921			414
Energy	4,330	5,688	6,870	3,832	4,741	6,152
National Science Foundation	5,081	5,307	5,378	4,989	5,259	5,501
Agriculture	1,533	1,664	1,881	1,494	1,634	1,756
Interior	1,014	1,048	1,044	972	1,020	1,043
Environmental Protection Agency	415	432	387	415	432	391
Transportation	347	386	421	340	364	405
Commerce	405	329	332	321	391	384
Veterans Affairs	561	441	201	413	449	278
Agency for International Development	217	238	205	199	208	201
All other [2]	193	184	177	234	222	216
TOTAL	58,776	63,049	67,344	56,018	59,897	64,418

1 Totals for NIH in 1988 and 1989 include HIV funding. For 1990, all HIV funding is proposed as a separate element within DHHS, the National HIV Program, and is not included in the NIH totals.

2 Includes the Departments of Education, Justice, Housing and Urban Development and Treasury, the Tennessee Valley Authority, the Smithsonian Institution, the Corps of Engineers, and the Nuclear Regulatory Agency.

Source: See *supra* note 7.

APPENDIX II
 CONDUCT OF BASIC RESEARCH
 BY MAJOR DEPARTMENTS AND AGENCIES

(In millions of dollars) [1]

Department or Agency	Obligations			Outlays		
	1988 act.	1989 est.	1990 est.	1988 act.	1989 est.	1990 est.
Agencies supporting primarily physical sciences and engineering: [2]						
National Science Foundation	1,433	1,553	1,754	1,399	1,527	1,638
National Aeronautics and Space Administration	1,113	1,438	1,462	1,019	1,318	1,407
Energy	1,183	1,303	1,389	1,171	1,304	1,402
Defense—Military functions	873	939	939	836	936	954
Interior	126	147	128	129	148	131
Commerce	31	30	28	28	31	29
Other Agencies [3]	7	7	7	8	8	7
Subtotal	4,767	5,418	5,697	4,589	5,270	5,567
Agencies supporting primarily life and other sciences: [4]						
Health and Human Services (National Institutes of Health)[5]	4,086 (3,794)	4,417 (4,062)	4,756 (4,175)	3,914 (3,644)	4,152 (3,837)	4,621 (4,161)
Agriculture	477	490	511	457	479	499
Smithsonian Institution	75	79	87	73	78	85
Environmental Protection Agency	27	44	76	28	40	73
Veterans Affairs	17	19	16	16	18	16
Other Agencies [6]	20	21	17	20	18	18
Subtotal	4,703	5,070	5,463	4,507	4,786	5,311
TOTAL	9,470	10,488	11,160	4,507	4,786	10,056

1 Amounts reported in this table are included in totals for conduct of R&D.

2 Includes mathematics and computer sciences.

3 Includes the Corps of Engineers, the Tennessee Valley Authority, and the Department of Transportation.

4 Includes psychology and social sciences.

5 Totals for NIH in 1988 and 1989 includes HIV funding. For 1990, all HIV funding is proposed as a separate element within DHHS, the National HIV Program, and is not included in the NIH totals.

6 Includes the Departments of Education, Labor, Justice, and Treasury, and the Agency for International Development.

Source: See *supra* note 7.