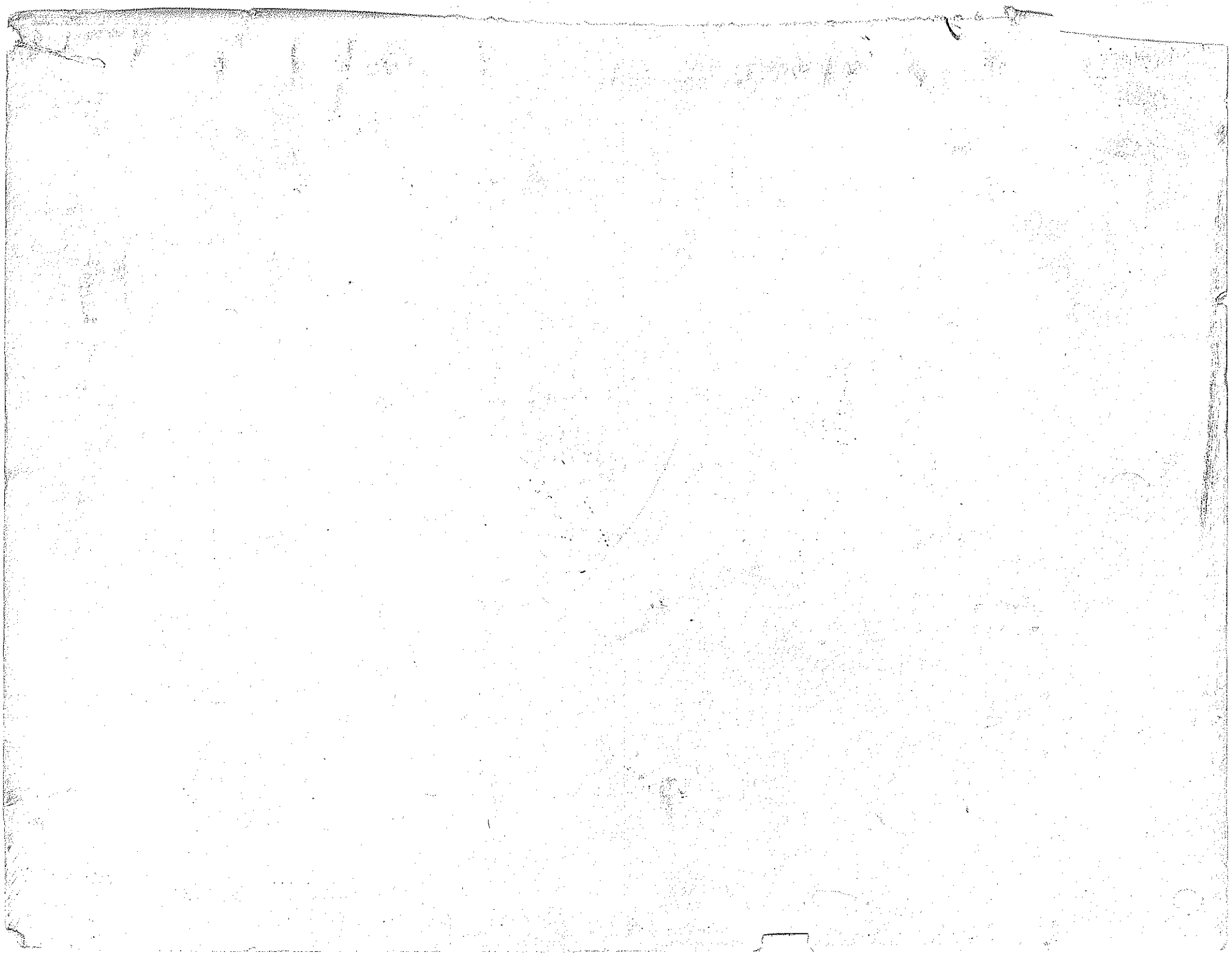
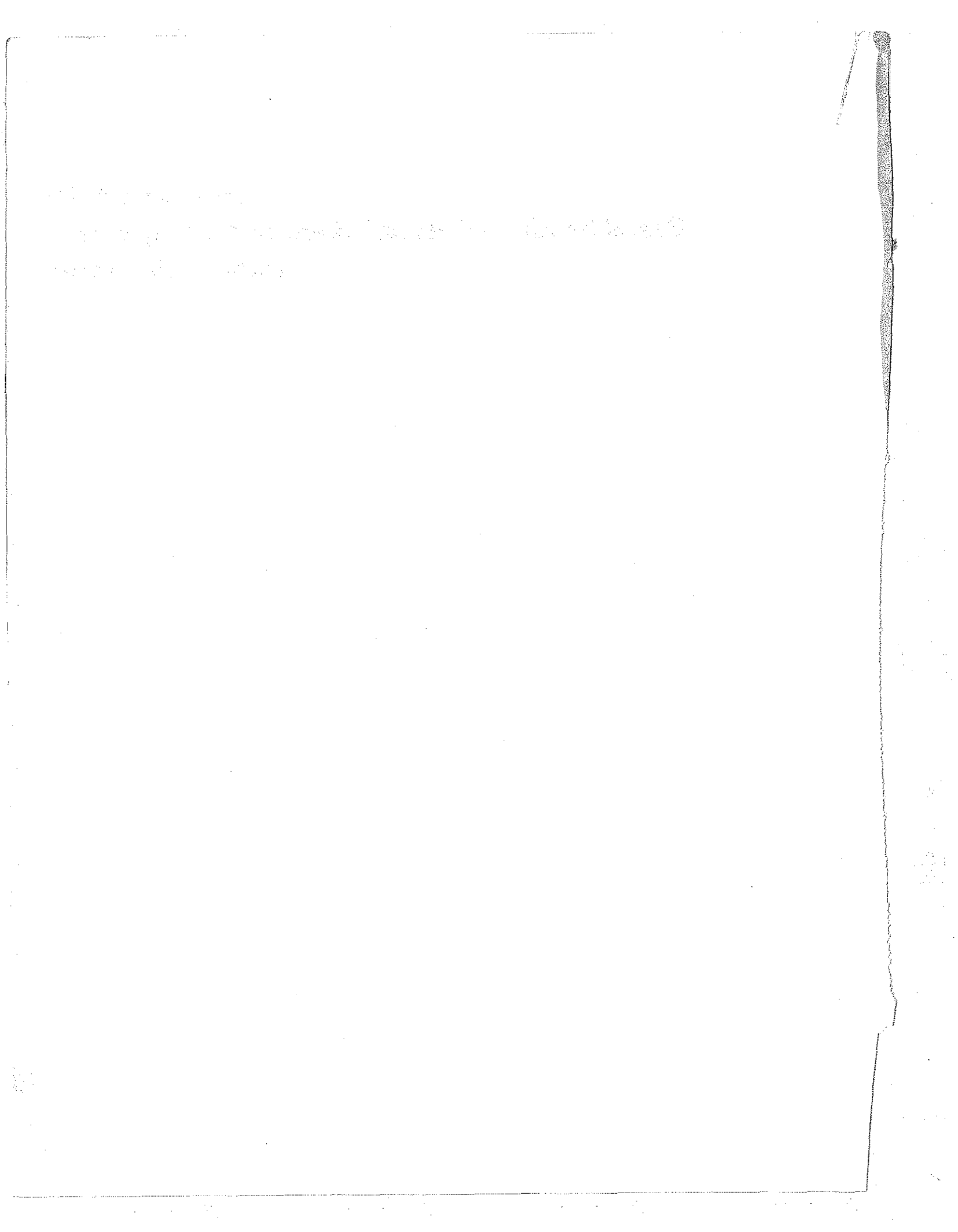




(vi) What is the impact and effect of mandatory licensing on market concentration and competition? Does the acquisition of such rights contribute toward increasing or decreasing concentration in commercial industry--help cement or dilute positions of leadership in industry--create or eliminate forms of market power? Do mandatory licensing provisions have any influence on the cross flow of information or new developments between industries? What specific effects have existing mandatory licensing statutes and judicial mandatory licensing decrees had on expanding public access to technology, research and development efforts? Does mandatory licensing result in commercial gains to licensees and conversely losses to patent holders?

(vii) What is the effect of mandatory licensing on the United States and foreign firms, positions and interrelationships? What is the impact on the ability of U. S. firms to compete in foreign markets, and foreign firms to compete in U. S. markets? Is there any ascertainable effect due to mandatory licensing on U. S. balance of payments? What effect would mandatory licensing have on the international trade of the United States? Would it impact the ability of United States firms to compete in foreign markets? Would it impact the ability of foreign firms to compete in the United States market? Is there any ascertainable impact of mandatory licensing on the employment of United States; (that is, does mandatory licensing tend to be one factor in a chain of events that would ultimately lead to increased foreign employment abroad and reduced employment in the United States?)

D. In regard to the impact and effect of mandatory licensing on ERDA's programs:

(i) What is the need for mandatory licensing in view of ERDA procurement policies? What is the effect of ERDA's patent policy regarding the need for legislative mandatory licensing? To what extent does the application of ERDA background patent policy, applied to ERDA's contractors, alleviate the need of such concerns? To what extent does the application of ERDA's background patent policy to ERDA's contractors and "march-in rights" for inventions made under contract when waiver is granted "alleviate" the need for such provision?

(ii) What is the need for mandatory licensing to accomplish the statutory purposes of applicable ERDA legislative enactments?

(iii) What is the impact of mandatory licensing to encourage private programs to develop new energy sources?

under legislative enactment? What are the procedural processes which control the injunctive remedy? To what extent do the different procedural schemes of mandatory licensing control determine mandatory licensing availability? Do existing procedures provide a suitable vehicle for assuring the availability of mandatory licenses? To what extent has mandatory licensing been applied under the actual discretion of the courts in private litigation? To what extent has mandatory licensing been applied as a result of legislative enactments?

C. In regard to the impact and effect on mandatory patent licensing on private business activities:

(i) What is the impact and effect of mandatory licensing on research and development capital expenditures of the patentee, licensee, and other parties? What effect does mandatory patent licensing have on the generation of inventions from privately funded research and development? Are privately sponsored research and development commitments impacted by mandatory licensing? What is the impact and effect of mandatory patent licensing on the expenditure of privately funded research and development?

(ii) What is the impact and effect of mandatory licensing on the tendency to patent inventions as opposed to the use of trade secrets or other forms of protection? Does mandatory licensing affect the patenting of inventions to protect inventions? Does mandatory licensing result in inventions becoming trade secrets rather than patents? Have the number of patents decreased in industries or firms impacted by mandatory licensing? Does mandatory licensing impede the cross-flow of technology by resorting to trade secrets? What is the likelihood that energy technology will be suppressed, otherwise not exploited, or not disclosed to the public if mandatory licensing is not enacted in the energy field? Is a statutory mandatory licensing provision necessary to prevent the suppression or other non-exploitation of patents in the energy field?

I. The Atomic Energy Act (ERDA)

a. Hearing by Administrator on application for license.
b. Administrator may order patentee to grant license.
c. Administrator will set royalties and terms if parties cannot agree.

II. The Clean Air Act (Environmental Protection Agency)

a. Administrator of EPA makes application on behalf of a private person to the Attorney General.
b. Attorney General certifies the facts to a District Court of the U. S.
c. The U. S. District Court, after a hearing, may order the patent owner to issue a license under such terms as the court has decided.

III. Deleted Mandatory Licensing Provision from the Energy Policy and Conservation Act (Department of Transportation)

a. Hearing by Secretary on application for mandatory license.
b. Secretary certifies his determination to U. S. District Court.
c. District Court holds de novo proceedings on application for mandatory license.

It is apparent from this simple analysis that Congress has not been consistent in drafting provisions for the mandatory licensing of patents. It is also apparent that the procedure tends to become more complex and burdensome to an applicant for a license with each successive proposal. The Atomic Energy Act leaves the entire process under the jurisdiction of the Administrator of ERDA. The Clean Air Act requires that the application for a license be reviewed by the Administrator of EPA, the Attorney General, and a district court of the United States. Section 547 essentially provided for two de novo determinations of the necessity for granting a license; one by the Secretary of the Department of Transportation and one by the district court of the United States to which the Secretary certifies his determination.

ards under part A of this title or other automobile standards under other Federal laws.

An additional requirement in either case states that before mandatory licensing may occur, there may be no other reasonable methods to achieve such development of commercial application.

In the case of (b) above, the Secretary must additionally make either of the following determinations:

(a) that the unavailability of the patent right may result in a substantial lessening of competition or tendency to create monopoly in any line of commerce in any section of the country, or

(b) that the availability of the right may result in substantially increased competition or tendency to reduce a monopoly in any line of commerce in any section of the country and the right is not being significantly utilized in the production of automobiles for commercial purposes.

Whenever the Secretary has made the necessary determinations he shall so certify to a district court. The district courts would be authorized to require the license of any such patent at such reasonable royalty and on such terms and conditions as the court determines following a de novo hearing. Refusals of the Secretary or Attorney General to make determinations under this section following application by any person, or inaction with respect to such applications, shall be judicially reviewable in accordance with chapter 7 of title 5, United States Code.

In order to provide the same rights to competitors of persons who obtain licenses under these provisions for patents reasonably necessary to contribute to advanced automotive technology under the assistance of this part or commercial application thereof, such right shall also be available on the same basis to any other person for the purpose of engaging in the expeditious development or commercial application of advanced automotive technology. Any right to which a government contractor may be entitled under provisions of law, including 28 U.S.C. 1498, would be unaffected by this provision.

This mandatory licensing section provided that the process for requiring a patent owner to grant a license may be initiated by either the Secretary of the Department of Transportation or any person. After

"(b)(1) Whenever the Secretary determines, on his own motion or upon application of any person and after opportunity for interested persons to present views, that--

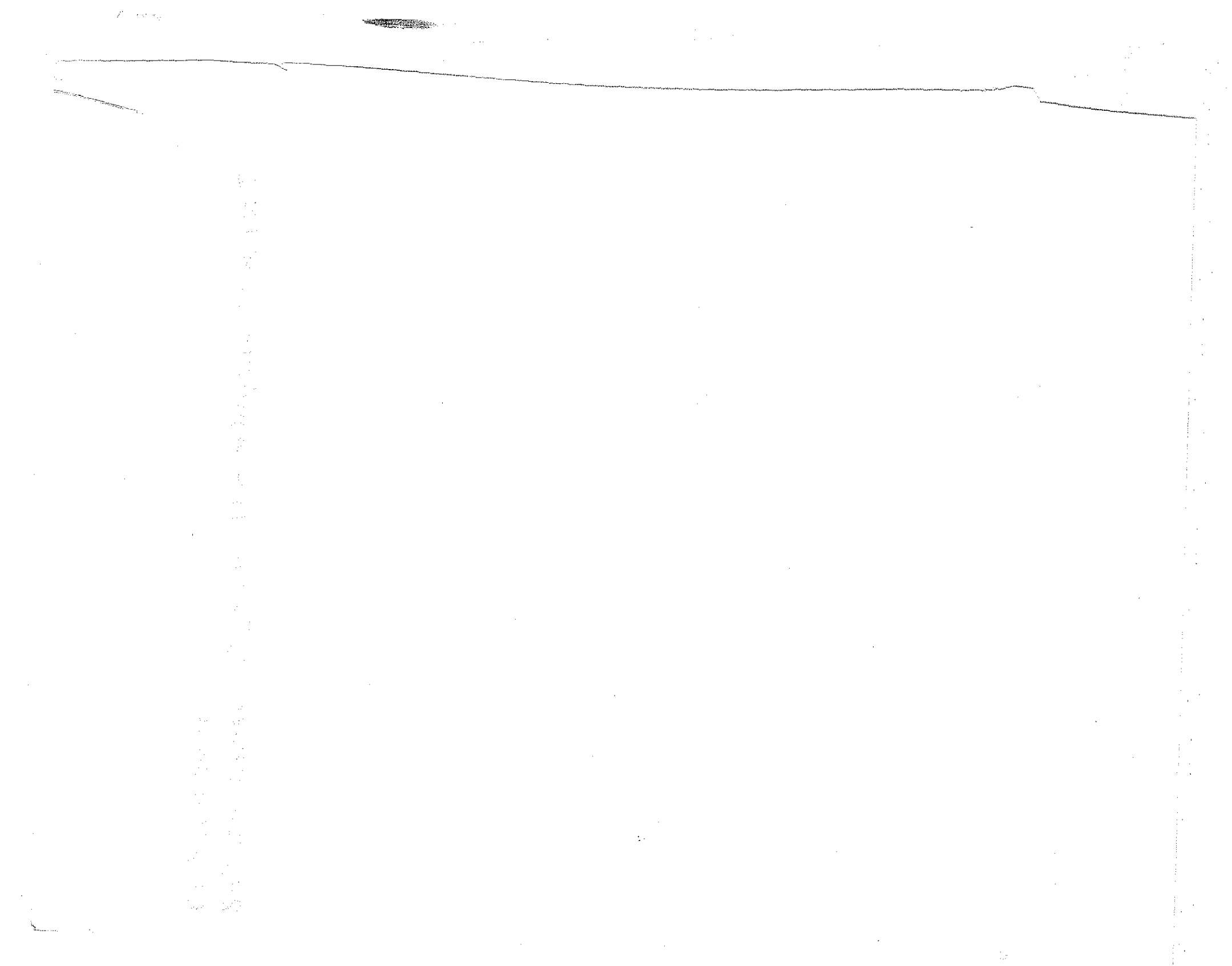
"(A) a right under any United States letters patent, which is not otherwise reasonably available, is reasonably necessary to --

"(1) contribute to the development of advanced automotive technology pursuant to any contract entered into, grant made, or obligation guarantee issued under this part, or to the commercial application of technology developed pursuant to such a contract, grant, or guarantee, or

"(ii) provide for the expeditious commercial application of advanced automotive technology in order to comply with average fuel economy standards under part A of this title, or other Federal automobile standards, and

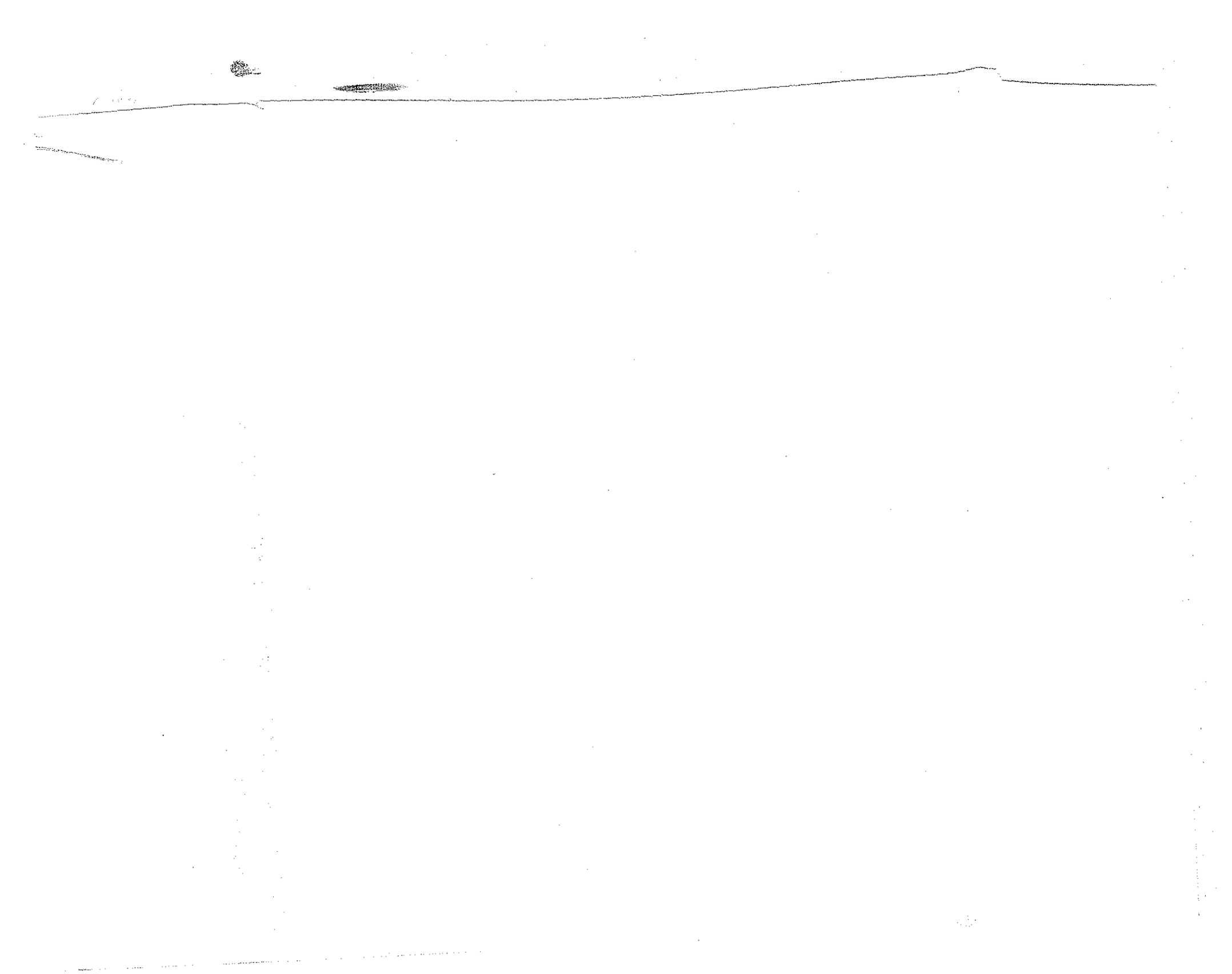
"(B) there are no other reasonable methods to achieve such development or commercial application the Secretary shall (subject to paragraph (2)) certify such determination to a district court of the United States, for proceedings pursuant to paragraph (3).

"(2) No determinations may be made by the Secretary under subparagraphs (A) (ii) and (B) of paragraph (1), unless the Secretary determine, after opportunity for interested persons to present views, that--



	1	2	3	4	5	6
Poland	3 years	Grant	------	x		Avoid importation
Portugal	3 years	Issue	3 years	x	-	
Rhodesia	3 years	Date of Sealing	------	x	x	
Rumania	4 years	Application	------	x	x	
Russia (U.S.S.R.)	------	------	------	x	x	
Rwanda	2 years	------	------	-	-	See text
St. Kitts-Nevis	No term given	------	------	x	-	
St. Lucia	No term given	------	------	x	-	
St. Vincent	No term given	------	------	x	-	
Salvador	------	------	------	See Text		
Seychelles Islands	No term given	------	------	x	-	
Singapore	------	------	------	x	x	See text
South Africa	3 years	Grant	2 years	x	x	
South West Africa	2 years	Patent	------	x	-	
Spain	3 years	Grant	1 year	x	-	
Sri Lanka	3 years	Grant	------	x	-	
Swaziland	3 years	Patent	2 years	x	-	
Sweden	3 years	Grant	------	x	x	
Switzerland	3 years	Grant	------	x	x	Working in Home country suffices for U. S. and German citizens
Syria	2 years	Patent	------	-	-	Importation forbidden
Tangier Zone	3 years	Grant	3 years	x	-	
Trinidad and Tobago	No term given	------	------	x	x	
Tunisia (Tunis)	2 years	Issue	2 years	-	-	Importation forbidden
Turkey	3 years	Issue	2 years	x	-	
Uruguay	3 years	Grant	3 years	x	x	Extension of 2 years possible
Venezuela	2 years	Issue	1 yr. or 2 yrs.*	-	-	*5 and 10 year patents respectively
Zambia	3 years	Date of Sealing	------	x	x	

	1	2	3	4	5	6
Bulgaria	3 years	Grant	------	x	x	
Burundi	2 years	------	------	-	-	See Text
Canada	3 years	Grant	------	x	x	
Ceylon	3 years	Grant	------	x	-	
China (Taiwan)	3 years	Grant	------	x	-	
Columbia	3 years	Grant	1 year	x	-	
Costa Rica	2 years	Grant	3 years	-	-	
Cuba	3 years	Issue	1 year	x	x	
Denmark	3 years	Grant	------	x	x	
Dominica	No term given	------	------	x	-	
Dominican Republic	5 years	Patent	3 years	-	-	
Ecuador	2 years	Grant	2 years	-	-	
Egypt	3 years	Grant	2 years	x	-	
Finland	3 years	Grant	------	x	-	See Text
France	3 years	Grant	3 years	x	x	
German Fed. Rep.	3 years	Publin. of Grant	------	x	x	Working in home country suffices for U. S. and Swiss citizens
Great Britain	3 years	Date of Sealing	------	x	x	
Greece	3 years	Grant	------	x	-	U. S. and German citizens exempt
Grenada	No term given	------	------	x	-	
Guatemala	1 year	Grant	3 mos.	x	-	
Guernsey	4 years	Patent	------	x	-	
Haiti	------	------	------	-	x	
Honduras	1 year	Grant	1 year	-	-	
Hungary	3 years	Grant	------	x	x	
Iceland	5 years	Grant	------	x	-	
India	3 years	Date of Sealing	------	x	-	
Iran	5 years	Issue	------	-	x	
Iraq	3 years	Grant	2 years	-	-	
Ireland	3 years	Date of Sealing	------	x	x	
Israel	3 years	Grant	------	x	x	
Italy	3 years	Grant	3 years	x	x	



23. Section 153(d)(2) of the Act [42 U.S.C. §2183(d)(2)] provides that a hearing on this application shall be held within sixty (60) days after it is filed. Prompt action by the Energy Research and Development Administraiton and the Nuclear Regulatory Commission is respectfully requested in view of the impending injunction against Hewlett-Packard Company.

Respectfully submitted,

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Tracor's attorney rejected Hewlett-Packard's offer of $40 per unit royalty as being clearly insufficient. On July 21, 1975, further discussions occurred at a meeting of Tracor and Hewlett-Packard management in Dallas, Texas. Tracor's management rejected Hewlett-Packard's offer of $40 per unit royalty out of hand and proposed terms which were economically unrealistic and prohibitive.

21. In the absence of intervention by the ERDA and the NRC, Hewlett-Packard will be forced out of the high temperature Nickel-63 detector business. The Atomic Energy Act specifically empowers the Atomic Energy Commission (now ERDA and NRC) to license Hewlett-Packard under the Yauger patent on the same terms as those granted by Tracor to other licensees. Section 153(e) of the Act [42 U.S.C. §2183(e)] provides:

> "... the Commission shall license the applicant to use the invention or discovery covered by the patent for the purposes stated in such application on terms deemed equitable by the Commission and generally <u>not less fair than those granted by the patentee or by the Commission to similar licensees for comparable use</u>." (emphasis added)

It is submitted that the previously established $40 per unit

shown by attached Exhibit F-4. The pesticides lindane and aldrin are detected as shown in Exhibit F-5. Very often the detectors are used to search for contaminating pesticide or insecticide residues in the environment, in plants, and in humans. In the medical field, Nickel-63 detectors are used in the analysis of trace drugs in body fluids. Exemplary applications are in detecting chromium in blood and chlorpromazine in serum, as shown in attached Exhibits F-6 and F-7. In the markets served, the Nickel-63 detector has become the standard in the industry.

18. Various U.S. Government agencies are users of gas chromatograph Nickel-63 detectors in improving the general welfare in the interest of the health and safety of the public (42 U.S.C.§§2011, 2013). The FDA has had an interest in Nickel-63 detectors since at least 1963, when the AEC granted amendments to FDA license No. 8-482-4 to permit the FDA to use Nickel-63 in gas chromatography detector cells. Copies of two early FDA licenses are attached as Exhibits G-1 and G-2. The USDA uses Nickel-63 detectors to sample and analyze pesticides as part of the environmental monitoring activities called for by the Federal Insecticide, Fungicide and Rodenticides Act, the Water Pollution Control Act, and the National Environmental Policy Act. Specific monitoring applications are described in the article of

The Activities Covered by the Patent are of Primary Importance to the Furtherance of the Policies and Purposes of the Atomic Energy Act [10 CFR §81.82(c)]

16. An express policy of the Atomic Energy Act is that the development, use and control of atomic energy shall be directed so as to strengthen free competition in private enterprise [42 U.S.C. §2011(b)]. Hewlett-Packard and Tracor, the patent owner, are competitors. Together they have about 75% of the electron capture detector market. With respect to sales by Hewlett-Packard and Tracor, the Nickel-63 detectors in issue have virtually replaced all other electron capture detectors. The competitive efforts of Hewlett-Packard, Tracor, and others have substantially benefited the American public in the peaceful use of radioactivity by making possible analytical instruments and techniques useful in the preservation of human life and a safe environment. Denial of a compulsory license will permit Tracor to exercise its patent monopoly power and suppress Hewlett-Packard as a competitor, with consequent loss of the benefits the free enterprise system provides in this instance to analytical chemists, environmentalists, the U.S. Government, and the public in general. By granting a compulsory license under the Yauger patent, competition will be preserved and Hewlett-Packard will be able to continue its activities and contributions relating to high temperature Nickel-63 electron capture detectors.

with the invention, the nickel isotope Ni-63 is employed as the beta emitter in an ionization detector (see column 2, lines 28-30); that the use of Ni-63 beta emitters pursuant to the invention is not restricted to the particular cell geometries referred to in the patent; and that the principles of the invention extend to the utilization of a Ni-63 beta emitter in any suitable type of cell construction (column 7, lines 11-16). As simply stated by the patentee, Tracor, any high temperature ionization detection apparatus that uses Nickel-63 as the radioactive source is within the scope of the patent and is an infringement. Thus, the patent is likely to affect all AEC Byproduct Material licensees who use Nickel-63 in ionization detectors at high temperatures, including the Food and Drug Administration (FDA), the United States Department of Agriculture (USDA) and numerous other Governmental agencies and commercial users.

13. Yauger made the patented Nickel-63 detector by inserting a Nickel-63 foil into an earlier known tritium detector and using the resulting combination at high temperatures to analyze pesticide-containing compounds. The earlier known detector used by Yauger was designed by the FDA and built by Yauger's employer, Micro-Tek, under an FDA contract. The FDA detector was similar to the embodiment shown in Figure 5 of the Yauger patent (Exhibit A), except for the

that they can operate at temperatures above 225°C without danger of the radioactive Nickel-63 escaping into the atmosphere, thereby avoiding dire consequences of radiation exposure. This high temperature capability renders Nickel-63 detectors particularly useful for analyzing certain high boiling point substances.

9. The Nickel-63 electron capture detectors presently marketed by Hewlett-Packard are part of the Model Nos. 5713A and 5833 Gas Chromatographs, as described in attached Exhibits C-1 and C-2. An earlier marketed version of a Hewlett-Packard Nickel-63 detector was the Model No. 2-6195 Electron Capture Detector, illustrated in Exhibit D. Hewlett-Packard has been selling Nickel-63 detectors since 1967. All Nickel-63 detectors sold have been pursuant to express authorization from the Atomic Energy Commission provided by AEC license No. 37-7002-2 and the amendments thereto, described in paragraph 4 above. In addition, all customers who receive such detectors must first acquire a license from the Atomic Energy Commission (now NRC) or from an authorized state agency in the so-called agreement states, i.e., those of the United States which by agreement with the AEC have assumed the responsibility for licensing users of radioactive materials. A typical AEC license verification form required to be submitted by customers, and the

4. Hewlett-Packard is eligible for a compulsory patent license because it has been issued Byproduct Material Licenses to use the radioactive isotope Nickel-63 under Section 81 of the Atomic Energy Act (42 U.S.C. §2111). Consequently, Hewlett-Packard qualifies for a compulsory license under Section 153(e) of the Atomic Energy Act and 10 CFR §81.80. More particularly, Hewlett-Packard is licensed to receive, handle, use, store, and distribute Nickel-63 for purposes set forth in license No. 37-7002-2, Amendment 30, attached hereto as Exhibit B-2. The first license for Nickel-63 is embodied in Amendment 9 of the aforementioned license No. 37-7002-2, as shown in Exhibit B-1 (the license was issued to F&M Scientific Corporation, later acquired by Hewlett-Packard). The licenses indicate that Hewlett-Packard and its predecessor company have been authorized by the Atomic Energy Commission to use Nickel-63 since 1964.

5. Hewlett-Packard submits that the circumstances underlying this application justify exercise of the statutory authority of Section 153 conferred on the Energy Research and Development Administration (ERDA) and the Nuclear Regulatory Commission (NRC) as successors to the Atomic Energy Commission. These circumstances are described below. Additional details will be provided upon request by ERDA and NRC.

EXHIBIT LIST

Exhibit A	H.O. Anger Patent No. 3,011,057
Exhibit B	Picker Bulletin entitled "Picker Nuclear Gamma Imaging Systems"
Exhibit C	Amended "Byproduct Material License"
Exhibit D	List of Picker licenses
Exhibit E	Technical article "Scintillation Camera" January, 1958
Exhibit F	Letter from E.A. San Souci to Harold A. Fidler, October 11, 1957
Exhibit G	Memorandum from William E. Elliott to W. D. Douglass, December 16, 1957
Exhibit H	First license between H.O. Anger and the Government, April 29, 1959
Exhibit I	Letter from Leonard G. Nierman to Manfred M. Warren, August 5, 1960
Exhibit J	Letter from Manfred M. Warren to William E. Elliott, February 17, 1961
Exhibit K	1. Letter from Thomas E. Mitchell to H.O. Anger, June 30, 1961
	2. Letter from M. E. Shepherd to H.O. Anger, August 31, 1961
	3. Letter from H.O. Anger to M.E. Shepherd, September 4, 1961
	4. Letter from Thomas E. Mitchell to H.O. Anger, December 29, 1961
Exhibit L	Second license between H.O. Anger and the Government, March 19, 1962
Exhibit M	License between H.O. Anger and Nuclear-Chicago Corporation, March '63
Exhibit N	Amendment to Patent License Agreement (Exhibit M)
Exhibit O	Complaint (CA 12,618)
Exhibit P	Answer and Counterclaim (CA 12,618)
Exhibit Q	Plaintiffs' Reply to Defendants' Counterclaim (CA 12,618)

153(c), (d) and (e), are fully met. That is,

(a) the invention described by the patent is of primary importance in the utilization of atomic energy;

(b) the licensing of such invention under Section 153 is of primary importance to effectuate the policies and purposes of the Atomic Energy Act;

(c) the licensing of the invention is of primary importance for the conduct of the activities of Picker;

(d) the activities to which the patent license are proposed to be applied by Picker are of primary importance to the furtherance of policies and purposes of the Atomic Energy Act;

(e) Picker cannot otherwise obtain a patent license from the owner of the patent on terms which are reasonable for the intended use of the patent to be made by Picker; and

(f) Picker is a licensee under Sections 62, 63 and 81 of the Atomic Energy Act.

March 19, 1962 instrument referred to in paragraph 9 above--was unauthorized and ineffective; that it was a surrender and modification, without consideration, of property rights which already had vested in the Government; that such divestiture was contrary to the terms and policies of the Atomic Energy Act and other federal policies with respect to inventions, which contemplate a retention by the Government of broad patent rights--not only generally in the atomic energy field, but particularly in the field of public health and public welfare, and in situations where divestiture of the Government's rights would lead to inequitable domination by, or preference to, a single manufacturer--so that the public at large will have the benefit of such inventions which have been developed under Government-funded contracts; that such divestiture was not accomplished in accordance with safeguards required by law and by public policy; that it was without due notice to, or opportunity for comment by, other parties in interest or affected thereby, including Picker; that for these and other reasons, such divestiture was void, legally defective, and inoperative; that even if the purported instrument of March 19, 1962 is not void, there are ample reasons which justify and require that the Commission set it aside and invalidate it; and that the

$750,000, and which is expected to be substantially increased, is in jeopardy if the Commission does not grant the patent license requested. The Dyna Camera is looked upon by Picker as one of the leading products of the corporation, and is vital to the maintenance of the position of Picker Nuclear Division in the nuclear medical field. Through July 31, 1969, Picker had delivered to customers a total of 9 Dyna Cameras, and as of that date firm orders were on hand for an additional 60. The selling price per Dyna Camera, while it varies somewhat depending on the particular optional equipment ordered, averages in the neighborhood of $50,000.

17. Steps taken by Picker to obtain a patent license without the necessity of applying to the Commission began with the unsuccessful efforts to obtain patent rights from Anger referred to in paragraph 7 above. Subsequent efforts to obtain a license from Anger likewise met with no success (presumably because of his exclusive arrangements with Nuclear-Chicago), although Anger suggested that Picker make an offer to Nuclear-Chicago. Picker also has attempted to negotiate with Nuclear-Chicago for a non-exclusive license on reasonable terms. Such efforts have been totally unsuccessful. Nuclear-Chicago has offered Picker a license, but the only royalty rate offered is $7,500

the threat of the litigation initiated by Anger and Nuclear-Chicago will not stifle development and utilization in this important area.

15. A further circumstance which gives emphasis to the way in which the various "primary importance" tests of Section 153 are met in this unusual case is the substantial and important AEC-funded development work which has been continuously carried on at University of California facilities, through Anger and his colleagues, under contractual arrangements between the Commission and the University of California. Indeed, it is understood that more recent AEC-funded work at the University of California has led to certain improvements which apparently also will be under the domination of Nuclear-Chicago for a substantial period--unless licenses are available under Patent No. 3,011,057. If Anger and Nuclear-Chicago have their way, Nuclear-Chicago will be the only manufacturer selling to the citizens and civilian hospitals of the United States at large. Thus (except to the extent that they may involve uses "for governmental purposes") civilian hospitals in the United States, and the American people generally, would be subject to Nuclear-Chicago's asserted monopoly and would be deprived of the benefits of competition. Although the American people are the ones who have paid for Anger's

signals from the phototubes are used to produce a visual image of the distribution of a radioactive isotope which has been administered to a patient. These images of the spatial distribution of the isotope are used as diagnostic tools for diagnosing maladies such as thyroid, liver and kidney ailments, and brain tumors. When Picker's Dyna Camera was brought to the market it introduced a number of substantial improvements not found in the Nuclear-Chicago Pho/Gamma Camera--such as a capability of conducting two studies simultaneously with different isotopes, a capability of digitizing the information to enable a computer to be used for diagnosis and for other purposes, a recording capability of the digitized information, a capability of playing back information which has been recorded, and a capability of performing what is known as "profile analysis" with the collected data. Recently Nuclear-Chicago has indicated it would make available for its Pho/Gamma Camera additional equipment which would enable it to meet these Picker innovations.

14. It is of exceptional importance to the public interest that, under the special circumstances existing here, Nuclear-Chicago should not be able to enforce a patent monopoly which chokes off the competing efforts of Picker and other manufacturers in this field and which would deprive the civilian public of the United States of the

"for governmental purposes") with Nuclear-Chicago, dated January 1, 1963 (Exhibit M hereto). The license agreement was subsequently amended by Anger and Nuclear-Chicago on September 21, 1964 (Exhibit N hereto). Purporting to be using its exclusive license from Anger, Nuclear-Chicago has been manufacturing and selling a device known as the Pho/Gamma Camera. Based on the agreed royalty rate of $750 per camera, Anger has received over $300,000 of royalties from Nuclear-Chicago for cameras sold through the end of 1968.

11. Beginning in 1966 Intertech, Inc. and Picker made substantial investments in developing the Dyna Camera, the product referred to in paragraph 3 of this application, and plans were made to produce and begin marketing the Dyna Camera starting about June 1968.

12. On June 21, 1968 a suit was instituted in the United States District Court for the District of Connecticut by Anger and Nuclear-Chicago as plaintiffs against Intertech, Inc. and Picker, charging that Dyna Cameras, then manufactured by Intertech for sale by Picker (and, after the merger referred to in paragraph 3, manufactured and sold by Picker) constitute infringement of said Patent No. 3,011,057. A copy of that complaint is attached as Exhibit O. The

the issuance to him of Patent No. 3,011,057 on November 28, 1961 (Exhibit A).

7. By April 1960 Anger had entered into licensing negotiations with Nuclear-Chicago Corporation (hereinafter "Nuclear-Chicago"), a Delaware corporation with its principal place of business at 333 East Howard Avenue, Des Plaines, Illinois 60018. While these negotiations between Anger and Nuclear-Chicago were pending, Picker on a number of occasions unsuccessfully sought to obtain rights from Anger under the invention claimed in the patent application.

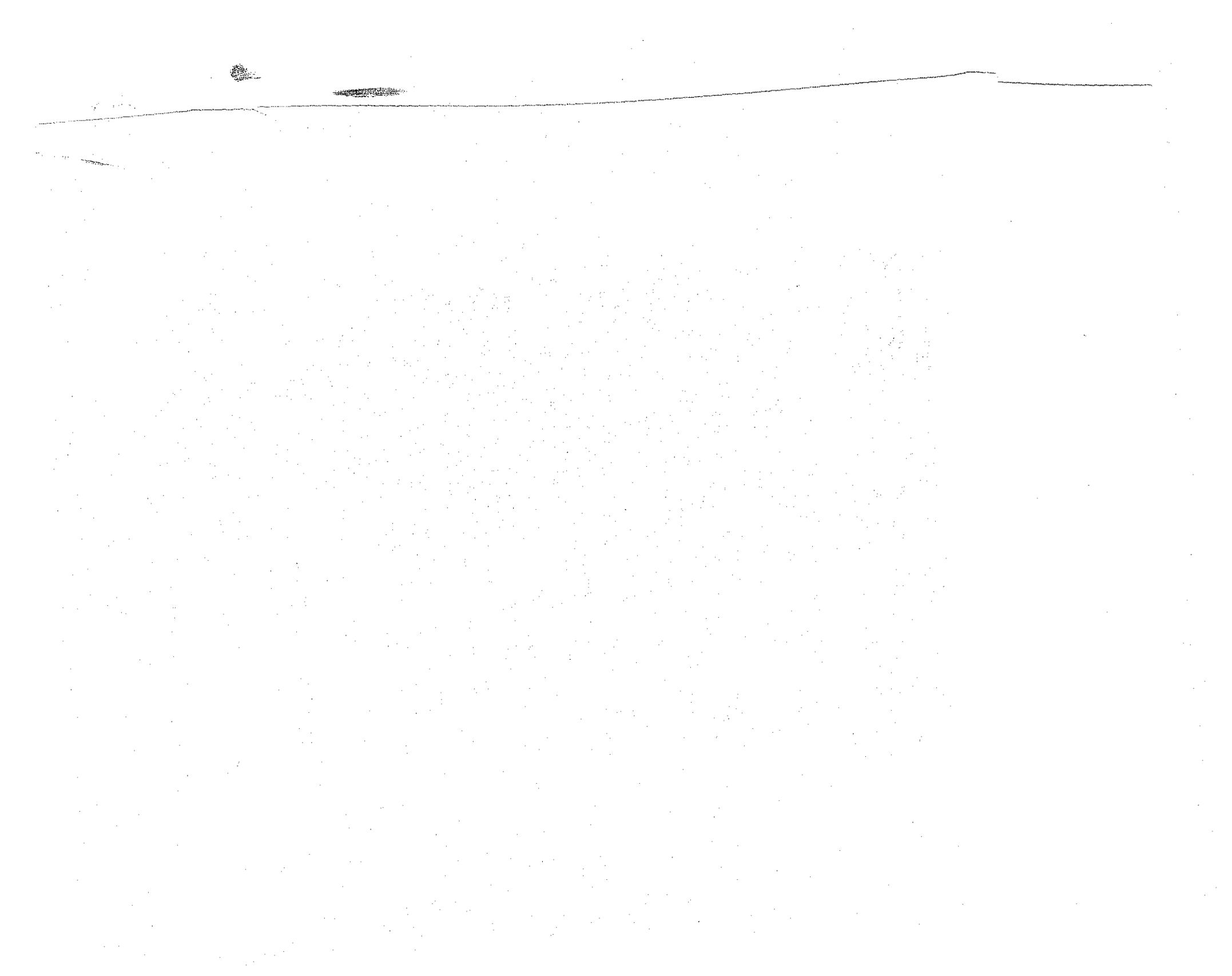
8. It is understood that during the course of his negotiations with Nuclear-Chicago, Nuclear-Chicago raised with Anger the question whether the April 29, 1959 license agreement (Exhibit H) between Anger and the Atomic Energy Commission had left in Anger sufficient rights to permit Anger to grant an exclusive license to Nuclear-Chicago (see letter of Nuclear-Chicago's counsel to Anger's counsel, dated August 5, 1960, set forth in Exhibit I hereto). Anger thereupon entered into further negotiations with the Atomic Energy Commission, seeking a modification which would diminish the rights of the Government and obtain an enlargement of his rights (see letter from Anger's counsel dated February 17, 1961 set forth in Exhibit J hereto). As part of those negotiations a letter dated June 30, 1961 was prepared and sent by Nuclear-Chicago for use

been licensed by the Atomic Energy Commission to receive, handle, use, store and distribute various by-product materials and source materials. License No. 06-07984-01 relates to the facility in North Haven, Connecticut. On December 15, 1967 an amended license (Exhibit C hereto), extending until December 31, 1972 was issued for this facility; the amended license was expressly obtained for the purpose of handling certain radioactive materials used in conjunction with the development and manufacture of the Dyna Camera. Picker also has other licensed activities and facilities. A list of such other licenses from the Commission is attached as Exhibit D.

6. For over twenty years Anger has been regularly employed at facilities of the University of California, located at Berkeley, California. Throughout his employment at the University of California, work performed by him and by his colleagues has been in furtherance of developments and studies extensively funded by the Atomic Energy Commission and the University of California. It is understood that for at least fifteen years, the work of Anger has been directed to mechanisms for use in clinical studies on human patients. In about 1957 a scintillation camera was developed by Anger and his co-workers at Donner Laboratory of the University of California and used clinically on human patients. A January, 1958 technical article by

compulsory license under the patent in accordance with Section 153 of the Atomic Energy Act. In this connection, it is submitted that the unusual circumstances of the present case amply justify the Commission's exercising the special statutory authority conferred by Section 153. The nature of these unusual circumstances is summarized in this application. Picker stands ready to amplify and substantiate the facts thus summarized, in whatever detail and manner the Commission may deem to be appropriate.

3. Picker is a New York corporation, with its principal office and place of business at 1275 Mamaroneck Avenue, White Plains, New York 10605. Picker also operates a facility at 333 State Street, North Haven, Connecticut 06473 where, among other products, it manufactures a gamma radiation imaging device known as the Dyna Camera. The Dyna Camera is described more fully on pages 4 and 5 of Picker's bulletin entitled "Picker Nuclear Gamma Imaging Systems", such bulletin being attached hereto as Exhibit B. Prior to December 1968, this North Haven facility was the principal office and place of business of a Connecticut corporation known as Intertech, Inc. Intertech, Inc. initially was substantially owned by a predecessor of Picker and was later owned 100% by Picker. In December 1968, Intertech, Inc. merged into Picker. It is in connection with the manufacture and sale of this important product, the Dyna Camera,



that this effectively barred the AEC from penalizing him under any other section of the act?

I might note in this regard that the Federal Communications Commission's civil penalties authority—in Title 47, United States Code, sections 503 and 504—contains a specific provision nearly identical to the language quoted.

Mr. HENNESSEY. Yes; I am familiar with that section, Mr. England. I believe that that regulation which speaks in terms of a penalty under this section of their regulations will not interfere with the imposition of a penalty under some other section of their regulations. We don't have the same kind of situation. This would be the only section of our whole regulatory framework where we would have the authority to impose penalties.

I think the language that would say the imposition of a penalty under this new authority would not interfere with prosecution for any criminal violations under our act would be appropriate in our case.

Mr. ENGLAND. Doesn't the Commission have authority to suspend, modify, or revoke a license, and isn't this another penalty authority that you have?

Mr. HENNESSEY. I had not considered it as that in this context where we were establishing a penalty. I look at those other forms of action as more remedial than penalty.

Mr. ENGLAND. I see.

Just one final question. Would your problem with the quoted language be dispelled if the word "other" were deleted where it first appears in the sentence or if the word "criminal" were removed?

Mr. HENNESSEY. The suggestion is made that, instead of saying "criminal penalty," we might say "civil sanctions," if that would accomplish your objective here.

Mr. ENGLAND. The committee might want to consider that. Thank you.

Chairman HOLIFIELD. Thank you.

If there are no further questions, we are going to ask our visitors to retire at this time and we will go into executive session.

(Whereupon, at 3:45 p.m., Friday, September 12, 1969, the Joint Committee proceeded into executive session.)

(Subsequent to the hearing the AEC furnished the following answers to written committee questions:)

CONGRESS OF THE UNITED STATES,
JOINT COMMITTEE ON ATOMIC ENERGY,
Washington, D.C., September 18, 1969.

JOSEPH F. HENNESSEY, Esquire,
General Counsel, U.S. Atomic Energy Commission,
Washington, D.C.

DEAR MR. HENNESSEY: As Chairman Holifield indicated at the close of your testimony on the 1969 Omnibus Bill, there are a few additional questions the answers to which will be helpful to the Committee in making a final determination on the measures to be included in the final bill. The questions are set forth in the enclosure and I would appreciate your replies thereto at your earliest convenience.

Sincerely yours,

EDWARD J. BAUSER,
Executive Director.

Enclosure: Questions.

Chairman HOLIFIELD. At the beginning, the reason for this section was, of course, that the Government was spending practically all the money in the research and development and therefore if we had not enacted legislation similar to this we would have given discriminatory advantage to any corporation that had a contract for research and development with the Atomic Energy Commission. We are paying them for the services and at the same time if we were allowing them to have the exclusive patent it would have given them an unfair bonus, you might say, over other manufacturers. That was one reason.

The second reason was, of course, to maintain a number of competitive bidders for Government contracts and to insure that they had all the known technology to compute their bids on and to utilize if they were successful bidders. I think it has worked out very well.

I note on page 4 that your filings for the Commission dropped down from 1955 to 1969 from 51 percent to 13 percent.

Does this indicate a lack of attention on the part of the AEC or a change of policy?

Mr. ANDERSON. The percentage has gone down, not the number of filings filed on behalf of the Government. I think it is evident that private industry is in many areas of atomic energy and they have increased their filings as have foreign governments. They have increased their expenditures in development, as well.

The foreign governments have gotten into the atomic energy field and they are making extensive filings in the United States.

Chairman HOLIFIELD. In your opinion, Mr. Anderson, has the Atomic Energy Commission protected the Government, especially on those patents which would be of weapon use by protecting the granting of open license?

Mr. ANDERSON. I think we have. Of course, as you know, the weapon, itself, is excluded from patenting.

Now, on the component parts, insofar as any developments that have been made by the Commission, I trust we have taken every effort to secure protection on behalf of the U.S. Government.

Chairman HOLIFIELD. Are there any questions from members of the committee?

Representative PRICE. What effect would it have in the interim between the time of the expiration of the other act and the effective date of this act? What effect could it have in any given situation?

Mr. HENNESSEY. Before you arrived, Mr. Price, I made a statement for the record that assuming this bill is enacted it will go back and pick up any patents for which applications have been filed between the September 1 date and the effective date of the bill.

Chairman HOLIFIELD. At this point, let me ask you to prepare for the committee a legal opinion on this to present to the committee for possible use in case questions arise on the floor as to the effect of this hiatus.

Mr. HENNESSEY. I will be happy to do that, Mr. Chairman.

(The document referred to follows:)

The invention that is involved in the patent is in the components and circuitry of a diagnostic tool for use in locating and mapping distributed gamma radiation sources.

Representative PRICE. What is the Picker Corp.?

Mr. ANDERSON. What is the Picker Corp.?

Representative PRICE. Yes.

Mr. ANDERSON. I don't really know too much about the Picker Corp. except I believe they are an instrument manufacturer and have a place of business in Connecticut, among others, because this suit is the subject of patent litigation in Connecticut.

The owner, Mr. Anger, licensed Nuclear Chicago. Mr. Anger and Nuclear Chicago have sued Picker Corp. in the U.S. District Court in the State of Connecticut in a suit filed, I believe, in June 1968, for infringement by Picker of the patent.

I do not know the history or the development of Picker Corp.

Chairman HOLIFIELD. Now, the Picker Corp. is suing this Chicago corporation, you say?

Mr. ANDERSON. No; it is the reverse. Anger and Nuclear Chicago, his licensee, are suing Picker for infringement.

Chairman HOLIFIELD. Picker in order to get out from under possible damages in that suit is now asking you to exercise a compulsory patent licensing proceeding, and are you so doing?

Mr. HENNESSEY. Yes; the law requires, Mr. Chairman, that within 60 days of the filing of that application AEC hold a hearing and make these statutory determinations, and we will proceed to do that.

Chairman HOLIFIELD. Was this application to you related to a patent obtained by the Chicago corporation independent of the AEC?

Mr. ANDERSON. It was obtained by Mr. Anger independently. He filed for the application and was accorded the patent and then we understand licensed Nuclear Chicago.

Mr. HENNESSEY. I think we ought to make it clear, the invention was developed by Mr. Anger under an AEC contract.

Chairman HOLIFIELD. It was?

Mr. HENNESSEY. Yes, sir.

Chairman HOLIFIELD. At the time you did not take any steps to claim it but allowed him to go ahead and claim it?

Mr. ANDERSON. It was reported.

Chairman HOLIFIELD. It was reported but you took no steps——

Mr. ANDERSON. And he requested release for commercial development and it was released to him on condition that he would file an application to secure a patent and attempt to exploit it. The AEC was not carrying on a program of commercial development of this kind of equipment.

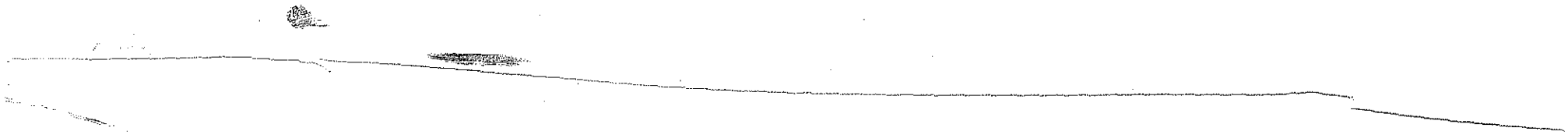
They conducted the program to the extent of basic research. It was the University of California representative's position and Anger's position that it would be better to release it to advance the program more rapidly if it were released to the inventor to promote.

Chairman HOLIFIELD. Now, at the time you released it to him, did you or did you not take any step to notify him that he had to participate in compulsory licensing?

Mr. ANDERSON. No, sir.

Chairman HOLIFIELD. Under what basis do you do it now?

Mr. ANDERSON. We retained the nonexclusive license for governmental purposes. This was prior to 1963 when the Presidential State-



completely on Government financing and funding as distinct from some of the other industries that have been built more on a private investment basis. The whole technology is basically a technology that has been developed by the Government and paid for by the Government.

One of the purposes of the act is that there be no monopoly in this field, in the public interest, and that there be as broad a base of participation as is possible. One of the things that bothers some of us is that, due to the very magnitude of the industrial effort that is involved, two or three companies now are approaching the point where they are the only competitors in the field. And this is something which, perhaps, cannot be helped. But certainly it seems to me that, with the preponderance of Government investment in bringing this technology forward, we should not allow anyone to profit on this whole great investment to the point where they establish a monopoly position and thereby preclude the broad use of the peacetime applications of atomic energy.

Representative WESTLAND. I am sure we could debate this for hours. I just have the fundamental thought that when a company is out on its own, without the Government subsidizing or paying any part of the bill, and they develop something, that development should belong to the company regardless of who it is, whether it is General Electric, Westinghouse, or anybody else.

Representative HOLIFIELD. I think it is a matter of judgment, but——

Representative WESTLAND. You said you could force them to put this out on royalty basis?

Mr. ANDERSON. Only if they refuse to license a licensee of the Commission.

Representative BATES. I think the important thing here is the development of the field. If you have an outfit that puts a lot of money into a project and they come up with an important invention they should get some benefit out of it. If you have somebody in the wings waiting for somebody else to bring something forth, I think that they are really not contributing to the development of the field, and you are going to penalize the people who have done all the work.

Representative HOLIFIELD. I do not think it is quite as sharp as that——

Representative BATES. I think you can draw that line.

Representative HOLIFIELD. Or as simple as that, because, in order to utilize a discovery or invention, you would have to have quite a complex, and you would have to have a background of know-how or you would not be able to compete. Some of the industrial companies are finding out that they can't compete, let us say, with General Electric and Westinghouse because they just simply do not have the overall background.

Representative BATES. I know of a big contract that was just let by the Government, and this little outfit got it. They never did all of the basic work that was necessary, but they knew it was done and it was available to them and they took advantage of it, and as a consequence they got the contract. Of course, it can happen under certain circumstances. Under other circumstances, perhaps it would not.

Mr. Ramey, maybe I am not following you quite clearly. On the one hand, you said that section 153 has not been used since 1954; yet, on the other hand, Mr. Anderson has said that they have issued something like a thousand licenses, or have a thousand licensees. How do you reconcile those two statements?

Mr. RAMEY. I think the licenses he was referring to were from the Commission on Government Patents, whereas this section refers to private-owned patents developed by private inventors' own money.

Representative WESTLAND. The thousand licensees, then, did not come about as the result of the application of section 153?

Mr. ANDERSON. That is correct, they did not.

Representative WESTLAND. Then the second thing: Would section 153 apply to construction of reactors where the Federal Government is not putting in any money?

Mr. RAMEY. Yes, sir; it would.

Representative WESTLAND. Why?

Mr. RAMEY. Well, the kind of situation that could occur would be if a private manufacturer Y has developed, is developing, a reactor concept and, say, sells it to a utility. And the one referred to here is that, if the utility then began the construction of a plant under contract, and it turned out that inventor X over on the other side here had a patent application pending with a prior claim to, say, a basic fuel element configuration of this reactor being constructed by the utility and this other equipment company Y, it would be possible for inventor X to try to get injunctive relief to prevent the construction of this particular plant, or, in the alternative, to get a very high royalty.

Representative WESTLAND. Maybe I got lost part of the way through that one, Jim.

Let's take Jersey Central, for example. As I understand it, this is supposed to be a privately financed operation. GE is building it for Jersey Central.

Mr. RAMEY. Yes, sir.

Representative WESTLAND. Suppose during the process of building this plant GE developed some product or some new method of operation. Would it be the Commission's contention that this section 153 would apply and that any new development there should be made available to other licensees by the AEC, or that it should be thrown up for grabs?

Mr. RAMEY. The only cases where this would apply would be, Mr. Westland, in future cases where GE, say, has gotten a private patent on developments coming out of the Jersey Central reactor.

Representative WESTLAND. Mr. Holifield has taken one position in this matter, and I have heard his argument several times, and I know what his position is—that where a company is employed by the Federal Government, then any inventions that result from that should be made available to the public. But now we have a case where the Federal Government is not putting a dime in.

Mr. RAMEY. Yes, sir.

Representative WESTLAND. It is still your contention that any development there, or any patent that results from the construction of that reactor, should be made available to the public by application of section 153?

Mr. RAMEY. It might be by application of this section, but only in extremely limited instances.

Then the problem comes. If they are successful, they are successful for two reasons: because of their competence and because of the Government contribution of a million dollars. Now they went into this voluntarily for the million dollars. They wanted to develop this. Now the Government certainly is entitled to what it has paid for, because the contractor accepted fair compensation for his efforts. So the Government has an investment there, and that investment should be available to other pump manufacturers who may or may not have been quite as competent or bid a little bit higher, let us say. But in any event, it is the taxpayers' money that has been spent.

Is it not true that in regular industry a scientist is picked to do a certain line of research in a field on the basis of his prior education and knowledge and accomplishment? And when he goes to work for GE or Westinghouse he signs a little piece of paper, and that little piece of paper says that anything that he develops as a result of using the facilities and the money of GE or Westinghouse and his own competence, background, and so forth, belongs to the man who pays his salary, to the company that pays his salary. And it is up to him as to whether he wants to sign that piece of paper or not. If he signs it and he utilizes the facilities and the funds of GE or Westinghouse, then they have a claim on that improvement or whatever device he was working on. Is not that the custom in the industry?

Mr. RAMEY. That is the custom in the industry; yes, sir.

Representative HOLIFIELD. And when the Government takes a similar position, it takes, in my opinion, at least a parallel position to industry. I think it also takes the position of justness toward the people who put up the money; the taxpayers of America.

Mr. RAMEY. That is correct.

Mr. ANDERSON. In other words, we acquire the rights that are generated or grow out of the contract work. He retains whatever know-how he has and the company that comes and gets this million-dollar pump contract, whatever know-how they had, that is still theirs.

Representative HOLIFIELD. And he also obtains the right to go ahead and use this, as far as use is concerned, because the Government does not charge a royalty on whatever right it has acquired, but it makes it available to him.

Mr. ANDERSON. That is correct.

Representative BATES. But not exclusive.

Representative HOLIFIELD. No, not exclusive.

Representative BATES. That is the point I wanted to raise.

Representative HOLIFIELD. The point is that he is not entitled to it exclusively, any more than the scientist is entitled to his patent rights.

Representative BATES. That was the point I raised: Does he or does he not? And there is a lot of gray there. This individual indicated a sort of propensity on his part to refrain from engaging in the Government programs because of a loss of this very definite advantage he had originally.

Mr. ANDERSON. He does not make his background necessarily available to everybody. He does, under the Commission——

Representative BATES. Makes available the end product.

SEC. 4. *Definitions:* As used in this policy statement, the stated terms in singular and plural are defined as follows for the purposes hereof:

(a) Government agency—includes any Executive department, independent commission, board, office, agency, administration, authority, or other government establishment of the Executive Branch of the Government of the United States of America.

(b) "Invention" or "Invention or discovery"—includes any art, machine, manufacture, design, or composition of matter, or any new and useful improvement thereof, or any variety of plant, which is or may be patentable under the Patent Laws of the United States of America or any foreign country.

(c) Contractor—means any individual, partnership, public or private corporation, association, institution, or other entity which is a party to the contract.

(d) Contract—means any actual or proposed contract, agreement, grant, or other arrangement, or sub-contract entered into with or for the benefit of the government where a purpose of the contract is the conduct of experimental, developmental, or research work.

(e) "Made"—when used in relation to any invention or discovery means the conception or first actual reduction to practice of such invention in the course of or under the contract.

(f) Governmental purpose—means the right of the Government of the United States (including any agency thereof, state, or domestic municipal government) to practice and have practiced (made or have made, used or have used, sold or have sold) throughout the world by or on behalf of the Government of the United States.

(g) "To the point of practical application"—means to manufacture in the case of a composition or product, to practice in the case of a process, or to operate in the case of a machine and under such conditions as to establish that the invention is being worked and that its benefits are reasonably accessible to the public.

[F.R. Doc. 63-10888; Filed, Oct. 11, 1963; 9:21 a.m.]

Representative BATES. If that is so, why do we go to 1969 under this proposal?

Mr. ANDERSON. I think that the President's program pertains to inventions that result from Government-sponsored research and development, whereas this particular section is dealing with those inventions that are the result of completely private development. This assures, you might say, a freedom of action in the field of atomic energy, which Mr. Ramey has indicated appears, because of the uniqueness of our program, warranted for an additional limited period.

Representative BATES. It is pretty difficult to determine when it is a private invention and when the Government has been involved in these things. When you look over the lifetime of a company it gets rather complicated.

Mr. ANDERSON. It does. On the other hand, I think we have recognized in our work—and we do, as you know, business with over a thousand different contractors in the country, and many of those contractors are the same as the Department of Defense deals with, and the same as NASA and other Government agencies deal with, and the determination of when an invention is made or conceived is, as a practical matter, sometimes difficult, but I think can be resolved on the basis of the facts even though a company may do private work and, at the same time, do Government work. I think that we in the Commission have found cases where it has been difficult to resolve.

On the other hand, I think in most of the cases it is not too difficult to resolve as to whether the invention arose from the sponsorship of the private individual himself or whether it arose as a result of contract work.

STATEMENT OF GOVERNMENT PATENT POLICY

BASIC CONSIDERATIONS

A. The government expends large sums for the conduct of research and development which results in a considerable number of inventions and discoveries.

B. The inventions in scientific and technological fields resulting from work performed under government contracts constitute a valuable national resource.

C. The use and practice of these inventions and discoveries should stimulate inventors, meet the needs of the government, recognize the equities of the contractor, and serve the public interest.

D. The public interest in a dynamic and efficient economy requires that efforts be made to encourage the expeditious development and civilian use of these inventions. Both the need for incentives to draw forth private initiatives to this end, and the need to promote healthy competition in industry must be weighed in the disposition of patent rights under government contracts. Where exclusive rights are acquired by the contractor, he remains subject to the provisions of the antitrust laws.

E. The public interest is also served by sharing of benefits of government-financed research and development with foreign countries to a degree consistent with our international programs and with the objectives of U.S. foreign policy.

F. There is growing importance attaching to the acquisition of foreign patent rights in furtherance of the interests of U.S. industry and the government.

G. The prudent administration of government research and development calls for a government-wide policy on the disposition of inventions made under government contracts reflecting common principles and objectives, to the extent consistent with the missions of the respective agencies. The policy must recognize the need for flexibility to accommodate special situations.

POLICY

SECTION 1. The following basic policy is established for all government agencies with respect to inventions or discoveries made in the course of or under any contract of any government agency, subject to specific statutes governing the disposition of patent rights of certain government agencies.

(a) Where

(1) a principal purpose of the contract is to create, develop or improve products, processes, or methods which are intended for commercial use (or which are otherwise intended to be made available for use) by the general public at home or abroad, or which will be required for such use by governmental regulations; or

(2) a principal purpose of the contract is for exploration into fields which directly concern the public health or public welfare; or

(3) 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; or

(4) the services of the contractor are

(i) for the operation of a government-owned research or production facility; or

(ii) for coordinating and directing the work of others,

the government shall normally acquire or reserve the right to acquire the principal or exclusive rights throughout the world in and to any inventions made in the course of or under the contract. In exceptional circumstances the contractor may acquire greater rights than a nonexclusive license at the time of contracting, where the head of the department or agency certifies that such action will best serve the public interest. Greater rights may also be acquired by the contractor after the invention has been identified, where the invention when made in the course of or under the contract is not a primary object of the contract, *provided* the acquisition of such greater rights is consistent with the intent of this Section 1(a) and is a necessary incentive to call forth private risk capital and expense to bring the invention to the point of practical application.

(b) In other situations, where the purpose of the contract is to build upon existing knowledge or technology to develop information, products, processes, or methods for use by the government, and the work called for by the contract is in a field of technology in which the contractor has acquired technical competence (demonstrated by factors such as know-how, experience, and patent position)

words of art go—this has been handled just like any other commercial patent situation?

Mr. ANDERSON. It has been handled just like any other commercial patent situation.

Mr. RAMEY. Where they put their money into it.

Representative HOLIFIELD. That is right; that is where they put their money into it. In other instances, the Commission has claimed the patent where the Commission has spent the money, and it has made these patents available to the broad base of industry?

Mr. RAMEY. Right.

Representative HOLIFIELD. And is not this in the true spirit of American patent law, that he who pays for the development of a patent is entitled to claim a right under that patent?

Mr. ANDERSON. I think this is so.

Representative HOLIFIELD. Then the charges that have been made by some people that this has been unfair seem to fall by the wayside, because in those instances where the Government has paid for this knowledge and this development it has, as a matter of right under patent law, the right to claim it, and has so claimed these patents.

Mr. ANDERSON. That is correct. Although I suppose there are those who would be in the conservative group, one might say, who deem that the Commission may not have paid the full bill in certain instances and where industry, therefore, has contributed something and industry is entitled to something. I think we in the Commission——

Representative HOLIFIELD. On the other hand, they have been given access, as you say, to 3,300 patents without having to pay royalty?

Mr. ANDERSON. That is correct.

Representative HOLIFIELD. So there has been a balance, if anything, in favor of private industry because the mass of patents that have been obtained have been obtained as a result of Government expenditures of the taxpayers' money; is that not true?

Mr. ANDERSON. I believe this is true; yes.

Representative HOLIFIELD. Are there any questions?

Mr. Bates?

Representative BATES. Over the weekend I had several people approach me, Mr. Chairman, on patent law in general, and particularly with reference to those circumstances when the Government puts in a lot of money. I was hoping the time would come when we might start to unify these laws rather than come up with separate packages for AEC and DOD. I wonder if you would comment with respect to separate legislation, as we are doing here, rather than a general compilation of law under which they would all be included under the same law?

Mr. ANDERSON. I think, sir, that the President's statement of October 10, 1963, was an attempt to apply across the board some consistency with respect to inventions that were the result of Government-sponsored research. The President's statement, as you know, provides that for cases other than those provided for by statute that there are circumstances where, in the public interest, it is deemed that the Government should acquire the principal or exclusive rights in the inventions. And there are other circumstances where the Government should acquire, possibly, only a license. This statement

Mr. ANDERSON. No; I think I did not characterize the claims as such. I characterized the requests for awards. You asked the dollar amounts they asked.

Representative HOSMER. That is what I am talking about—the money. These people are talking about the money.

Mr. ANDERSON. For example, in one case they asked for 6 percent of whatever the Commission has ever spent, without any relationship to the nature of the particular invention.

Representative HOLIFIELD. Six percent of the complete budget for the life of the Commission?

Mr. ANDERSON. What the Commission has spent in a certain particular field. In another instance, it is an unspecified amount believed due by them, and whatever amount they feel the Commission wants to give.

Representative HOSMER. On this 6-percent figure in a particular field, are you familiar with patent royalties in industry?

Mr. ANDERSON. Yes, sir. In most of these instances one has to recognize, first, they do not have patents, and, secondly, therefore, you have to define, or attempt to define, what their inventive contribution is. So you are up against a difficulty where, first, you have to define the contribution, and then there is no standard because in most of these instances they have not granted licenses on any commercial basis to anyone.

Representative HOSMER. But, in industry, is it not common to find royalty provisions that are 6 percent of the gross on a particular product that is made as a result of the patent?

Mr. ANDERSON. I would think the 6-percent gross product item would be a rather high royalty. It could fluctuate anywhere from 15 percent down to a small fraction of 1 percent, largely depending, in many instances, upon the number of items that are produced, the character of the item, the nature of the invention as respects the entire item, and what the aspects of the contribution are.

Representative HOSMER. Then we are not to take this figure of 6 percent of Commission expenses as a ridiculous figure on its face, are we, in relation to common patent practice?

Mr. ANDERSON. Without relationship to the product, I would say it is not necessarily meaningful. But, if you take it in relationship to a particular product, then it is meaningful.

Representative HOSMER. That is right; but not in this case. I presume classification is such that we cannot get into it anyway.

Mr. ANDERSON. In several of these, they are unclassified, fortunately. There are two cases before us now, I believe, where classification does enter into the picture.

Representative HOSMER. I suppose we can't go too far in discussing a matter that is pending before the AEC.

The only point I wanted to make is that I do think the Commission has proceeded with what it regards as good will and good intention, but in the instances that I have reviewed I have had a feeling that the claimants settled for far less than they should, as a practical matter of getting something rather than getting nothing at all. I think the Government has an obligation to be fair in this regard, and I hope that in handling these cases in the future this will be the Government's attitude. Even Mortimer Caplin of the IRS told the boys to "have a heart."

tives must be balanced against the possibility of enlarging the preferred position of the necessarily limited number of companies, many of whom have developed their experience substantially at public expense. The Commission believes that this balance can best be achieved through continuation, for an additional period of 5 years, of the compulsory licensing provisions of section 153, for as President Eisenhower stated in transmitting the 1954 atomic energy legislation to the Congress, "Until industrial participation in the utilization of atomic energy acquires a broader base, considerations of fairness require some mechanism to assure that the limited number of companies, which as Government contractors now have access to the program, cannot build a patent monopoly which would exclude others desiring to enter the field."

It is our view that, while the industrial base is broader today than it was in either 1954 or 1959, it is still limited and the state of the art is still in a formative stage. During this period of development it is vitally important, if our atomic progress is to flourish, that we encourage and facilitate the dissemination of technical information, know-how, and processes of importance to the atomic energy industry. The mere existence of the authority contained in section 153 would, we feel, contribute to this end.

We believe, therefore, that there is a continuing need for the authority provided by that section. In fact, the potential usefulness of this authority to private industry, in the vigorous development of the uses of atomic energy, would seem, in some degree, to be greater in the current period than in prior years. More patents are now being issued to both domestic and foreign companies and section 153 provides safeguards against injunctive action against private industry in cases where, for example, a costly installation inadvertently infringes a patent of the type described in section 153(a).

I would point out that this compulsory licensing authority cannot be exercised merely as a matter of routine. The act places significant limitations on the scope of the Commission's authority under this section. In addition to the required primary importance findings mentioned earlier, the Commission must find that the applicant cannot otherwise obtain a patent license from the patent owner on terms which the Commission deems reasonable. Moreover, detailed procedural provisions assure the patent owner the protection of a full hearing. The restrictive conditions and procedures surrounding the exercise of the licensing authority are such that it could, as previously mentioned, only be used in comparatively rare and compelling cases. On balance, then, a further extension of these provisions for 5 years, as proposed, seems desirable.

In concluding, I would also point out that the practices of the Commission during the existence of this authority clearly demonstrate that the Commission regards this as an authority not lightly to be invoked—that it is a "reserve power" to be exercised only under exceptional circumstances. The best evidence of the Commission's predisposition in this connection is the fact that it has never exercised the power conferred by section 153.

Representative HOLIFIELD. We will stop there for questions. Are there any questions, Mr. Hosmer?

Representative HOSMER. Yes. Now, Mr. Ramey, I am a little bothered about the long length of time which it takes for the AEC to make some kind of a settlement with these inventors. Do you have anything to say on what the Commission's intentions are, prospectively, relative to this problem?

this balance can best be achieved through continuation, for an additional period of 5 years, of the compulsory licensing provisions of section 153, for as President Eisenhower stated in transmitting the 1954 atomic energy legislation to the Congress, "Until industrial participation in the utilization of atomic energy acquires a broader base, considerations of fairness require some mechanism to assure that the limited number of companies, which as Government contractors now have access to the program cannot build a patent monopoly which would exclude others desiring to enter the field."

Representative HOLIFIELD. I think the Chair can say that he is pleased with this position on the part of the Commission. I agree that there is not a broad enough base yet in this field, nor have we developed the art near enough to the point of economic use for the people for us to relinquish the Government equity which has been acquired through the expenditure of public moneys. As soon as we can get to that point, I would like to see this section removed. But I certainly agree that it may take another 5 years to get to that point.

Mr. OLSON. That is our feeling.

Representative HOLIFIELD. I think it is the point of wisdom to keep this in effect for the next 5 years.

Mr. OLSON. We recognize that this is a very tender issue of principle with many patent lawyers and the Patent Bar Association, and we have considered that seriously.

Representative HOLIFIELD. It is more a matter of traditional principle with them, however, than a matter of effect upon the present situation. I doubt if anyone in industry has ever asked the AEC to use this provision.

Mr. OLSON. That is right. It is purely a matter of principle, Mr. Chairman. We have had no actual situation come up to test it.

Representative HOLIFIELD. You have had no one in industry ask for this type of cross-licensing.

Mr. OLSON. That is right.

Representative HOLIFIELD. This would indicate that they do not need it or that there is no patent position that would require a request of the Commission.

Mr. OLSON. I might point out that this is not too far afield from the eminent domain approach to the issue. There might be an eminent domain aspect come up if someone held a patent which was of such basic importance to the advancement. So this is not completely foreign to other remedies that are present in our law.

Representative HOLIFIELD. In case we do develop the original patent position such as in the field of thermocouples, as fusion develops, by some private party, would not this compulsory licensing be useful in the national interest?

Mr. OLSON. It might be very necessary. That was one of the factors, Mr. Chairman, that we considered in deciding to recommend its extension.

Representative HOLIFIELD. Is the Government patent position at the present time so strong in the reactor field that a private patent calling for use of this section is unlikely?

Mr. OLSON. I don't believe we can say it is unlikely. It is the possibility that makes us want to continue this section. There is always that possibility in this infant stage of development.

Representative HOLIFIELD. There is a possibility and therefore you think it is wise to retain it.

Mr. RAMEY. In your review of your patent applications to see whether or not the Commission should act, have there been applications that might be termed to be marginal; that is, they look to have some importance and then you sort of sift them and make up your mind finally that you didn't think you should take title but that they are of some importance, but not of primary importance?

Mr. ROLAND ANDERSON. Are you speaking of issued patents to date?

Mr. RAMEY. Yes.

Mr. ROLAND ANDERSON. I think on the issued patents we have found none in which we would desire to invoke the privileges of section 153. There has been, as Mr. Olson said, no private industrialist who has felt that there has been any patent that has interfered with his activity where he would desire to invoke it.

As to what we might contemplate arising in the future, I think it can be said that there are several applications that are pending that might be the subject of such action at some later date, depending upon whether or not they are employed by private industry or by the Government.

Representative HOLIFIELD. Of course, if such a case does develop, it is the AEC's policy to immediately step forward and to utilize this section of the Act?

Mr. ROLAND ANDERSON. If that became necessary, I think the Commission would act.

Mr. RAMEY. Would this apply to controlled thermonuclear inventions as well as nuclear reactors?

Mr. ROLAND ANDERSON. It would under the definition of atomic energy as now embraced in section 11 of the Atomic Energy Act, I believe.

Mr. RAMEY. Does the Government have as basic a position in the controlled thermonuclear field as it does in nuclear reactors?

Mr. ROLAND ANDERSON. The Commission has filed a considerable number of applications in the thermonuclear field. There were some private contributions in the thermonuclear field at a very early date which are privately owned, but in which the Commission has acquired license rights for the Government.

Representative HOLIFIELD. Will the counsel point out in the Atomic Energy Act the language which he construes as covering the field of thermonuclear energy as well as nuclear fission?

Mr. ROLAND ANDERSON. In section 11(c), "The term 'atomic energy' means all forms of energy released in the course of nuclear fission or nuclear transformation," and it is the latter phrase which I believe, although the technical people would be better qualified to speak, is deemed to cover the fusion field.

Representative HOLIFIELD. Mr. Olson, do you agree with that interpretation of the word "nuclear transformation" or do you feel that should be clarified?

Mr. OLSON. I would have to defer to Mr. Anderson in this particular area, but offhand I would certainly see no objection to the interpretation he has given. It is a pretty broad phrase, nuclear transformation.

Representative HOLIFIELD. You may proceed.

The Bills were passed by voice vote on July 8, 1964 in the Senate and on July 21, 1964 in the House.

The next and most recent five-year extension was proposed in the AEC Omnibus Bill for 1969, HR. 14,295 introduced by Mr. Holifield on November 20, 1969 and S. 3169 introduced by Mr. Pastore on November 21, 1969. In its analysis of the bill, the Commission again noted that

> "The restrictive conditions are procedures surrounding the exercise of the authority are such that it could only be used in comparatively rare and compelling cases where the patent owner refused to license a Commission-authorized private activity . . ."
>
> "While the industrial base is broader than at the time of the initial legislation in 1954 and the extensions in 1959 and 1964, it is still limited and certain fields of atomic energy appear to be concentrated in a relatively few companies. In addition, in certain areas industrial application is just emerging from the research phase to a possible commercial phase . . . Moreover, existence of the authority may have a salutary effect in preventing situations in the atomic energy industry where a company would refuse to license others at reasonable royalties. It would also provide a safeguard to private industry against injunctive active action in situations where a costly installation might infringe a patent embraced within Section 153."

Hearings before The Joint Committee on Atomic Energy, 91st Congress First Session, on AEC Omnibus Legislation -- 1969 page 51 (hereinafter "The 1969 Hearings").

Mr. Joseph Hennessey, General Counsel in testimony at the Joint Committee Hearing on the bill stated that in the opinion of the Commission the reasons which compelled Congress to enact the legislation in 1954 and extended its operation in 1959 and 1964 are still valid, and that because of the increased number of patents being issued, the authority would be of

the increased number of patents being issued, the authority would be of greater imporance than it has been in prior years. In response to Representative Holifield's request for the "real justification" of extending Section 153, Mr. Ramey replied:

> "We think this power, as I said, is a kind of reserve power that could be useful in the future in the event of a rather important patent that the owner might not wish to get on the market, and would be useful, for example, in our advance converter reactors in the next 10 or 15 years." (1963-64 Hearings, p. 107.)

The Assistant General Counsel for Patents of the AEC, Roland A. Anderson, acknowledged that AEC was not aware of any refusal of a private owner to grant a patent license.

Representative Westland strongly disagreed with the rationale of Section 153:

> ". . . when a company is out on its own, without the Government subsidizing or paying any part of the bill, and they develop something, that development would belong to the company regardless of who it is, whether it is General Electric, Westinghouse, or anybody else." (1963-64 Hearings, p. 118.)

Representative Bates, agreeing with this view, stated that a private firm might be unwilling to do research and instead would be "in the wings waiting for somebody else to bring something forth." 1963-64 Hearings, p. 118. On the other hand, Representative Holifield supported the extension.

Sentiment against the extension was expressed by the Patent Sub-Committee on Government Interests of the National Association of Manufacturers in a letter to the JCAE. (1963-64 Hearings, p. 247.) The

expressed no position on the issue; Casper Ooms, on balance, favored continuation for what he regarded as a remote but real possible need; Bennett Boskey emphasized that the power to compel licensing was so restricted that it could be exercised only in a rare and compelling case. See Selected Materials on Atomic Energy Patents, Vol. I. March 1959, Joint Committee Print, 133 et seq., esp. 152, 153-5, 169-72, 184-5, 234-7.

In the April 21-23, 1959 Hearings on the AEC-proposed revisions, the Patent Bar and industry representatives (although centering their main attack on Section 152) generally continued to oppose any extension of compulsory licensing, while public power and labor representatives continued their support for an indefinite extension. What comments were made by JCAE members during the hearings were favorable to extension. The JCAE report on the 1959 Authorization Bill only briefly adverts to the incorporation of the five-year compulsory licensing extension, without comment on the reasons therefor. H.R. Rep. 529, 80th Cong., pp. 25-6. The extension provision was generally justified on the floor as in the public interest; reference was made to the JCAE Hearings on it, the need for further coniseration of the AEC-proposed revisions in the Patent Chapter, and the need to move on the extension provision because of the proximity of September 1, 1959, - the cut-off date. There was no debate. Cong. Rec. June 15, 1959, 9737-8, 9803. Statements were made on the floor that the other proposed revisions to

to the fact that in the immediate future only a few firms may be involved in peacetime power and acknowledging that "dangers of restrictive patent practices are present, though not inherent, in such a situation." Id., 757. Two Congressmen (Cole and Van Zandt) vigorously objected to continuance of compulsory licensing provisions as unconstitutional, damaging to the economy, unnecessary (because of Representative Cole's alternative approach that became Section 152), and "socialism run rampant". Id., 843-7. On the other hand, Congreeemen Holifield and Price, in their respective views on the bill, spoke strongly in favor of the compulsory licensing provisions. They were, in fact, in favor of no termination date, leaving it to Congress to legislate "at such time as a broadened industrial base for atomic energy became evident", and stating that at the very minimum the period should extend for ten (10) years. Id., 875.

In the floor discussion that followed, Mr. Cole and the Republican majority carried the day in the House; the compulsory licensing section was stricken and his alternative (present Section 152) substituted. The Senate struck this alternative and resurrected the compulsory licensing section (substituting 10 for 5 years). The conference compromise was to accept both provisions, with a five-year limitation on compulsory licensing. Legislative History, Vol. III, 3002-3003. In reporting back to the House, Congressmen Cole and Van Zandt stated they were given assurances by the conferees that the Joint Committee would take up the patent problem at the next Session. Id., 3003-3007.

the licensing of patents (Sec. 308) to those subject to emission standards to be set under the legislation. It is our intent to provide an assured supply of technology to all needing it to comply with the standards.

After reflecting upon the implications of the section, I would have preferred that the issues involved be reviewed by the Judiciary Subcommittee on Patents, Trademarks, and Copyrights. However, the conference report language on the matter is an improvement over the provisions in the Senate-passed bill. The section will not become generally operative for at least two years, and in the interim I would hope that the issues involved will be the subject of hearings and review.

The following is a summary of the provisions of the Conference Agreement on the Clean Air Amendments of 1970, Section 308.

Section 308. In order to prevent the stringent standards of the Act from contributing to monopolist concentrations in any industries, the conference agreement provides for a limited mandatory licensing of the technology necessary to meet automobile emission standards, emission standards for hazardous air pollutants or new source standards of performance, if covered by a U. S. patent. If rights under such a patent are not reasonably available, or the technology not commercially available through purchase of control equipment, the Attorney General may certify to a district court that some lessening of competition will result and seek a license on reasonable terms and conditions.

The mandatory licensing provisions as they were finally enacted (42 USC 1857-h6) read as follows:

SEC. 308. Whenever the Attorney General determines upon application of the Administrator---

(1) that--

(A) in the implementation of the requirements of Section 111, 112, or 202 of this Act, a right under any United States letters patent, which is being used or intended for public or commercial use and not otherwise reasonably available, is necessary to enable any person required to comply with such limitation to so comply, and

(B) there are no reasonable alternative methods to accomplish such purpose, and

(3) reasonable provisions may be made for periodic royalty payments by the licensee and inspection of the relevant books and records of the licensee by an independent auditor or other person acceptable to both licensor and licensee, who shall report to the licensor only the amount of the royalty due and payable;

(4) reasonable provisions may be made for cancellation of the license upon failure of the licensee to make the reports, pay the royalties, permit the inspection of his books and records, or for disclosure of know-how or trade secrets to a third person as hereinabove provided;

(5) reasonable provisions may be made to prevent further use or disclosure by the licensee, in the event of cancellation, of know-how or trade secrets acquired by the licensee pursuant to such license.

(c) If the owner of any United States letters patent, patent application, trade secret, or know-how and any applicant for a license thereunder pursuant to subsection (a) are unable to agree upon reasonable royalties to be charged under such license or upon any other provision which may be included in such license pursuant to subsection (b), any such disagreement shall be resolved by arbitration under the rules and procedures of the American Arbitration Association then in effect.

(d) Nothing in this section shall be construed to grant an exemption from the antitrust laws of the United States or any judgments, orders, or decrees issued thereunder.

The House Bill (HR 17255) to amend the Clean Air Act which did not contain mandatory licensing was unacceptable to the Senate which struck out all of the House Bill after the enacting clause and inserted a substitute amendment. The conference committee then agreed to a substitute bill for both the House Bill and the Senate amendment. The following comments were made by the House Managers of the substitute bill:

SECTION 308. MANDATORY LICENSING

The Senate amendments contained provisions for the mandatory licensing of patents, trade secrets, and know-how whenever the Administrator determined that the achievement of standards established under

Air Act requirements from creating competitive disadvantages which well might result in increased concentration of control of production facilities in the hands of a few large companies, the Committee has established the framework in section 309.

The procedure for mandatory licensing established by this section would make available to any party who can show a need to know to have access to any patents, trade secrets, or know-how necessary to achieve compliance with Sections 113, 115, and 202 of this Act.

The language in no way is designed to give large manufacturers production rights to inventions trade secrets or discoveries of others. The purpose is to guarantee to all producers in a given field an adequate supply of technology with which to meet the statutory obligations which would be imposed by the bills as reported.

Section 309 has been carefully drawn to clearly indicate that the Secretary would only provide access to patents, trade secrets or know-how when such devices, technology or procedures are not otherwise available to parties requesting assistance. The intent of section 309 is to prohibit any one from refusing to make available discoveries of inventions which would assist in the control and abatement of air pollution.

The proposed bill does not provide specifically that any proprietary information made available to the licensee be used solely in connection with the licensed use, but it should be understood that any license granted in accordance with the Secretary's order under the provisions of this section would contain reasonable provisions to prevent the use by the licensee of any such know-how or trade secrets for any purpose other than to carry out the purposes of the Secretary's order.

In actual operation, this provision would enable the Secretary to require any patent, trade secret, or know-how to be made available to any person who must have access to such patent, trade secret, or know-how in order to comply with the provisions of the Act. The bill would provide that a reasonable royalty must be paid by the recipient to the owner of such patent, trade secret, or know-how, and, in the event of a dispute over the character of the royalty, such dispute would be resolved in accordance with the procedures of the American Arbitration Association.

The Committee expects that the Secretary in carrying out his duties under this section would

On page 92, beginning at line 7: [Sec. 309] strike out the subsection (c) and subsection (d) and insert the following new subsections:

"(c) If the owner of any United States letters patent, patent application, trade secret, or know-how and any applicant for a license thereunder pursuant to subsection (a) are unable to agree upon reasonable royalties to be charged under such license or upon any other provision which might be included in such license pursuant to subsection (b), either party may seek a declaration of the amount of royalties to be charged or any other provision of such license in an action for declaratory judgment under Sections 2201 and 2202 of Title 28 of the United States Code in a court of competent jurisdiction regardless of the amount in controversy or the citizenship of the parties.

"(d) The court, in issuing any order or judgment on any action brought pursuant to subsection (c) of this Section may award or apportion the cost of litigation, including reasonable attorney and expert witness fees whenever the court determines that such action will do justice in the case.

"(e) Nothing in this section shall be construed to grant an exemption from the antitrust laws of the United States or any judgments, ordered or decreed thereunder."

In support of this amendment the statement of Mr. Baker was printed in the Record, as follows:

DECLARATORY JUDGMENT ROUTE

Section 309(c) of the bill, as amended in Committee, deviates from other provisions of the bill with respect to the manner in which disputes arising under the act should be resolved. It heaps compulsory arbitration upon compulsory licensing, without any right of judicial review.

The bill provides for arbitration under the rules of the American Arbitration Association then in effect, Congress has no control over those rules and they may be changed over night without Congressional control or approval. On the other hand, the rules under which the federal judiciary operates are subject to control by Congress and the procedures available in the Federal Courts

Senator Hart was against such a proposal and stated, "Absent the incentives of competition, I am not very confident that the management of any of the firms involved in these industries could justify the necessary large research expenditures. If it is feared that one firm may corner the technology through patents, trade secrets, or know-how, your Committee may wish to consider the desirability of mandatory licensing at reasonable royalties of proprietary information which would assist in ultimately achieving the proposed Act's 1975 emission standard."

A number of Senate Bills (S.3229, S-3466, and S-3546) were considered and culminated in S.4358 which was reported in Calendar No. 1214, Report No. 91-1196. In that report, Section 309 of the Bill dealing with "Mandatory Licensing" was discussed in the comments of the Department of Health, Education, and Welfare in the following manner:

> Mandatory Licensing. The Senate bill (S.4358, Sec. 309) compels holders of patents, trade secrets, or know-how on pollution control devices to grant licenses to all applicants for the use (upon payment of reasonable royalties) of these devices, if the Secretary of HEW determines that this is necessary to facilitate compliance with air pollution standards for automobiles, aircraft, and vessels, for hazardous facilities, or for new stationary sources. There are no comparable provisions in the House bill.
>
> The constitutionally-recognized protection which patents afford has been a key element in encouraging innovation and we are seriously concerned as to what the ultimate effects of this major change in policy might be. In particular, we are uncertain as to its possible deterrent effects on the incentive to invent in the pollution control field, where the need for innovation is so great. Moreover, we are not aware of the basis for assuming that developers of essential air pollution control technology would refuse to make it available either by license or direct sale to the users.

formal claims. It would appear desirable to harmonize in some way the treatment by ERDA of the claims and incentives based upon nuclear and nonnuclear inventions and patents so that they could be treated in the same way by the same tribunal.

Administratively the PCB has been given initial hearing jurisdiction in applications for compensation arising out of disclosure by ERDA to any foreign nation of patent data not belonging to the United States (Section 173 of the A.E. Act, 42 USC 2223); in requests for compensation resulting from the imposition of a secrecy on a privately owned patent application (35 USC 183); and in determinations that atomic energy patents be affected with the public interest and the compulsory licensing of such patents (Section 153 of the A.E. Act, 42 USC 2183). The ICB of NASA, in addition to its award function, has statutory authority to consider waivers of patent rights in inventions arising out of NASA contracts (Section 305(f) of the NASA Act, 42 USC 2457(f)).

The Atomic Energy Act authorized the PCB to consider awards to inventors in the atomic energy field, not otherwise eligible for compensation under the Act. The Board does not initiate awards, and all claims for award are commenced by an application filed with the Board by the inventor or his assignee. Employees of ERDA and its contractors are not barred from an award by reason of their employment, but it has been the practice to require the waiver of the right to an award in employment contracts. The NASA awards can be made to any person and may be initiated by the Board or any person. NASA awards are used as incentives for meritorious contributions of Government and contractor employees.

The statutory standards of the Atomic Energy Act for the consideration of award claims, result in an adversary proceeding similar to claims against the Government for infringement of a private patent in the Court of Claims. Although claims for an award in the PCB

licensing of private patents, and harmful private monopolies has not yet materialized. The need for the Board to consider just compensation claims arising out of the eminent domain takings of private patent rights by the enactments of the 1946 and 1954 Acts has substantially disappeared in view of the enactment in 1961 of a specific state of limitations of six years applicable to Board cases. It may be also noted that the Board's jurisdiction in the award areas is substantially paralleled, at least as to awards involving patents, by the Court of Claims jurisdiction under Section 1498 of Title 28 of the United States Code. It is therefore likely that the Board's future impact on legal disputes involving atomic energy will be much less dynamic than it has been in the past.

The Atomic Energy Commission was abolished and the Energy Research and Development Administration (ERDA) the Nuclear Regulatory Commission (NRC) was established by the Reorganization Act of 1974. The Patent Compensation Board and its functions under the 1954 Act were transferred to ERDA. The Federal Nonnuclear Energy Research and Development Act of 1974 (FNERDA) authorized the Commission to grant a discretionary award for major contributions in the nonnuclear field.[1/] Under this reorganization scheme, the ERDA Administrator was given authority for the administration of both nuclear and nonnuclear incentive and awards provisions.

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1 / Federal Nonnuclear Energy Research and Development Act of 1974 (FNERDA) Section 7a(6)

(a) "In carrying out the objectives of this Act, the Administrator may utilize various forms of Federal assistance and participation which may include but are not limited to - ...

(6) "incentives, including financial awards, to individual inventors, such incentives to be designed to encourage the participation of a large number of such inventors."

cases remanded, In Re Phillips[1] and In Re Anderson[2] the remand was based primarily upon the Board's holding of the applicability of a statute of limitations to the cases. In Anderson this was the sole issue, but in Phillips it was one of a number of points and the Board's decision was sustained upon the other points by the Court of Appeals. A third case, In Re Hobbs[3] involved three appeals on a number of different issues, but was finally resolved by the Court of Appeals on a question of patent validity, with the Board being sustained on its determination of invalidity of one patent and reversed on its determination of invalidity of the second patent. All three of the remanded cases were settled by negotiation with moderate settlements in two cases and a larger settlement in the Hobbs case.

In addition to these three cases which were settled, the Board considered four other major cases, all of which were settled by the Commission after proceedings before the Board but prior to a Board decision. These were: In Re Granni[4] involving the Fermi groups very early work on fission and transmutation of elements; In Re Commissariat a L'Energie Atomique[5] involving French 1939-1940 concepts on fission, D_2O reactors and the atomic bomb; In Re Seaborg et al[6] involving the Seaborg groups discoveries in plutonium chemistry

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1 / Phillips et al v. Atomic Energy Commission, 316 F.2d 401, 137 USPQ 90
2 / Anderson v. Atomic Energy Commission, 313 F.2d 313, 136 USPQ 401
3 / Hobbs v. U.S., 376 F.2d 488, 153 USPQ 378; 451 F.2d 849, 171 USPQ 713
4 / PCB Docket Nos. 2 and 11
5 / PCB Docket No. 18
6 / PCB Docket No. 7

of peaceful uses is reflected in its establishment of requirements that inventions be disclosed to the Government, its revocation of patent rights for research uses and its establishment of compulsory licensing procedures for patents in the atomic energy field "affected with the public interest".

The resulting changes in the patent area affected by the Act raised novel legal problems which would require resolution in the courts. At that time, however, the technology involved in atomic energy was complex and little known, and the patent and technical problems difficult for general courts. In addition, the technology was almost entirely secret so that before any controversey could be presented to a court it would have required a security clearance procedure for all involved court personnel, a restriction which courts had previously resisted.

Congress therefore created a Patent Compensation Board and specifically gave it jurisdiction: 1) to hear claims for just compensation arising out of the revocation of existing patent rights by the enactment of the Act or by the taking of patents; 2) to consider and recommend awards for atomic energy inventions disclosed to the Government, and; 3) to determine a reasonable royalty for private atomic energy patents used by the Commission or compulsorily licensed by the Commission to private parties under the Act. Persons aggrieved by the resulting administrative determinations were given the right to appeal to the federal courts of appeal and in certain eminent domain cases to the Court of Claims.[1/]

1 / Section 13(a) of the Atomic Energy Act of 1946

The Act further provided for the establishment of a Patent Compensation Board[1] and for judicial review of Commission decisions in the Court of Appeals for the District of Columbia.[2] The Board was authorized to consider applications for awards, just compensation, and reasonable royalty determinations as the case may be,[3] and to make recommendations to the Commission,[4] in accordance with specific standards[5] under the Act.

Generally the Act provided for the determination of three types of actions: (a) claims for compensation for the Commission's revocation of patent rights in existing patent,[6] (b) requests for the determination of royalty fees for the Commission's use and for private licensed use of a patent declared to be affected with the public interest,[7] and (c) claims for awards to inventors who timely disclose their inventions to the Commission, but are not otherwise eligible to receive compensation under the Act.[8] These provisions are carried over into the Atomic Energy Act of 1954[9] -- an amendment to the 1946 Act.

The amended Act contains a provision for the Commission to grant an additional award for any especially meritorious contribution to the

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1 / Section 11(e)(1) of the Atomic Energy Act of 1946
2 / Section 11(e)(4) of the Atomic Energy Act of 1946. The Act also provided for a review of an eminent domain taking of patent rights in the Court of Claims or a district court. Sec. 13. This provision was omitted from the 1954 Act.
3 / Section 11(e)(1) of the Atomic Energy Act of 1946
4 / Section 11(e)(1) of the Atomic Energy Act of 1946
5 / Section 11(e)(3) of the Atomic Energy Act of 1946
6 / Section 11(e)(2)(b) of the Atomic Energy Act of 1946
7 / Section 11(e)(2) of the Atomic Energy Act of 1946
8 / Section 11(2)(c)(3) of the Atomic Energy Act of 1946
9 / Section 157(a)(b)(c) of the Atomic Energy Act of 1954

The Conference Committee does not believe it necessary to resolve this issue in this conference, particularly because of anticipated receipt from ERDA early next year of its report and recommendations on the patent provisions of Section 9.

Section 17(u)—Disclaimer—State Laws, Etc.

Subsection (u) of the amendment contained in subsection (b) of Section 17 makes clear that the granting of a loan guarantee under the authority of that Section would convey no immunity from Federal or State laws to the demonstration projects constructed with the assistance of such guarantees.

The Conferees note that the undertakings which would be assisted will be private or, in some instances, possibly non-Federal, public ventures. Depending upon circumstances of siting, proprietorship, nature of the technology, or type of industry and product involved they will be subject to various laws and regulations of Federal, State, and local government which are now in effect or which may be enacted or imposed in the future. It is the intent of this section that the granting of a guarantee would neither exempt a borrower or a project from such legal obligations which would otherwise apply or to extend any obligation which otherwise would not apply.

The Conferees particularly note that nothing in Section 17 is intended to effect the rights of various parties to water resources which are established under State and Federal law and interstate compact.

In response to the concerns expressed by Western governors, the Conferees considered those situations in which demonstration facilities which are assisted by loan guarantees were located upon Federal lands. As would be the case elsewhere, it is the intent of this measure that a loan guarantee would not in any way change or extend the applicability of any and all Federal, State, and local laws and regulations which would otherwise apply to the demonstration facility absent such loan guarantee.

The management of activities on the public lands is primarily a Federal responsibility, and State jurisdiction has been extended selectively by the Congress. The policy procedure which has ordinarily been adopted is exemplified by the Clean Air Act. This Federal law establishes administrative procedures by which regulations are promulgated by a State and are approved by the Environmental Protection Agency as consistent with Federal minimum requirements, such as Federal new source performance standards. The joint Federal-State implementation plans then become generally applicable to all facilities within the State, including facilities on the public lands. Similar approaches have been taken in the areas of water quality control and occupational and mine health and safety statutes.

Two major areas which are particularly applicable to major demonstration facilities, however, are not yet covered by a Federal-State regulatory regimen. They are surface mining reclamation and energy facilities siting. Some States have adopted rigorous laws and regulations in these areas or may do so in the near future.

The Federal government, thus far, has exercised its management of surface mine reclamation and energy facilities siting on the public

these agencies, as well as other Federal agencies, have determined that their statutory patent provisions do not apply.

Loans, price support and price guarantees are "arrangements" or "agreements" for fiscal assistance. In a loan situation the lender usually agrees to provide money to the borrower upon the condition that the money only be used for a specified purpose. Generally, a pledge of security is involved along with other terms and conditions to protect the lender. Consideration for the lender's money is usually the payment of an interest charge by the borrower. The purpose of a loan is of great concern to the lender albeit for the purchase of land, the construction of a facility, the purchase of equipment, the payment of salaries, etc. The property acquired with the money loaned or other value obtained normally accrues only to the borrower just as any liability which flows from the use of the money loaned is on the borrower's and not the lender's behalf. While the lender may monitor the borrower's efforts to assure the adherence to the purpose of the loan and the nature of the security involved, the work in question is done solely by and on behalf of the borrower. This is not at all related to the situation where work is performed by or on the Government's behalf under contract or otherwise.

Government loan guarantees are even further removed than a loan arrangement since in a loan guarantee the loan "agreement" is between the borrower and the lender. The Government's guarantee is in the form of default insurance to protect the lender. The Government's agreement to guarantee the loan is a fiscal arrangement similar to insurance and does not encompass, in itself, the performance of research, development or demonstration work even though that is the purpose for which the loan was made.

Similarly, in my opinion an agreement to guarantee the price of a product which contains the understanding that a new plant is to be built to make the product, is not an "arrangement" which includes research, development, or demonstration work. The party receiving the guarantee does all the demonstration type work on his own behalf. If the plant doesn't work, he takes all the losses. It it only after the standard products are available on market that the Government's fiscal obligation arises. Again the arrangement is fiscal, the purpose of which is to encourge independent demonstration work.

It is a rather unique requirement that a party loaning money, guaranteeing the repayment of a loan, or establish a price support level would end up owning a part of the assets of the party obtaining the loan or the benefit of the price support. If this would be the intent of Congress, it should be stated so explicitly since it has not been a usual consequence of any other similar government or private program.

In summary, it is my opinion that except for joint-Federal industry corporations the applicability of section 9 of the Federal Nonnuclear Research and Development Act to the Forms of Federal Assistance under section 7 of this Act is dependent upon the terminology of section 9. This section is applicable to contracts (i.e., contracts, agreements or other arrangements) which include the conduct of research, development or demonstration work. Section 9 of the Act is not applicable to Federal loans, price support or loan guarantees made for the purpose of encouraging other parties to construct demonstra-

Federal-industry corporation. While this fact in itself suggests a Congressional intent that section 9 is inapplicable to the other Forms of Federal Assistance in section 7, it may nevertheless be argued that section 9 by its own terms is applicable.

As noted above, section 9 specifies that unless waived by the Administrator the Government owns any inventions ". . . made or conceived in the course of or under any contract of the Administration. . . ." Subsection 9(m)(2) defines contract as follows: the term "contract" means any contract, grant agreement, understanding, or other arrangement, which includes research, development or demonstration work, and includes any assignment, substitution of parties, or subcontract executed or entered into thereunder.

The Conference Report emphasizes the breadth of the term "other arrangement" with the following statement: Subsection (m) is the definitional section. Subsection (m)(2), which defines contract as including "other arrangements," is intended to encompass any and all other arrangements. The reference to section 9 in section 7 is intended to make this clear.

While the Report refers to the reference of section 9 in section 7, the correct reference is subsection 7(b), and as noted above this deals only with Federal-industry corporations.

With this background, the relationship of Federal assistance under section 7 to the patent provisions of section 9 will be discussed. The most important legal consideration in determining the applicability of section 9 to section 7 is whether the Federal assistance forms concerned herein, i.e., loans, price support, or loan guarantees, are within the term "contract" as it is defined by subsection 9(m)(2). There are two elements to this definition of "contract." First, ERDA must have an agreement or other arrangement with a party and secondly, the agreement or arrangement must include "research, development, or demonstration work." Ostensibly, Federal assistance in the form of a loan, price support or a loan guarantee may be said to be an "arrangement" and most probably the assistance will be to a party for the purpose of aiding that party conduct a "demonstration" or "commercial demonstration" of an energy related process, system or facility. Therefore the issue is whether these forms of Federal assistance are within the meaning of the term "which include research, development or demonstration work" of subsection (m)(2).

As noted in the Conference Report, section 305 of the National Aeronautic and Space Act of 1958 (NAS Act) and the implementing NASA regulations were used as a model for section 9. The related provisions of section 305 which establishes its applicability is the first phrase of subsection (a) which provides "Whenever any invention is made in the *performance of any work* under any contract of the Administration * * *" (emphasis added) and the definition of the term "contract" in subsection 305(j)(2). This subsection states: The term "contract" means any actual or proposed contract, agreement, understanding or other arrangement, and includes any assignment, substitution of parties, or subcontract executed or entered into thereunder.

In drafting subsection 9(a) changes were made to subsection 305(a) of NAS Act to accommodate the language of section 152 of the Atomic Energy Act of 1954 which refers to "inventions * * * made or conceived in the course of or under any contract, subcontract or arrange-

Their position is supported by the General Counsel of ERDA, whose letter and memorandum on this issue are reprinted below.

U.S. ENERGY RESEARCH AND DEVELOPMENT ADMINISTRATION,
Washington, D.C., October 29, 1975.

Hon. MIKE MCCORMACK,
Chairman, Subcommittee on Energy Research, Development and Demonstration, Committee on Science and Technology, House of Representatives, Washington, D.C.

DEAR CHAIRMAN MCCORMACK: During testimony on the Geothermal Loan Guaranty Program on October 1 before your Subcommittee, Congressman Philip Hayes requested my legal opinion on the applicability of the patent provisions of the Federal Nonnuclear Research and Development Act of 1974 to Federal loan guarantees administered by ERDA. The attached Memorandum for the Record contains my analysis that section 9, the patent provisions of that Act, does not apply to loans, price support or loan guarantees.

Inasmuch as this request arose in the context of the Geothermal Loan Guarantee Program, I would add an additional thought to the attached memorandum. The Geothermal Energy Research, Development, and Demonstration Act of 1974 (Public Law 93–410), of which Geothermal Loan Guaranty Program is a part, contains no specific requirements as to patents. Therefore, the patent provisions utilized in carrying out the research, development and demonstration authorized by the Geothermal Act would depend on the patent policy of the particular Federal agencies conducting the program. Subsequent to ERDA's establishment, the research development and demonstration functions including the Geothermal Loan Guarantee Program as authorized by Public Law 93–410 have been transferred to ERDA.

The Conference Report (No. 93–1563) on the Federal Nonnuclear Research and Development Act specified that all of ERDA's nonnuclear contracts shall be governed by the patent policy of section 9 of that Act. Therefore, ERDA awarded research, development and demonstration contracts under the geothermal program will contain our standard patent provisions which implement the policy required by section 9. However, based on the attached legal opinion, these standard patent provisions will not be included in geothermal loan guarantee agreements but instead special patent provisions will be utilized as appropriate.

Sincerely,

LEONARD RAWICZ,
Deputy General Counsel.

Enclosure.

WASHINGTON, D.C., *October 29, 1975.*

Memorandum for the Record.

Application of Section 9 of the Federal Nonnuclear Research and Development Act of 1974 to Section 7, Forms of Federal Assistance.

Section 7(a) of the Federal Nonnuclear Research and Development Act of 1974 (hereinafter the Act) identifies the following Forms of Federal Assistance which the Administrator may utilize in carrying out the objectives of the Act.

The Administrator, furthermore, is expected to coordinate other applicable Federal assistance programs to avoid duplication and to assist in bringing the full benefits of the programs into effect in each situation.

Section 17(m)—Congressional Oversight

The new section 17(m) provides that before ERDA finally makes a binding commitment to guarantee, or a guarantee of, obligations to any borrower to build a commercial demonstration facility, ERDA must transmit to the House Science and Technology Committee and the Senate Interior and Insular Affairs Committee a complete report on the proposed guarantee and facility.

Each report should be quite detailed. For example, it should include a description of the proposed facility, the expected total costs and benefits, the expected impact, a finding that effective actions have been taken or will be taken to deal with these impacts, the views of the appropriate non-Federal governmental officials and others, a detailed discussion of the extent of Federal financial commitment to the borrower for the facility and to local governmental entities, the terms and conditions of the agreement, a copy of the final environmental impact statement, and other pertinent data. Where the action is taken over the objection of the Governor, the ERDA findings and reasons shall be included. Similarly, the report of the Justice Department and the Federal Trade Commission concerning the impact of such guarantee or commitment on competition and concentration in the production of energy shall be included, together with ERDA's written determination, if any, that despite any objection by such agency the demonstration should proceed from the standpoint of the national interest.

Such report on each proposed guarantee or commitment will lay before the Committees for 90 calendar days, exclusive of days either House adjourns for more than 3 days.

If the estimated cost of proposed commercial demonstration facility will exceed $350 million, ERDA shall not finalize the guarantee or commitment for that facility if either House passes a resolution of disapproval within the 90 day period. These commercial demonstration facilities will often be quite large, have significant environmental and social impacts, and may be controversial. Such projects should require some degree of Congressional scrutiny, short of actual authorization. Those exceeding $350 million in costs require an opportunity for either House to express its disapproval. On these sizeable projects, the Conferees are concerned that they not be built without this opportunity for careful scrutiny by Congress.

Section 17(q)—Transfer of Loan Guarantee Program

It is the expressed intent of the Conferees that the primary responsibility for the entire loan guarantee program remain with the ERDA until otherwise directed by the Congress. The Conferees do not intend to prevent the participation and cooperation of other Federal agencies with the ERDA through normal fund transfers provided that the ERDA maintain the final authority to control the program.

Section 17(r)—Patent Policy

Section 17(r) provides that "inventions made or conceived in the course of or under a guarantee authorized by this section shall be

to the specific technology are not available, arms-length agreements between other parties in the same industry could be taken into account, particularly where the technology is similar;

3. Licensors should not be required to accept terms contained in the licenses granted to government agencies which may reflect concessions extended by the licensor for public purposes or in exchange for participation in government programs;

4. The terms of license should enable the licensor to recover an equitable portion of its investment in the technology, including a reasonable return.

C O N C L U S I O N

Patent policy for loan guarantees or price supports under the Synthetic Fuels Commercialization Program should not be governed by Section 9 of the Nonnuclear Act but should be established by separate administrative regulation. If a mandatory licensing policy is adopted by ERDA, it should contain adequate safeguards to maintain confidentiality and to prevent licenses from being abused. The responsibility to offer licenses on reasonable and non-discriminatory terms should be stated broadly, and the actual terms of license should be left to private negotiations, subject to prescribed criteria for determining reasonableness.

Very truly yours,

Cyrus Nownejad

Cyrus S. Nownejad
Patent and Licensing Counsel

CSN:dbc