AEC OMNIBUS LEGISLATION—1969

HEARING

BEFORE THE

JOINT COMMITTEE ON ATOMIC ENERGY
CONGRESS OF THE UNITED STATES

NINETY-FIRST CONGRESS

FIRST SESSION

ON

AEC OMNIBUS LEGISLATION—1969

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AEC OMNIBUS LEGISLATION—1969

FRIDAY, SEPTEMBER 12, 1969

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

The Joint Committee met at 2 p.m., pursuant to call, in room H–407, the Capitol, Hon. Chet Holifield (chairman of the Joint Committee) presiding.

Present: Representatives Holifield, Price, Aspinall, Edmondson, Hosmer, and May.

Also present: Edward J. Bauser, executive director; William T. England, staff counsel, and Gerald G. Fain, professional staff member.

Chairman HOLIFIELD. The committee will be in order.

Thank you, gentlemen, for appearing on Friday afternoon. Our attendance may be a little bit light, but we thought we ought to get ahead on some of these minor bills.

This afternoon's hearing is for the purpose of receiving testimony from the Atomic Energy Commission concerning several bills pending before the committee to amend the Atomic Energy Act of 1954. These hearings were announced in our September 8, 1969, press release. (See app. 2, p. 43.) Very briefly, these bills are:

H.R. 12697, by which the compulsory patent licensing authority of the Atomic Energy Commission would be extended until September 1, 1974.

S. 1878, which is Senator Pastore's bill, to amend several sections of the Atomic Energy Act under which criminal penalties are authorized, and to add a new section to the act providing authority to the AEC to impose civil monetary penalties on persons violating certain sections of the Atomic Energy Act and rules, regulations, orders, or licenses issued thereunder.

H.R. 9644 and its companion bill, S. 1879, which are AEC bills recommending changes in the criminal penalty provisions of the Atomic Energy Act.

H.R. 9648 and is companion bill, S. 1882, which are the Commission bills proposing a new section to the act authorizing the imposition of civil penalties by the Commission on its licensees.

(The bills referred to follow:)

[H.R. 12697, 91st Cong., first sess.]

A BILL To amend section 153 of the Atomic Energy Act of 1954, as amended, to extend the compulsory patent licensing authority of the Atomic Energy Commission for five years, and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That subsection 153 h. of the Atomic Energy Act of 1954, as amended, is amended to read as follows:

"h. The provisions of this section shall apply to any patent the application for which shall have been filed before September 1, 1974."

[S. 1878, 91st Cong., 1st sess.]

A BILL To amend chapter 18 of the Atomic Energy Act of 1954, as amended, and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That section 222 of the Atomic Energy Act of 1954, as amended, is amended by striking out "imprisonment for not more than five years" and inserting in lieu thereof "imprisonment for not more than ten years".

SEC. 2. Section 223 of the Atomic Energy Act of 1954, as amended, is amended by adding the word "criminal" before the word "penalty".

SEC. 3. Sections 222, 224, 225, and 226 are each amended by striking out "(death or imprisonment for life (but the penalty of death or imprisonment for life may be imposed only upon recommendation of the jury)" and inserting in lieu thereof "imprisonment for life".

SEC. 4. The Atomic Energy Act of 1954, as amended, is amended by adding thereto the following new section:

"SEC. 234. CIVIL PENALTIES.—

"a. Any person who (1) violates (A) any licensing provision of sections 53, 57, 62, 63, 81, 82, 101, 103, 104, 107, or 109 or any rule, regulation or order issued thereunder, or any term, condition, or limitation of any license issued thereunder, or (B) any rule, regulation, or order issued under section 65 or subsections 161 b., i., or o., or (2) commits any violation for which a license may be revoked under section 186, shall be subject to a civil penalty of not to exceed $2,500 for each such violation, or not to exceed a total of $7,500 for violations occurring within any period of thirty consecutive days, as determined by the Commission. If such violation continues for a period of three consecutive days from the beginning date of infraction such violation shall constitute two separate offenses. Penalties prescribed by this section shall be in addition to any other specific or general criminal penalties provided by law and any other sanctions authorized by this Act, including revocation, suspension, or modification of license.

"b. No liability for a civil penalty imposed under subsection a. shall attach unless a written notice shall have been issued by the Commission (i) setting forth the date, facts, and nature of the act or omission with which the person is charged, (ii) specifically identifying the particular provision or provisions of the section, rule, regulation, order, or license involved in the infraction, and (iii) advising of the penalty which the Commission proposes to impose and its amount. Such written notice shall be delivered by the Commission to the person charged by registered or certified mail sent to the last known address of such person. The person so notified shall be granted an opportunity to show in writing, within such reasonable period as the Commission shall by regulation prescribe, why such penalty should not be imposed. The notice shall also advise the person charged that upon failure to pay the amount stated, or an amount subsequently determined by the Commission to be appropriate, it will be subject to collection in accordance with subsection c. below.

"c The amount of such civil penalty, when so determined, may be deducted from any sums owing from the United States to the person charged. The penalties provided for in this section shall be payable into the Treasury of the United States, and may be collected by civil action instituted within one year from the date of notification. On the request of the Commission, it shall be the duty of the various United States attorneys, under the direction of the Attorney General of the United States, to prosecute for the recovery of any civil penalties under this section."

[H.R. 9644, 91st Cong., 1st sess.]
(S. 1879 identical)

A BILL To amend the Atomic Energy Act of 1954, as amended, to provide that life imprisonment shall be the maximum criminal penalty for certain offenses, to increase the criminal penalties for unauthorized diversion of special nuclear material and related offenses, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Atomic Energy Act of 1954, as amended, is hereby further amended as follows:

SEC. 2. Section 222 is amended by striking "five" and "by death or imprisonment for life (but the penalty of death or imprisonment for life may be imposed only upon recommendation of the jury), or by a fine of not more than $20,000 or by imprisonment for not more than twenty years, or both", and inserting in lieu thereof "ten" and "by imprisonment for any term of years or for life, or by a fine of not more than $20,000, or both", respectively.

SEC. 3. Subsection a. of Section 224 is amended by striking "by death or imprisonment for life (but the penalty of death or imprisonment for life may be imposed only upon recommendation of the jury), or by a fine of not more than $20,000 or by imprisonment for not more than twenty years, or both", and inserting in lieu thereof "by imprisonment for any term of years or for life, or by a fine of not more than $20,000 or both".

SEC. 4. Section 225 is amended by striking "by death or imprisonment for life (but the penalty of death or imprisonment for life may be imposed only upon recommendation of the jury), or by a fine of not more than $20,000 or by imprisonment for not more than twenty years, or both", and inserting in lieu thereof "by imprisonment for any term of years or for life, or by a fine of not more than $20,000, or both".

SEC. 5. Section 226 is amended by striking "by death or imprisonment for life (but the penalty of death or imprisonment for life may be imposed only upon recommendation of the jury), or by a fine of not more than $20,000 or by imprisonment for not more than twenty years, or both", and inserting in lieu thereof "by imprisonment for any term of years or for life, or by a fine of not more than $20,000, or both".

[H.R. 9648, 91st Cong., 1st sess.]

(S. 1882 identical)

A BILL To amend chapter 18 of the Atomic Energy Act of 1954, as amended, and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, The Atomic Energy Act of 1954, as amended, is amended by adding thereto the following new section:

"SEC. 234. CIVIL MONETARY PENALTIES FOR VIOLATIONS OF LICENSING REQUIREMENTS.—

"a. Any person licensed pursuant to sections 53, 62, 81, and 101 of this Act who violates any provision of the regulations, orders, or licenses issued under such sections shall be subject to a civil penalty, to be imposed by the Commission, not to exceed $5,000 for each such violation. In the case of continuing violations the civil penalty shall not exceed $10,000 for violations occurring within any period of thirty consecutive days. The Commission shall have the power to compromise, mitigate or remit such penalties.

"b. Whenever the Commission has reason to believe that a person has become subject to the imposition of a civil penalty under the provisions of this section, it shall notify such person of its intention to impose a civil penalty and of the proposed amount thereof, and give him a reasonable opportunity to show in writing either that he has not committed the violation charged, or that such violation took place under mitigating circumstances. The notice shall also advise such person that upon failure to pay the civil penalty subsequently determined by the Commission, if any, the penalty may be collected by civil action.

"c. On the request of the Commission, the Attorney General is authorized to institute a civil action to collect a penalty imposed pursuant to this section. The Attorney General shall have the exclusive power to compromise, mitigate, or remit such civil penalties as are referred to him for collection."

SEC. 2. Subsection 221 c. of the Atomic Energy Act of 1954, as amended, is amended to read as follows: "No action shall be brought against any individual or person for any violation under this Act unless and until the Attorney General of the United States has advised the Commission with respect to such action and no such action shall be commenced except by the Attorney General of the United States: *Provided, however,* That no action shall be brought under sections 222, 223, 224, 225, or 226 except by the express direction of the Attorney General: *And provided further,* That nothing in this subsection shall be construed as applying to administrative action taken by the Commission."

Chairman HOLIFIELD. The committee has sought the views of the Department of Justice on the various bills under consideration. We have not received the Department's comments as yet, but we expect that they will be available in the very near future. I understand, however, that the Attorney General assisted in the preparation of the AEC's bills now before us.

(The Department's comments follow:)

OFFICE OF THE DEPUTY ATTORNEY GENERAL,
Washington, D.C., October 6, 1969.

Hon. CHET HOLIFIELD,
Chairman, Joint Committee on Atomic Energy,
House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: This is in response to your request for the views of the Department of Justice on H.R. 9644, H.R. 9648, S. 1878, S. 1879 and S. 1882 which would amend chapter 18 of the Atomic Energy Act of 1954, as amended, with respect to civil and criminal penalties.

H.R. 9644, S. 1878 and S. 1879 propose changes in the criminal penalties of four sections of the Atomic Energy Act (Sections 222 and 224 through 226) to provide for a maximum punishment of life imprisonment. Presently, these statutes provide for a maximum penalty of death or imprisonment for life; however, neither may be imposed except upon the recommendation of a jury.

In view of the decision of the Supreme Court in *United States* v. *Jackson*, 390 U.S. 570 (1968), it seems fairly certain that the provisions for death and imprisonment for life in the Atomic Energy Act are unconstitutional. This leaves as the maximum punishment for violations of these sections of the Act, including transmitting Restricted Data to a foreign power, a fine of $20,000 or twenty years imprisonment, or both.

Section 794 of Title 18, United States Code, prohibits the gathering or delivering of defense information to aid a foreign government and carries a maximum penalty of death. It is recognized that this statute could be invoked in most cases involving the unauthorized communication of Restricted Data and that, even during the hiatus which now exists, a conviction for such a serious crime would be subject to an adequate penalty.

We note that unlike S. 1879 and H.R. 9644, S. 1878 would limit the imprisonment which may be imposed to either life or twenty years. We see no logical basis for this and believe the courts should have more flexibility in the sentencing by permitting punishment for any term of years.

H.R. 9648, S. 1878 and S. 1882 propose to add a new Section 234 to the Atomic Energy Act to provide for civil monetary penalties for violations of licensing requirements.

H.R. 9648 and S. 1882 would authorize the Atomic Energy Commission to levy civil monetary penalties not to exceed $5,000 for each single violation and not to exceed $10,000 for continuing violations by any person licensed pursuant to Section 53, 62, 81 or 101 of the Atomic Energy Act, of the regulations, orders or conditions of licenses issued thereunder. The proposed legislation would clarify Section 221 of the Act by providing that this section does not require the approval of the Attorney General prior to the initiation of administrative action by the Commission. Under this proposal, if the licensee refused to pay, the matter could be referred to the Attorney General who would be authorized to institute a civil action to collect any civil penalty imposed pursuant to this section. These bills confer on the Commission the power of compromise, mitigation and remission of penalties and confer the same power exclusively on the Attorney General with respect to such civil penalties as are referred to him for collection.

S. 1878 would authorize the Commission to levy civil monetary penalties not to exceed $2,500 for each such violation and not to exceed $7,500 for violations occurring within any period of thirty consecutive days, as determined by the Commission, by a person who (1) violates (a) any licensing provision of sections 53, 57, 62, 63, 81, 82, 101, 103, 104, 107, or 109 of the Act or any rule, regulation, or order issued thereunder, or any term, condition, or limitation of any license issued thereunder, or (b) any rule, regulation, or order issued under section 65 or subsections 161 b., i., or o., of the Act, or (2) commits any violation for which a license may be revoked under section 186 of the Act.

This bill provides that if such violation continues for a priod of three consecutive days, such violation shall constitute two separate offenses.

The bill further provides that the penalties prescribed by this section "shall be in addition to any other specific or general criminal penalties provided by law and any other sanctions authorized by this Act, including revocation, suspension, or modification of license."

The bill details the administrative procedures applicable to Commission action and authorizes the deduction of the amount of the civil penalty from any sums owing from the United States to the person charged.

The bill authorizes the collection of the civil penalty by a civil action which must be instituted within one year from the "date of notification."

The bill imposes a duty on the various United States Attorneys to prosecute for the recovery of any civil penalties imposed under this section.

S. 1878 is not favored because we believe it important that the legislative history of the proposed legislation emphasize that it is remedial in nature and not punitive and that the legislation contain no language which would suggest a punitive penalty so that the imposition of a civil penalty under this section would in no way create a former jeopardy question which might bar subsequent criminal prosecution in an appropriate case. See *Helvering* v. *Mitchell*, 303 U.S. 391, 397–398 (1938); *United States* v. *La Franca*, 282 U.S. 568, 575 (1931). To this end we would delete from this bill the provision that the civil penalties prescribed by the section "shall be in addition to any other specific or general criminal penalties provided by law".

We feel it advisable to provide that the power to compromise, mitigate or remit penalties shall be exclusive with the Attorney General with respect to such Civil penalties as are referred to him for collection. And because of questions as to the finalty of the determination, it is considered preferable not to provide that civil penalties may be deducted from any sum owing from the United States to the person charged.

We also believe that a five-year limitation period running from the time of the violation is preferable to a one-year limitation period running from the date of the notification. Since the five-year statute of limitations under 28 U.S.C. section 2462 is applicable to all civil penalties except where the governing statute provides otherwise, it appears preferable to have the proposed legislation silent on this point.

We also do not favor imposing a duty on the various United States attorneys to prosecute all requests for the collection of civil penalties. Compare section 1007(b), Federal Aviation Act of 1958 (49 U.S.C. section 1487(b)), which grants a discretionary authorization to the various United States Attorneys in similar circumstances.

Except for our objections to S. 1878, the Department of Justice has no objection to the enactment of the legislation to amend the provisions of the Atomic Energy Act. However, the National Commission on Reform of Federal Criminal Laws is doing an exhaustive study under its mandate "to make recommendations for revision and recodification of the criminal laws of the United States, including . . . changes in the penalty structure . . .". The Committee may wish to defer final action on this legislation to await the Report of that Commission.

The Bureau of the Budget has advised that there is no objection to the submission of this report from the standpoint of the Administration's program.

Sincerely,

RICHARD G. KLEINDIENST,
Deputy Attorney General.

Chairman HOLIFIELD. For ease of reference, the various bills under consideration are being referred to as the 1969 omnibus legislation. It is expected that the committee will report out an omnibus bill which will incorporate into a single bill the desired portions of these measures. We shall hold the record open until September 26 to receive statements or other information submitted for inclusion in the record. (See app. 1, p. 41, and app. 7, p. 94.)

I believe it would be helpful to the record to include the explanatory floor remarks which Senator Pastore made when he originally introduced his bill in the 90th Congress.[1]

[From the CONGRESSIONAL RECORD, of Aug. 1, 1968 (daily edition), pp. S9932–S9933]

AMENDMENTS TO ENFORCEMENT PROVISIONS OF THE ATOMIC ENERGY ACT OF 1954

Mr. PASTORE. Mr. President, today I introduced a bill to amend various sections of Chapter 18 of the Atomic Energy Act of 1954, as amended, the enforcement chapter of that Act. I believe it would be helpful if I briefly explained the principal purposes of the proposed legislation and why these amendments are being offered.

One major purpose of the bill is to correct shortcomings in Chapter 18 brought about by the U.S. Supreme Court's recent decision in *United States v. Jackson*,

[1] S. 3958, introduced August 1, 1968; reintroduced April 18, 1969 as S. 1878.

36 L.W. 4277 (April 8, 1968). It was there held that the death penalty provision of the Federal Kidnapping Act is unconstitutional because in permitting imposition of the death penalty only upon defendents who assert their right to be tried by a jury, it discourages assertion of, and thereby imposes an impermissible burden upon the exercise of, a constitutional right.

This decision would appear to hold significant implications for, and raise very substantial questions about, somewhat similar provisions in sections 222, 224 a., 225 and 226 of the Atomic Energy Act of 1954. These sections provide that where there is a violation thereof with intent to injure the United States or to secure an advantage to a foreign nation, there may be imposed punishment by a fine of not more than $20,000 or imprisonment for not more than 20 years, or both, or, upon the recommendation of a jury, life imprisonment or death.

These penalty provisions of the Atomic Energy Act and the death penalty provision of the Federal Kidnapping Act operate in the same manner; therefore, the effect of the *Jackson* decision on the former would appear to be similar to its effect on the latter. Indeed, in certain respects the decision has more far-reaching effects on the Atomic Energy Act inasmuch as both the life imprisonment penalty as well as the death penalty provided for therein are contingent upon a jury recommendation, whereas only the death penalty provision of the Federal Kidnapping Act was affected by the *Jackson* decision.

The bill which I have introduced would retain the life imprisonment penalty in the affected sections, but delete the capital punishment penalty and the requirement for a specific recommendation by the jury before the maximum penalty prescribed may be imposed upon an offender. As my colleagues are aware, the question of whether capital punishment for Federal crimes should be abolished by general legislation (S.1760) is one that is now under active consideration within the Congress. However, I do not believe that necessary corrections to sections of the Atomic Energy Act dealing with penalties for offenses committed with intent to injure the United States or with intent to secure an advantage to a foreign nation should await enactment of this general legislation. Nor do I believe the legislative branch should continue to await the recommendations of the executive branch as to whether, and, if so, what amendments are necessary to effect corrections to sections of the Atomic Energy Act dealing, among other things, with the theft by foreign agents of highly sensitive atomic information. Therefore, I have introduced the minimum amendments required to give effect to the intent of Congress presently reflected in the sections of the Atomic Energy Act thrown into serious question by the *Jackson* decision, but at the same time striking therefrom the provision for capital punishment which has never been—and in all probability never would be—employed.

A second principal purpose of my bill is to amend section 222 of the Atomic Energy Act of 1954 to increase the criminal penalties which could be imposed for unauthorized diversion of special nuclear material, and for certain related offenses. This material is the principal ingredient in nuclear and thermonuclear weapons. However, if a willful diversion of this material were committed by a person in this country under circumstances where the Government was unable to prove that the person charged specifically intended to injure the United States or to secure an advantage to any foreign nation, the maximum penalty which could be imposed under section 222 would be a fine of $10,000 and imprisonment for 5 years. Thus, a thief, a terrorist, an insurrectionist, or a criminal group might commit such a diversion and, in the absence of proof of the requisite intent, would be subject to a maximum penalty under section 222 of imprisonment for 5 years and a $10,000 fine. For example, if the diversion were made for financially rewarding criminal purposes rather than out of political motivation, or if the unlawful sale were to the agent of an undisclosed principal and the unidentified principal was a foreign nation, the specific intent to injure the United States or gain an advantage to a foreign power might well be lacking. Section 1 of my bill would amend section 222 to increase from five to ten years the maximum imprisonment for such willful violations of the section. No increase in the maximum fine appears necessary.

An Ad Hoc Advisory Panel on Safeguarding Special Nuclear Material appointed by the Atomic Energy Commission in 1967 pointed up the weakness of the Act in this regard and recommended that it be amended to increase the penalties for unauthorized diversion of such material. The Panel noted that the maximum penalties presently provided for ". . . may not be a sufficient deterrent to illicit transactions involving materials valued in excess of millions of dollars. . . ." and observed, "The threat of detection and more severe criminal penalties should help deter organizations and individuals from attempting to divert materials to

unauthorized uses." Moreover, increased maximum penalties for unauthorized diversion of these materials would make them more nearly comparable to those for crimes of similar gravity.

A third principal purpose of this proposed legislation is to confer on the Atomic Energy Commission authority to impose civil penalties in addition to the Commission's present authority to modify, suspend, or revoke a license for violations of AEC health and safety regulatory requirements. Specifically, the bill would authorize the AEC to impose civil fines of up to $2,500 for individual infractions, and not to exceed $7,500 for two or more violations occurring within a 30-day period of certain sections of the Atomic Energy Act and rules, regulations, orders, or licenses issued thereunder. I understand that similar authority to impose civil penalties is possessed by the Federal Communications Commission, the Federal Aviation Agency, the Department of Agriculture, and the Interstate Commerce Commission.

It is not my intent in introducing this legislation to in any way suggest that serious violations of the Act or of rules, regulations, orders or licenses issued thereunder are to be penalized by a mere fine. I particularly do not mean to suggest this where the violation is one involving health and safety matters. I do believe, however, that in some instances the revocation of a license or suspension thereof may be too harsh a penalty under the circumstances. Moreover, in certain cases a suspension may penalize the licensee's employees through loss of income without having any significant impact on the licensee itself. At the present time, the AEC in such cases essentially must choose between issuing a revocation or suspension order, on the one hand, or, on the other, issuing a cease and desist order which is little more than a direction to a licensee to refrain from doing whatever it was that the Commission found objectionable. Injunctions may also be obtained in appropriate cases, but here again the enforcement action may be out of all proportion to the infraction. For these reasons the imposition of a fine may be the more appropriate enforcement action in some cases.

Conferring on the AEC authority to impose civil fines, while at the same time retaining the authority to impose more severe penalties either in lieu of or in addition to a civil fine, should afford the Commission ample flexibility to deal with infractions of varying severity. I believe the AEC should have such authority. I also believe the Commission wants such authority. When queried about the matter in 1967 the Commission indicated that it was then preparing proposed legislation along these general lines for submission to the Congress. Apparently due to the inevitable delays involved in the administrative review process no such legislative proposal has as yet been cleared for submission to the Congress by the executive branch. For this reason, and in view of the limited time remaining for congressional consideration of such legislation during this session of Congress, I have included language in section 4 of my bill designed to accomplish the intended purpose.

Chairman HOLIFIELD. The committee will hear the testimony of Mr. Joseph Hennessey, General Counsel of the Atomic Energy Commission, on these matters.

STATEMENT OF JOSEPH F. HENNESSEY, GENERAL COUNSEL, ACCOMPANIED BY R. E. HOLLINGSWORTH, GENERAL MANAGER; ROLAND ANDERSON, OFFICE OF THE GENERAL COUNSEL; FRANKLIN N. PARKS, OFFICE OF THE GENERAL COUNSEL; LAWRENCE D. LOW, DIRECTOR, DIVISION OF COMPLIANCE; AND BRIG. GEN. DELMAR L. CROWSON, DIRECTOR, OFFICE OF SAFEGUARDS AND MATERIALS MANAGEMENT, ATOMIC ENERGY COMMISSION

Mr. HENNESSEY. Mr. Chairman and members of the committee: I am pleased to have this opportunity to discuss with you today the proposals embodied in H.R. 12697, S. 1879, H.R. 9644, S. 1882, H.R. 9648, and S. 1878, bills which would amend the Atomic Energy Act of 1954, as amended.

EXTENSION OF COMPULSORY PATENT LICENSING AUTHORITY

The Commission recommended enactment of the proposal embodied in H.R. 12697 in its letter of June 12, 1969. (See p. 10.)

The bill would amend section 153 h. of the Atomic Energy Act, which section permits the Atomic Energy Commission, after giving the patent owner an opportunity for a hearing, to declare any patent to be affected with the public interest if (1) the application for the patent was filed before September 1, 1969; (2) the invention covered by the patent is of primary importance in the production or utilization of special nuclear material or atomic energy; and (3) the licensing of such invention is of primary importance to effectuate the policies and purposes of the Atomic Energy Act.

After such a declaration has been made, the Commission may use the invention in performing any of its powers under the act. It may also issue a nonexclusive license to a particular applicant if it finds that his proposed use is of primary importance to the conduct of an activity by such person authorized under the act.

In either event, the owner of the patent is entitled to a reasonable royalty fee for any use of his invention licensed pursuant to this section.

Unless subsection h. of section 153 is amended, patents applied for on or after September 1 of this year will not be subject to the provisions of that section. The bill would extend operation of the section for another 5 years, to patent applications filed before September 1, 1974.

Chairman HOLIFIELD. What position are we in relative to this period of time between September 1 and such time as this bill can become law?

Mr. HENNESSEY. With respect to any patent applications that were filed before September 1, the provisions of the act continue to be operative and AEC would continue to have the authority to compel licensing of the patents issued on those applications.

Where an application has been filed after September 1, and assuming that the Congress proceeds to enact the bill as we proposed it, the provisions of the bill would cover the applications filed during the interim period between September 1 and the effective date of the bill so that there would be no gap. There would be no patents issued on applications made during this period that would not be subject to compulsory licensing provisions.

Chairman HOLIFIELD. In other words, if we proceed with our legislation and if it has within it the date of September 1, 1974, it will cover any patent applications filed during this hiatus period?

Mr. HENNESSEY. That is right. This was, of course, the case with the original provision of the bill. It went back and picked up applications that had been filed prior to the effective date of the act.

Chairman HOLIFIELD. All right.

You may proceed.

Mr. HENNESSEY. As we mentioned in the 1964 hearings on this section, the ability of the Government to use a patented invention without interference but on payment of just compensation derives from section 1498 of Title 28 of the United States Code. Hence the Government's use does not depend upon extension of section 153.

The applicability of section 153 is with respect to commercial non-Government uses, where injunctive relief would be one of several

remedies available to the patent owner absent the authority of the Commission to compel licensing of the invention.

The patent owner would, absent section 153, be able to prevent use of the invention by others despite the fact that such use would clearly be in the public interest and would enhance the public welfare.

In the opinion of the Commission, the reasons compelling the Congress to enact this section in 1954 and to extend it in 1959 and 1964 are still applicable with at least equal, and in some cases greater, force. These reasons are in summary as follows:

(1) The necessity of patent incentives to encourage the development of peacetime uses of atomic energy, while simultaneously keeping important inventions in this field within the reach of others who wish to use them, thereby allowing further development of the inventions through competitive enterprise; and

(2) Preventing the use of exclusionary patent rights as a means of enlarging the preferred position of a necessarily limited number of companies in the field, many of whom have developed their experience substantially at public expense.

It is the AEC's view that the need for the reserve power of section 153 may, in several respects, be more necessary now than it was in the past. Many new areas of atomic energy technology have just begun to emerge, and their very newness produces a narrow industrial base and the consequent need for the reserve power of section 153 as an aid to their development.

As examples of such new fields, we note fast breeder reactors, peaceful uses of nuclear explosives (Plowshare), controlled thermonuclear devices, medical uses of atomic energy, and space nuclear systems.

Many patents are being issued to private concerns and foreign governments in these areas, and there is an increased need for the section 153 safeguards against injunctive action against private industry, such as in the case where a costly installation inadvertently infringes a patent of the type described in section 153 (a) and (e).

The committee's attention is invited to another reason for the increased need for section 153; namely, the increasing number and percentage of patents issuing in the total atomic energy field and not owned by the U.S. Government.

Using our records of referrals from the Patent Office under section 151(d), we found that in the calendar year 1955, of the patent applications referred to AEC as pertaining to atomic energy, 51 percent were filed by the Commission. In fiscal year 1964, the figure was 23 percent filed by the AEC, and in fiscal 1969 it dropped to 13 percent.

It is therefore apparent that despite the large portfolio of AEC patents it is becoming increasingly likely for private parties and foreign governments to acquire patents on inventions of primary importance in atomic energy development.

The Commission again points out the very limited authority conferred by section 153. In addition to the required findings regarding primary importance, the Commission must find that the applicant cannot otherwise obtain a patent license from the patent owner on terms which the Commission deems reasonable. The protection of a full hearing is provided.

The Commission has to date not used the reserve power conferred by section 153. However, the first application under section 153 by a

private party for the compulsory licensing of a patent was filed on August 27, 1969.

We believe that the existence of the power has had a salutary effect in inducing patent holders to negotiate licenses under fair terms and has thereby fostered competition and development in the fields covered by the respective patents.

It is therefore our position that the section is of substantial positive advantage, presents no significant disadvantages, and should be extended for a further 5-year period as provided in the bill.

This concludes my statement on H.R. 12697.

I would be happy to stop here and answer any questions, or if the committee wishes, to continue my statement on the other measures.

Chairman HOLIFIELD. At this time, before the questions, I will put in my letter of May 6 to Dr. Seaborg and his answer of June 12 to that letter on the subject matter of the legislation before us.

(The documents referred to follow:)

JOINT COMMITTEE ON ATOMIC ENERGY,
CONGRESS OF THE UNITED STATES,
May 6, 1969.

Hon. GLENN T. SEABORG,
Chairman, U.S. Atomic Energy Commission,
Washington, D.C.

DEAR DR. SEABORG: As you are no doubt aware, the provisions of Section 153 of the Atomic Energy Act of 1954, as amended, are due to expire on September 1, 1969. In view of the past history of obtaining five year extensions of the expiration of these patent provisions, the Joint Committee would appreciate your advice as to whether the Commission intends to submit another legislative proposal in this connection. If such proposal is contemplated, an early submission thereof will facilitate an orderly consideration of it along with the considerable amount of legislation now pending before the Joint Committee.

With warm personal regards, I am

Sincerely yours,

CHET HOLIFIELD, *Chairman.*

U.S. ATOMIC ENERGY COMMISSION,
Washington, D.C., June 12, 1969.

Hon. CHET HOLIFIELD,
Chairman, Joint Committee on Atomic Energy,
Congress of the United States

DEAR MR. HOLIFIELD: As mentioned in your letter of May 6, 1969, the Commission's authority regarding compulsory licensing of patents under Section 153 of the Atomic Energy Act of 1954, as amended, is due to expire on September 1, 1969. The section was initially limited to patents, the applications for which were filed before September 1, 1959. In 1959 this authority was extended to September 1, 1964, and in 1964 it was further extended to September 1, 1969. The Commission is submitting to the Congress a proposed amendment that would extend this authority to those patents, the applications for which were filed before Setember 1, 1974. Enclosed are copies of our letters to the President of the Senate and the Speaker of the House of Representatives.[1]

As amended, Section 153 would authorize the Commission under narrowly limited conditions to grant a nonexclusive license to certain patents of "primary importance" in the nuclear field. In these circumstances, the Commission would also be granted a license to use the invention. The patent owner would be entitled to a "reasonable royalty."

Although the Commission has not exercised this power to date, we believe the reasons which justified the extensions of Section 153 in 1959 and 1964 are still valid. Although the industrial base is broader than 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, important new developments in atomic

[1] See app. 3, p. 44.

energy are only now emerging from the research phase. The very existence of the authority may have a salutary effect.

We shall be pleased to provide any additional information you may desire on the subject.

The Bureau of the Budget has advised that enactment of the proposed legislation would be in accord with the Administration's program.

Cordially,

GLENN T. SEABORG,
Chairman.

Chairman HOLIFIELD. When the compulsory patent licensing provision was enacted, it was considered to be temporary to cover the transitional period until atomic energy acquired a broader industrial base.

In your opinion, is the industry still in its formative stage, or has it achieved a sufficiently broad industrial base to permit the expiration of this unusual authority except for patent applications filed before September 1, 1969?

I think you have answered that in your statement.

Mr. HENNESSEY. I will be glad to develop that further if the Chairman wishes.

Chairman HOLIFIELD. All right.

Mr. HENNESSEY. It is true, I think, that, in some aspects of the atomic energy manufacturing industry there has been developing a broadening base of industrial competition, but in other areas, as indicated by the recent report of Arthur D. Little Co., there continues to be a very narrow field of competition.

I think perhaps more important, looking toward the future and the important programs that are only now beginning to develop, notably the fast breeder reactor program, that we can have no assurance, certainly at this time, of any very broad base of competition.

I think the same thing is probably true of the Plowshare program at the present stage.

Unlike the situation in 1954 and 1959, there is a broader development of private industrial positions and the filing of a very large number of private patents which would indicate the necessity for retaining the compulsory licensing provision to insure that an adequate competitive situation will endure.

Chairman HOLIFIELD. Will you give us some of the details surrounding the recent application by the Picker Corp. for a compulsory patent licensing proceeding?

Mr. HENNESSEY. I believe Mr. Anderson has the facts on that application.

Chairman HOLIFIELD. Mr. Anderson, will you give us some information on that?

Mr. ANDERSON. The application for compulsory licensing has two requests: The first contention is that the specific release accorded the inventor by the AEC in 1958–59 period was without consideration and therefore requests the Government to cancel the release and accord the applicant a free license in accordance with inventions owned by the Government.

The second part of the petition pertains to section 153, which is, the compulsory licensing section and specifically requests that the Commission undertake findings to determine if that invention should be compulsory licensed.

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-

ment of Government Patent Policy was issued with respect to an attempt to get an overall uniform policy. Today, I would presume that if we were releasing it under the terms and conditions now present there would be requirements, possibly, for according licenses to third parties on a contractual basis, as we are doing in connection with certain of our reactor development program background patents, rather than rely on the compulsory licensing section.

Mr. HENNESSEY. I think as the chairman suggested it is, of course, true that due to the existence of the provisions of the act he is on notice of the compulsory licensing sections of the act.

Chairman HOLIFIELD. Did this so-called uniform patent application in Government departments in any way weaken the basic Atomic Energy Act?

Mr. ANDERSON. No, sir. It was specifically provided for in that policy statement, that that statement was subject to any existing statutory requirements. It was specifically recognized in that policy statement that if there were statutes the statutes prevailed.

Chairman HOLIFIELD. One final question.

In 1964, it was pointed out that one of the reasons for extending the compulsory patent licensing authority was that more patents were being issued to private parties.

Your statement—page 4—points out the continuation of that trend.

You also allude to the importance of such authority relative to breeder reactor technology on page 3.

Is it not reasonable to assume a continuation of this trend toward private patent holders, say, for the next 25 years, and won't it be at least 10 years before breeders are introduced?

Mr. HENNESSEY. I think in response to the first part of the question it is quite clear that as industrial development independent of Government financial assistance becomes more normal, more the normal way of life, that there will be a continually increasing number of private patents in the field.

On the other hand, with respect to the fast breeder reactor program, for instance, we anticipate a continuing very large financial contribution to the development of the fast breeder reactor, and the same basis, it seems to me, exists here as did in the initial enactment of this measure, that where such large sums of Government money have been devoted to the development that there is a sound and reasonable basis for the requirement that the public generally have access to the patents that result from that combined work by Government and industry.

Chairman HOLIFIELD. What is the logic behind extending this for 5 years rather than a longer period in view of your statement as to the future?

Mr. HENNESSEY. In the first place, we have simply followed the existing pattern of 5-year extensions which has gone on now for 20 years. But the reason for 5 years is that I suppose 5 years is a logical period for the reexamination of the situation. It has changed, as we noted it has changed quite a bit in the last 5 years, so that it does afford a periodic opportunity to look at the industry, what the private patent situation is, to what extent the Government is continuing to make a contribution, and I suppose most importantly what policies are being used by industry in licensing other competitive elements of the industry.

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:)

U.S. ATOMIC ENERGY COMMISSION,
Washington, D.C., October 9, 1969.

Hon. CHET HOLIFIELD,
Chairman, Joint Committee on Atomic Energy,
Congress of the United States.

DEAR MR. HOLIFIELD: At the hearing before the Joint Committee on Atomic Energy September 12, 1969 on the 1969 Omnibus legislation you requested my opinion as to whether enactment of H.R. 12697 after, rather than before September 1, 1969, would affect Section 153's applicability to patent applications filed in the interim between September 1 and the enactment of H.R. 12697.

Section 153(h) of the Atomic Energy Act of 1954, as amended, presently provides that the provisions of Section 153, the so-called compulsory patent licensing section of the Act, "shall apply to any patent the application for which shall have been filed before September 1, 1969." H.R. 12697, now before the Congress, would extend the applicability of Section 153 for five additional years by substituting "September 1, 1974" for September 1, 1969.

When amended by H.R. 12697, Section 153(h) would read: "The provisions of this section [section 153] shall apply to any patent the application for which shall have been filed before September 1, 1974." This language is clear and unambiguous; there is no exception for patents for which applications may be filed between September 1, 1969 and the enactment of H.R. 12697. In my opinion, if H.R. 12697 is adopted after September 1, it will effectively cover patent applications filed during the interim. *DeFerranti* v. *Lindmark*, 30 App. D.C. 417, 1908 C.D. 353; *In Re Howard*, 122 U.S. Patent Quarterly, p. 21 (1957). Since practical considerations prevent the issuance of patents before about 6 months, and a two to three year period usually elapses between filing of an application and issuance of a patent, it is unlikely that a patent would issue, with respect to a patent application filed subsequent to September 1, 1969, prior to enactment of H.R. 12697 unless that enactment is long delayed. If such a situation were to occur, it is conceivable that a question could be raised as to the effect of the legislation on patent rights that had become vested prior to its enactment. It should be noted that this same situation was present with the enactment of the Atomic Energy Act of 1946 which extended compulsory licensing provisions to patents previously issued. In my view, it is clear that, in this instance as well as in the enactment of the basic Acts, the Congress would be properly exercising its constitutional powers to legislate with respect to patents, and to the extent that the property rights of an inventor may be entitled to protection under Constitutional safeguards, such protection is adequately afforded by the due process and reasonable royalty provisions of Section 153.

Sincerely yours,

JOSEPH F. HENNESSEY,
General Counsel.

Chairman HOLIFIELD. Mr. Hosmer.

Representtive HOSMER. No questions, Mr. Chairman.

Chairman HOLIFIELD. Mr. Aspinall?

Mr. ASPINALL. I have no questions.

Chairman HOLIFIELD. Mrs. May?

Representative MAY. I have no questions.

Mr. ASPINALL. Mr. Chairman, I have one question after glancing over the statement by Mr. Hennessey.

Have you gone into this question where they recommend that the maximum penalty be life imprisonment?

Chairman HOLIFIELD. We are going into that next. The patent item is the first item in the omnibus bill.[1] Now we are going into the criminal penalty provisions under the act.

Will you proceed on that, Mr. Hennessey? And that refers to what bills?

[1] Additional information concerning proposed extension of the compulsory patent licensing provision is set forth in AEC answers to written JCAE questions, p. 36.

CRIMINAL PENALTIES

Mr. HENNESSEY. S. 1879 and H.R. 9644. (See p. 2.)

These bills would amend the Atomic Energy Act of 1954 to provide that life imprisonment shall be the maximum criminal penalty for certain offenses prescribed by the act, and to increase from 5 years to 10 years the maximum criminal penalty for unauthorized diversion of special nuclear material and related offenses when the offense is committed without the intent to injure the United States or to secure an advantage to any foreign nation.

Section 222 of the Atomic Energy Act provides criminal sanctions for violations of sections 57, 92, and 101 of the act, and for unlawful interference with the Commission's recapture of special nuclear material or its entry into any plant or facility under the authority granted by section 108 of the act.

Section 57 provides that unless authorized by a general or specific license issued by the Commission, no person may transfer or receive, own, possess, or import or export any special nuclear material.

Under section 92, it is unlawful, without authority, to possess, manufacture, transfer or receive, import or export any atomic weapon.

Section 101 forbids the transfer, receipt, manufacture, use, import or export of a utilization or production facility except under a license issued by the Commission.

Section 108 authorizes the Commission, when a state of war or national emergency exists, to order the recapture of special nuclear material or the operation of any licensed facility, and to enter any plant or facility to carry out those orders.

Under the terms of section 222, in the absence of an intent to injure the United States or to secure an advantage to any foreign nation, the maximum penalty for a violation of the sections mentioned above is imprisonment for 5 years and a fine of $10,000. If such an intent exists, the maximum stated penalty is death or imprisonment for life (if recommended by a jury), or a fine of not more than $20,000, or imprisonment for not more than 20 years, or both.

In a similar pattern, sections 224a, 225, and 226 of the Atomic Energy Act provide criminal penalties, respectively, for the unlawful communication of restricted data, the unlawful acquisition of restricted data, and the unlawful removal or concealment of or tampering with restricted data.

If the offense is committed with the intent to injure the United States or to secure an advantage to any foreign nation, the penalty for violation of any of these sections is death or imprisonment for life (if recommended by a jury), or a fine of not more than $20,000, or imprisonment for not more than 20 years, or both.

On April 8, 1968, in the case of *United States* v. *Jackson*, 390 U.S. 570, the Supreme Court of the United States held unconstitutional the death penalty provision of the Federal Kidnaping Act (18 U.S.C. 1201(a)). It did so on the ground that a provision which authorized the death penalty in certain cases if the jury recommended it makes the risk of death the price of asserting the right to trial by jury, and thus impairs the free exercise of that constitutional right; and that the statute imposed an impermissible burden on the exercise of a constitutional right.

That decision was followed in *Pope* v. *United States*, 392 U.S. 651, decided on June 17, 1968, holding unconstitutional a similar provision of the Federal Bank Robbery Act (18 U.S.C. 2113(e)).

Since the language of the Kidnaping Act is similar to the death and life imprisonment penalty provisions of section 222, 224a, 225, and 226 of the Atomic Energy Act, these provisions might be subject to similar constitutional attack if they should be invoked.

If these provisions are, as we believe, subject to such possible attack, then the maximum actually available penalty under any of the four sections would appear to be imprisonment for 20 years and a fine of $20,000, even if there is an intent to injure the United States, or to secure an advantage to a foreign nation. We believe that this deficiency should be corrected by appropriate amendment of the four sections of the Atomic Energy Act.

Our proposal is that life imprisonment, plus a fine of $20,000, be made the maximum penalty for violating each of these sections, without regard to a recommendation by a jury.

It is our view that the maximum penalty of life imprisonment is sufficiently severe and that the death penalty may properly be deleted, in view of the general trend of opinion away from the use of capital punishment, considerable doubt as to whether the death penalty as contrasted with life imprisonment does in fact serve as a substantial deterrent, the very small number of executions for any crimes in the United States during the past decade, and the view of some legal scholars and penologists that capital punishment has a harmful effect on the administration of justice.

The second proposal embodied in S. 1879 and H.R. 9644 is an increase in the maximum penalty for a violation of section 222 of the act, when the offense is committed without the intent to injure the United States or to secure an advantage to a foreign nation.

One of the crimes punishable under section 222 is the unauthorized diversion of special nuclear material, which is a violation of section 57. There could be cases such as an unauthorized diversion by a terrorist, insurrectionist, or criminal group, in which severe penalties might be appropriate even though it were not found that there was an intent to injure the United States or to secure an advantage to any foreign nation.

A report of an ad hoc advisory panel on safeguarding special nuclear material has recommended that the maximum penalty for diversion lacking the statutory specific intent be increased. (See app. 6, p. 52.)

Our proposal is that the maximum criminal penalty for a violation of section 222, in the absence of the prescribed statutory intent, be increased from imprisonment for 5 years and a fine of $10,000 to imprisonment for 10 years and a fine of $10,000.

Representative HOSMER. You said an ad hoc advisory panel which leaves us rather in the dark.

Whose panel and when?

Mr. HENNESSEY. This was a panel chaired by Ralph Lumb.

Representative HOSMER. Named by the AEC?

Mr. HENNESSEY. Yes.

Chairman HOLIFIELD. Will you furnish the membership of the panel and a copy of their recommendations?

Brigadier General CROWSON. This has been done, sir; but we will do it again.

Chairman HOLIFIELD. It is not necessary to do it again if we have it. The staff reminds me that we do have it, so it is not necessary for you to resubmit it.

Please proceed.

Mr. HENNESSEY. The more severe penalty would probably increase the deterrent effect of the statutory prohibition. It would be comparable to those for crimes of similar nature.

For example, theft of Government property is punishable by 10 years imprisonment and a fine of $10,000 (18 U.S.C. 641), and theft of property in interstate or foreign commerce is punishable by 10 years imprisonment and a fine of $5,000 (18 U.S.C. 659).

We do not suggest that there be an increase in the maximum fine. Because of the strategic value of special nuclear material, imprisonment would appear to be the appropriate focus of the penalty rather than a fine.

We note that provisions similar to those in S. 1879 are incorporated into S. 1878. Section 3 of S. 1878 would strike out in each of these four sections the words "death or imprisonment for life (but the penalty of death or imprisonment for life may be imposed only upon recommendation of the jury)," and would insert in lieu of that language "imprisonment for life."

We believe that this provision is similar in effect to that embodied in S. 1879, but that the form of language in S. 1879 is preferable because it would eliminate any question as to possible limitations on the authority to impose imprisonment for a fixed term of years.

Like S. 1879, S. 1878 includes in section 1 provision for an increase from 5 to 10 years in the maximum term of imprisonment when the offense is committed without the intent to injure the United States or to secure an advantage to a foreign nation. The two bills are thus similar in that respect.

This concludes my remarks on the criminal penalty amendments.

At the committee's pleasure, I would be pleased either to answer any questions or continue my testimony on the remaining bills.

Chairman HOLIFIELD. Mr. Price?

POSSIBILITY OF PAROLE

Representative PRICE. Mr. Hennessey, under Federal law what is the period in which a prisoner might be eligible for parole under a sentence of life imprisonment?

Mr. HENNESSEY. My recollection is that period is 7 years. I think it is 7 years, Mr. Price.

Representative PRICE. Under a 20-year sentence, when is he eligible for parole?

Mr. HENNESSEY. Mr. Price, I think it is generally one-third of the term.

Representative PRICE. It is in most States I know. If you wanted to make this a tougher sentence, couldn't you set a number of years where the one-third would be considerably higher than it would be under the life imprisonment sentence?

Mr. HENNESSEY. That is true, Mr. Price. That is one reason why we tend to favor the provisions of our bill over those of S. 1878 because our bill would permit imposing the sentence in the range of 20 years to life, a term of years of over 20 years.

Representative PRICE. Twenty years to life. The bill that you favor would give the jury or the court the latitude to sentence anywhere from 20 years to life, whereas if we accept S. 1878——

Mr. HENNESSEY. We think our bill leaves you the alternative of 20 years to life.

Representative PRICE. Thank you.

Chairman HOLIFIELD. So it actually increases the potential penalty?

Mr. HENNESSEY. Yes.

Representative PRICE. The bill you favor increases the potential sentence?

Mr. HENNESSEY. It does; yes, sir.

Chairman HOLIFIELD. S. 1879 is the one you favor?

Mr. HENNESSEY. Yes, sir.

Chairman HOLIFIELD. S. 1879 and H.R. 9644.

Mr. HENNESSEY. Yes, sir.

(Subsequently, the following letter was received from Mr. Hennessey:)

U.S. ATOMIC ENERGY COMMISSION,
Washington, D.C. October 9, 1969.

Mr. EDWARD J. BAUSER,
Executive Director
Joint Committee on Atomic Energy
Congress of the United States

DEAR MR. BAUSER: At the hearing September 12, 1969 before the Joint Committee on Atomic Energy on various bills which Chairman Holifield referred to as the 1969 omnibus legislation, I was questioned by Congressman Price as follows:

"Representative PRICE. Mr. Hennessey, under Federal law what is the period in which a prisoner might be eligible for parole under a sentence of life imprisonment?

"Mr. HENNESSEY. My recollection is that period is 7 years. I think it is 7 years, Mr. Price.

"Representative PRICE. Under a 20-year sentence, when is he eligible for parole?

"Mr. HENNESSEY. Mr. Price, I think it is generally one-third of the term.

"Representative PRICE. It is in most States I know. If you wanted to make this a tougher sentence, couldn't you set a number of years where the one-third would be considerably higher than it would be under the life imprisonment sentence?

"Mr. HENNESSEY. That is true, Mr. Price. That is one reason why we tend to favor the provisions of our bill over those of S. 1878 because our bill would permit imposing the sentence in the range of 20 years to life, a term of years of over 20 years.

"Representative PRICE. Twenty years to life. The bill that you favor would give the jury or the court the latitude to sentence anywhere from 20 years to life, whereas if we accept S. 1878——

"Mr. HENNESSEY. We think our bill leaves you the alternative of 20 years to life.

"Representative PRICE. Thank you.

"Chairman HOLIFIELD. So it actually increases the potential penalty?

"Mr. HENNESSEY. Yes."

I have since learned that 18 U.S.C. 4202 provides that "a Federal prisoner . . . may be released on parole after serving one-third of such term or terms or after serving fifteen years of a life sentence or of a sentence of over forty-five years."

Despite the fact that a Federal prisoner sentenced to a term of years in excess of 45 years may be released on parole after serving 15 years I continue to favor the provisions of S. 1879 and H.R. 9644 over those of S. 1878. The former bills would authorize imposing sentences of any term of years of life imprisonment. S. 1878 does not authorize sentences in excess of 20 years and less than life imprisonment.

The advantage of the former bills with the more flexible terms is demonstrated by the fact that a prisoner sentenced to a term of 30 years would not be eligible for parole until he had served 10 years. Moreover, the granting of parole is discretionary. If parole were not granted, then obviously the potential penalty (short of life

imprisonment) is greater under S. 1879 and H.R. 9644 than it would be under S. 1878.

I hope this serves to clarify the record. If there is any additional information you desire please let me know.

Sincerely yours,

JOSEPH F. HENNESSEY,
General Counsel.

Chairman HOLIFIELD. Without objection, the Chair will place in the record a letter to Mr. Hennessey from our then staff director under date of April 11, 1968, which was mailed immediately after the Supreme Court decision in the *Jackson* case asking him to comment on the effect of that decision, and a reply from Mr. Hennessey to the staff director under date of April 26, 1968.

(The referenced letters follow:)

CONGRESS OF THE UNITED STATES,
JOINT COMMITTEE ON ATOMIC ENERGY,
Washington, D.C., April 11, 1968.

JOSEPH F. HENNESSEY, Esq.,
General Counsel,
U.S. Atomic Energy Commission,
Germantown, Md.

DEAR MR. HENNESSEY: No doubt you are aware of the decision handed down by the Supreme Court of the United States earlier this week in *U.S.* v. *Jackson,* 36 U.S.L. Week 4277 (U.S. April 8, 1968). It was there held that the death penalty provision of the Federal Kidnapping Act is unconstitutional because, in permitting imposition of the death penalty only upon defendants who assert their right to be tried by a jury, it discourages assertion of—and thereby imposes an impermissible burden upon the exercise of—a constitutional right.

This decision would appear to hold significant implications for, and raise important questions about, somewhat similar provisions in Sections 222, 224 a., 225 and 226 of the Atomic Energy Act of 1954, as amended. As you know, these sections provide that where there is a violation thereof with intent to injure the United States or secure an advantage to a foreign nation, there may be imposed punishment by a fine of not more than $20,000 or imprisonment for not more than 20 years, or both, or, upon the recommendation of a jury, life imprisonment or death.

It would be appreciated if you would provide the Joint Committee with your views on the effect of the referenced decision on the cited sections of the Atomic Energy Act. If, on the basis of your review, you believe that amendments to these sections of the Act are required in order to give effect to the intent of Congress presently reflected therein, please provide the Committee with your recommendations for additional legislation at your earliest convenience.

Thank you for your assistance.

Sincerely,

JOHN T. CONWAY,
Executive Director.

U.S. ATOMIC ENERGY COMMISSION,
Washington, D.C., April 26, 1968.

Mr. JOHN T. CONWAY,
Executive Director,
Joint Committee on Atomic Energy,
Congress of the United States.

DEAR MR. CONWAY: Thank you for your letter of April 11 inquiring as to my views of the effect of the decision of the U.S. Supreme Court in *United States* v. *Jackson,* 36 L.W. 4277 (April 8, 1968), on Sections 222, 224a., 225 and 226 of the Atomic Energy Act of 1954. Each of these sections provides that "the penalty of death or imprisonment for life may be imposed only upon recommendation of the jury."

It appears that the effect of the *Jackson* decision on the cited sections of the Atomic Energy Act is similar to its effect on the death penalty provision of the Federal Kidnaping Act, because the penalty provisions of the two statutes operate

in the same manner. In my view, neither the death penalty nor life imprisonment may now be imposed for violation of Section 222, 224a., 225 or 226. But just as the penalty provision of the Kidnaping Act has been held to be severable from the remainder of that statute, the death or life imprisonment provisions in these four sections of the Atomic Energy Act also appear to be severable. Thus the penalty which may be imposed for violating each of these sections would now be a fine of not more than $20,000, or imprisonment for not more than twenty years, or both.

There does not appear to be anything in the language of the penalty provisions of Sections 222, 224a., 225 and 226 or in their legislative history [1] to warrant a different result from that reached in *Jackson*. All the arguments which Justice Stewart used in holding that the death penalty provision of the Kidnaping Act imposed an impermissible burden on the exercise of a constitutional right—the right of choice whether or not to be tried by a jury—apply equally to the Atomic Energy Act's provisions. Nothing in the legislative history indicates that these provisions give the trial judge discretion to set aside a jury recommendation of death or life imprisonment. The Court in the *Jackson* case rejected the Government's argument that a special jury could be convened to recommend a sentence when the defendant had waived a jury trial. Finally, it rejected the possibility of requiring a defendant to submit to a jury trial as a means of avoiding the issue of waiver. In the light of the *Jackson* case, it appears that the Atomic Energy Act's provisions would be held to penalize the assertion of a constitutional right in the same manner as would those of the Kidnaping Act.

The test which Justice Stewart used in holding the death penalty provision severable from the remainder of the Kidnaping Act appears to apply to the provisions of the Atomic Energy Act.

"Unless it is evident that the legislature would not have enacted those provisions which are within its power, independently of that which is not, the invalid part may be dropped if what is left is fully operative as law." (36 U.S. L.W., at 4282, quoting from *Champlin Refining Co.* v. *Commission*, 286 U.S. 210, 234.)

In addition, Section 281 of the Atomic Energy Act provides:

"If any provision of this Act . . . is held invalid, the remainder of this Act . . . shall not be affected thereby."

Although the *Jackson* decision did not discuss its effect on the Atomic Energy Act, the Government's brief asserted that the lower court's ruling would invalidate these provisions of our statute. (Brief for the United States, p. 4)

Since the removal of the death penalty and life imprisonment still leaves substantial criminal penalites for violation of Sections 222, 224a., 225 and 226, no emergency legislation seems to be required. We are carefully studying the penalties for violations of these sections, as well as the recommendation of the Ad Hoc Advisory Panel on Safeguarding Special Nuclear Material to increase the maximum imprisonment for violation of Section 222 without the intent to injure the United States or secure an advantage to any foreign nation. We anticipate that we shall recommend legislation to deal with the *Jackson* decision in its effect on the Atomic Energy Act against the background of policies with respect to penalties for comparable offenses.

We shall be glad to discuss this subject with you if you wish to explore it further at this time.

Sincerely yours,

JOSEPH F. HENNESSEY,
General Counsel.

Chairman HOLIFIELD. Mr. Hosmer.

Representative HOSMER. I have no questions.

Chairman HOLIFIELD. Mrs. May?

Representative MAY. No questions.

CHAIRMAN HOLIFIELD. Actually, the *United States* v. *Jackson* decision had a greater adverse impact on the Atomic Energy Act than the Federal Kidnaping Act even though the Atomic Energy Act was not directly involved; is that not true?

Mr. HENNESSEY. That is true, Mr. Chairman.

The effect of the Kidnaping Act was only to invalidate the death penalty that was provided on recommendation of the jury.

[1] This language was added to S. 1717 (the bill which became the Atomic Energy Act of 1946) by the conference committee. During the House debate on the conference report, Mr. Thomason, one of the managers of the bill, indicated that the jury recommendation requirement had been added "as a matter of justice." (Congressional Record, July 26, 1946, p. 10194)

In the case of our act, it affects not only the death penalty but also the life imprisonment which was dependent on jury recommendations. So it has a more serious impact on the Atomic Energy Act.

Chairman HOLIFIELD. As you mention, the constitutionality of the death penalty is now before the Supreme Court for decision.

Mr. HENNESSEY. Of the death penalty, itself?

Chairman HOLIFIELD. The constitutionality of imposing the death penalty.

Mr. HENNESSEY. Yes, on the question of whether it is cruel and unusual punishment prohibited by the Constitution.

Chairman HOLIFIELD. If a defendant were tried and convicted after enactment of the proposed amendments for a violation committed prior to the amendment, what would be the maximum penalty to which he would be subject?

Mr. HENNESSEY. In the current situation where as of today and assuming that the death and life imprisonment in the Atomic Energy Act is invalid, the maximum penalty is 20 years. So, anyone committing a crime today would be subject to a maximum penalty of 20 years even though at the time he came to trial and was convicted, this amendment had been enacted and the new penalty had been raised to life imprisonment.

Chairman HOLIFIELD. Does the Justice Department support the proposed legislation including the proposal to discard capital punishment provisions?

Mr. HENNESSEY. The Justice Department strongly supports the elimination of the capital punishment provision.

Chairman HOLIFIELD. You will recall that earlier this year I asked the Commission to inform the committee whether and, if so, which bills introduced in the last Congress or the early days of this Congress had been cleared by the new administration. I notice that Dr. Seaborg in his response of March 21 states that:

> The Bureau of the Budget advised us that there would be no objection to the continued support by the Atomic Energy Commission of the bill under question.

(The referenced letter follows:)

U.S. ATOMIC ENERGY COMMISSION,
Washington, D.C., March 21, 1969.

Hon. CHET HOLIFIELD,
Chairman,
Joint Committee on Atomic Energy,
Congress of the United States

DEAR MR. HOLIFIELD: The Bureau of the Budget on March 7, 1969, advised us that there would be no objection to continued support by the Atomic Energy Commission of the following draft bills:

(1) "To amend the Atomic Energy Act to provide that life imprisonment shall be the maximum criminal penalty for certain offenses, and to increase the criminal penalties for unauthorized diversion of special nuclear material and other offenses." (Submitted to the Joint Committee by my letter of January 10, 1969.)

(2) "To amend the Atomic Energy Act to authorize the Commission to enter into agreements of indemnification for ocean transport of materials." (Submitted to the Joint Committee by my letter of January 16, 1969.)

(3) "To amend Subsection 182 b. of the Atomic Energy Act modifying the requirement for mandatory review by the Advisory Committee on Reactor Safeguards of certain facility license applications." (Submitted to the Joint Committee by my letter of January 3, 1969.)

(4) "To amend the Atomic Energy Act to eliminate the requirement for a finding of practical value and abolish the distinction between commercial and certain research and development licenses for facilities." (Submitted to the Joint Committee by my letter of January 16, 1969.)

(5) "To amend the Atomic Energy Act, to provide for civil monetary penalties."
(Submitted to the Joint Committee by my letter of January 17, 1969.)

Cordially,

GLENN T. SEABORG,
Chairman.

Chairman HOLIFIELD. It is our assumption that you did approach the Justice Department on this matter.

Mr. HENNESSEY. We did last year and this year the matter was rechecked with them when we obtained the reapproval of the Budget Bureau.

Chairman HOLIFIELD. Do you have a letter to that effect from them, or was it orally?

Mr. HENNESSEY. I don't believe we have a direct letter from Justice. Their formal communication was with the Budget Bureau.

Mr. PARKS. What we have is a letter from the Bureau of the Budget reclearing the submission of this legislation and other items of legislation.

Chairman HOLIFIELD. Does it mention contacting the Justice Department?

Mr. PARKS. No, sir; it does not. It just refers to the fact that these bits of legislation have been recleared.

Chairman HOLIFIELD. The staff informs me that we will be receiving shortly a Justice Department letter indicating its position on that matter. (See p. 4.)

Representative HOSMER. Mr. Chairman, in the light of your questioning, I do have a question for Mr. Hennessey.

Chairman HOLLIFIELD. Go ahead.

Representative HOSMER. As I understand, Mr. Hennessey, you stated the hypothetical case that should a man commit a violation under the law today, and we amend the law, that the penalty in being not at the time of the conviction but at the time that the crime occurred would be the applicable penalty; is that correct?

Mr. HENNESSEY. That is correct. We have checked this with the Department of Justice and that is their point of view.

Representative HOSMER. Now, in amending this act, then, we are repealing certain provisions providing for this 20-year penalty, at least. Should we have some kind of saving clause to catch up with our criminals?

Mr. HENNESSEY. I think that is a very good point, Mr. Hosmer. There certainly is left open room for argument that this is a repeal of one law and the enactment of a new one.

I think it would be adequate to make it clear in the legislative history that there is no intent on the part of the Congress to repeal the existing criminal provisions but simply to amend them.

Representative HOSMER. If we wipe them off the books, I don't know that any prior statements in the report will put the man behind bars.

Mr. HENNESSEY. Certainly a savings provision in the act would make it completely unquestionable.

Representative HOSMER. I think you had better prepare one for our consideration.

Mr. HENNESSEY. Very well, sir.

Representative HOSMER. When did this business come in about the law being as you have enunciated it with respect to the imposition of sentence? It seems when I went to law school a hundred or so years ago that was a matter that had no bearing on the substance of the crime but merely on the person convicted and that whatever penalties were applicable at the time of conviction were applied irrespective of what they were at the time of the commission of the crime.

Is this something new or is my recollection fouled up?

Mr. HENNESSEY. I have to confess I am even further removed from law school than the Congressman.

I didn't know the answer to this question so we did check it with the experts. This is their position. The reason for it I believe is that if that were not the answer then the enactment of this law would be given ex post facto effect.

Representative HOSMER. I guess that is the reason. I just don't see it.

But, get us that savings clause language, will you, please, and consult with our staff on it?

Mr. HENNESSEY. Very well, sir.

Chairman HOLIFIELD. Mr. England.

Mr. ENGLAND. Mr. Hennessey, Senator Pastore's bill, S. 1878, in section 2 would amend section 223 of the Atomic Energy Act by adding the word "criminal" before the word "penalty."

The AEC's bill, H.R. 9644, does not contain any comparable provision.

I am wondering if you would favor this particular amendment or think it unnecessary.

Mr. HENNESSEY. I do not see the necessity for it.

Is this question directed to the criminal provision amendment?

Mr. ENGLAND. Yes.

Mr. HENNESSEY. In which section?

Mr. ENGLAND. I am talking about section 2 in Senator Pastore's bill, S. 1878. It proposes to add the word "criminal" before the word "penalty" in section 223 of the act.

Mr. HENNESSEY. I would see no problem with inserting the word "criminal."

Mr. ENGLAND. Do you think it is necessary or advisable, or you just don't have any problem?

Representative HOSMER. Is it a matter of style and substance?

Mr. HENNESSEY. In the context of the fact we are proposing here, of civil penalties, I expect it would be desirable to make it clear that what we are talking about here is criminal penalties.

Mr. ENGLAND. I believe that is the reason for the proposal.

Mr. HENNESSEY. We have not had civil penalties under the act and we would have under this proposal. I think it would be desirable.

Mr. ENGLAND. One other question, Mr. Hennessey, of a technical nature.

In the AEC's bill, H.R. 9644, in amending sections 222, 224, 225, and 226, although these amendments to each of the sections appear to be identical, the AEC has spelled out a separate section in the bill for each section of the act being amended, whereas Senator Pastore's bill seeks to accomplish this in one section, section 3.

My question is: Is there a particular reason why the Commission drafted the bill the way it did? Is that to be preferred, or is there a problem of doing it the way Senator Pastore did it?

Mr. HENNESSEY. I am afraid we are just being wordy.

There may be some advantage in effecting some economy of verbiage here. I don't think there would be any objection to our consolidating the four amendments into one.

Mr. ENGLAND. Thank you, Mr. Chairman.

Chairman HOLIFIELD. The staff will take note of those suggestions, then, in drafting the omnibus bill.

If there are no other questions, we will go to the next few bills.

Representative ASPINALL. Mr. Chairman, I have a question on this matter of the man's statement of the general trend of opinion away from the use of capital punishment. I don't think that that is just automatically true per se.

I know that there is a great cry at the present time by some penologists and other students of criminal activity, as it were. You make the statement here and apparently base your reasoning because it happens to be stylish in some quarters. I can tell you it is not stylish in my quarters.

Mr. HENNESSEY. I think, Mr. Aspinall, we relied more heavily on the statistics over the last 10-year period than any public opinions as to whether it was stylish or not. I will be happy to give you the statistics. They are quite impressive.

Representative ASPINALL. Statistics don't show that the absence of a statute which provides for capital punishment is what is responsible for the fact that we have less capital punishment than we did before that time. Maybe this is the action of the court. But very few States I remember have done away entirely with capital punishment on the statute books.

Mr. HENNESSEY. I think there are something like eight or 10 States that have abolished it.

Representative ASPINALL. Yes.

If your statistics show me any relationship between the fact that there is less capital punishment——

Mr. HENNESSEY. I think we can do it in the case of Federal crimes, Mr. Aspinall. There has been no action taken over this 10-year period to abolish capital punishment for Federal crimes, but there have been very, very few; I think something like three executions in the last 5 years, for violations of Federal laws.

Representative ASPINALL. The statute is still there.

Mr. HENNESSEY. The statutes are still there.

Representative ASPINALL. All right. Let us keep the statutes there and if we have to use them, use them.

Representative HOSMER. Is it not a fact that there was some kind of case pending over in the Supreme Court or something that caused for 24 months or 36 months a kind of recess on executions and that accounts for the small number? But that since this matter has been settled and States can go ahead, as I understand it, and impose the penalty they have not rushed into it as yet and that this ban was taken off some time earlier this year?

Do you recall anything of that nature?

Mr. HENNESSEY. I am not familiar with that situation.

Representative HOSMER. Thank you.

Representative ASPINALL. That is all, Mr. Chairman.

Chairman HOLIFIELD. I call attention to Mr. Hennessey's statement which seems to put it not on the ground of eliminating the death penalty so much as on the risk of asserting the right of trial by jury.

I read—referring to the Federal Kidnaping Act decision, *U.S.* v. *Jackson*, 309 U.S.C. 570—

> The Supreme Court held unconstitutional the death penalty provision of the Kidnaping Act. It did so on the ground that a provision which authorized the death penalty in certain cases if the jury recommended it makes the risk of death the price of asserting the right to trial by jury.

Therefore, the decision was, as I see it, made on jeopardizing the right of an individual under indictment to request trial by jury which is supposed to be the basic right and it was to remove that penalty for asking trial by jury. Is that not right?

Mr. HENNESSEY. That is right. That is why we have come forward with this proposal.

Representative PRICE. This means, though, if we wanted to we could leave the death penalty in here but would not prescribe that it had to be recommended by the jury.

Mr. HENNESSEY. That is correct.

Chairman HOLIFIELD. But would not the individual put himself in jeopardy if he did request it? He would still put himself in jeopardy if he did request trial by jury.

Mr. HENNESSEY. If the language "if the jury recommended" were omitted, then he would not be suffering any risk by electing to go to a jury because he could get the death penalty whether he went to a jury or before a judge.

Chairman HOLIFIELD. Then the question occurs as a result of the question by Mr. Aspinall, unless we want to at this time take a position on capital punishment, which some of us have, incidentally, we could solve the particular problem of this legislation by doing as Mr. Aspinall suggests, leaving the death penalty there but adjusting the language to protect the right of the individual to trial by jury.

Mr. HENNESSEY. That could be done.

Chairman HOLIFIELD. Why wasn't that suggested in view of the fact that what we are doing is trying to correct our own act and not trying to go to the substantive problem of settling this capital punishment question?

I happen to believe that capital punishment should be done away with. That is my personal belief. But I would not want to achieve that result by indirection. I would want to achieve it by direct legislation if it is to be achieved.

In California, we have the death penalty. While it has not been used in a long time, it is on the books and it could be used if any Governor wanted to use it; I mean, to back up a conviction requiring a death penalty. In most instances, I think the Governors have commuted the death penalty to life imprisonment in California in recent years.

Isn't that right, Mr. Hosmer?

Representative HOSMER. I think so, Mr. Chairman.

Mr. HENNESSEY. This was a very strong policy position of the last administration. I am sure you recall that Attorney General Clark appeared before the Congress and made a quite strong statement

favoring abolition of the death penalty and that continues to be the policy of the new administration.

So, this did afford an opportunity to bring before the Congress this policy of two administrations.

Representative ASPINALL. As far as I am concerned, bring it up as a general matter. I don't think it is up to this committee to carry any load like that. I happen to be on the other side of the fence from Mr. Holifield, myself. On the other hand, I am also not desirous that the death penalty be carried out in very many instances. I think we can take care of this without getting into the matter which has bothered me ever since 1937.

Chairman HOLIFIELD. The committee will make a decision on that.

If there are no further questions on that point, we will go on to the next item, imposition of civil penalty for violations of licensing requirements.[1]

CIVIL PENALTIES

Mr. HENNESSEY. S. 1882 and H.R. 9648 would amend the Atomic Energy Act by adding a new section 234 authorizing the imposition of civil monetary penalties for violations of licensing requirements and by changing section 221 to make clear that "actions" to be instituted by the Attorney General do not include administrative actions by the Commission.

In the Commission's view, this bill will materially assist it in carrying out its program to protect the public health and safety and the common defense and security. We have also reviewed S. 1878 introduced by Senator Pastore which includes proposed amendments to the statute for additional criminal penalties.

While both bills have common objectives for civil penalties, we believe that our proposed bill, which emphasizes the remedial nature of the legislation, avoids possible problems of former jeopardy.

By way of background, the Commission now has authority to suspend, modify, and revoke licenses and to issue "cease and desist" orders. We also are empowered under section 232 of the Act to enforce these orders and obtain any other appropriate relief by injunctions from Federal District Courts if necessary.

Generally speaking, we have had relatively few cases involving violations of regulations or license conditions by our licensees which have been significant. As a matter of fact, I believe the safety record established under the regulatory program of the AEC continues to be outstanding. In the nuclear reactor field, the AEC has licensed the operation of 114 reactors of all types since the beginning of the regulatory program in 1954. These 114 power, research, and testing reactors have accumulated a total of over 820 reactor years of operation without a radiation fatality or serious radiation exposure.

The record of safety on the materials side has also been good. For example, in 1968, the Commission's Division of Compliance performed 2,016 inspections of materials licensees. Of the violations found in these inspections, it was necessary to issue notices of violation in only 40 cases and orders in only two.

Of the latter, one ordered the licensee to cease and desist from further use of special nuclear material and to decontaminate its facilities. The second ordered a licensee to cease and desist operations

[1] Additional information concerning the proposed criminal penalty amendments to the Atomic Energy Act is set forth in AEC answers to written JCAE questions, p. 36.

which had not been authorized under the license in two areas of its plant.

In 1968, licensees experienced a total of 20 radiation incidents of the four general types defined in part 20; only 12 of these involved exposure of personnel.

We believe that our enforcement program, together with the continuing improvements we have made in our regulations for licensing, has caused industry to appreciate the need for careful compliance with our safety requirements. We find that there is rarely a need to consider suspension or revocation of a license.

Chairman HOLIFIELD. Let us stop there, please, and go back to the previous paragraph.

This is unclear to me and perhaps to some of the other members. We refer here to part 20. Would you explain that?

Mr. HENNESSEY. The four general types defined in part 20?

Chairman HOLIFIELD. Yes. What is part 20? Part 20 of what?

Mr. HENNESSEY. Part 20 of the AEC regulations that contains our standards for exposure to radiation activity, the maximum permissible concentrations.

Mr. ENGLAND. I think the chairman is particularly interested in learning what the four general types you refer to are.

Mr. HENNESSEY. Mr. Low.

Mr. LOW. The four general types of radiation incidents are, the overexposure of people, the release of excessive concentrations of radioactive material to the environment, where it is necessary to shut down the facility because of a radiation incident, for example to clean up contamination, and where there is a monetary value of damage.

These are the four types of incidents that are referred to.

Chairman HOLIFIELD. Did you say the monetary value of the facility?

Mr. LOW. No, sir; the dollar amount of the damage caused by the radiation incident is a better way to say it.

Mr. HENNESSEY. These four types are specified in our regulations in section 20.403(a) and (b).

Chairman HOLIFIELD. That clarifies that so we can at least look up the reference and find what it is.

All right. Please proceed.

Mr. HENNESSEY. We would like to continue this excellent safety record. In order to assure that we can act flexibly and effectively against any safety violation, we consider it necessary to have a full range of remedial powers. There may be cases in which license suspension or revocation is not in the public interest, but in which the importance of full adherence to regulatory requirements should be emphasized by more than a notice of violation or a cease and desist order.

In such cases, a civil monetary penalty could be imposed without requiring the cessation of an activity which might be of material benefit to the public or without depriving the licensee or his employees of their means of livelihood.

All of the major regulatory agencies in the Federal Government have statutory authority to impose civil penalties in appropriate cases to assist them in carrying out their regulatory functions, although the statutory provisions for each differ somewhat.

The proposed legislation is modeled upon similar provisions in the Federal Communications Act (47 U.S.C. 503–504) and the Federal Aviation Act (49 U.S.C. 1471). Such authority is civil only and would not bar criminal prosecution where appropriate.

At this point, it is well to emphasize the civil nature of this proposed bill, in order to make clear that the imposition of a civil penalty would not bar subsequent criminal prosecution by the Department of Justice because of former jeopardy considerations, in the event Justice decided that criminal action should be taken.

I turn now to the specific provisions of the proposed civil penalties amendments. Paragraph a. of the new section 234 authorizes the Commission to impose penalties not to exceed $5,000 for each single violation and not to exceed $10,000 for continuing violations by any person licensed pursuant to sections 53, 62, 81, or 101 of the act, of any regulations, orders, or licenses issued under such sections.

You will note that this covers all classes of special nuclear, source, byproduct, and facility licenses. It does not apply to Commission contractors or other persons who are exempt from licensing. This section also provides specific authority to the Commission to compromise, mitigate, or remit such penalties.

Chairman HOLIFIELD. Would this apply in the field to Commission contractors who are not licensees?

Mr. HENNESSEY. We would not have authority to impose civil penalties on our contractors who are not licensees.

Chairman HOLIFIELD. All right.

Mr. HENNESSEY. Under the present procedures, most matters of noncompliance are handled by the Division of Compliance regional offices. In those cases in which formal notices of violations from headquarters to a licensee are required, they are issued in accordance with the requirements of the Administrative Procedure Act and our implementing regulations.

Notice of the proposed imposition of a civil penalty would be made as part of this existing notification procedure or by a special notice. In any case where the notice of violation is omitted, a special notice would be provided to assure that the licensee is given a reasonable opportunity to show in writing either that he has not committed the violation charged or that such violation took place under mitigating circumstances. Of course, any notice that we would issue would specify the violation or violations and the amount of the proposed civil penalty.

Section b. also provides that the notice would advise the alleged violator that upon failure to pay the civil penalty subsequently determined by the Commission, if any, the penalty may be collected by a civil action. Such civil action would be instituted by the Department of Justice in Federal district court where the right to a full hearing on the merits of the charges would exist.

Section c. deals with the responsibility of the Attorney General. If after the Commission determines that a penalty should be imposed, the licensee fails to pay, the matter is referred to the Attorney General. He will determine whether a civil action for collection in Federal district court should be instituted. He is given exclusive authority to compromise, mitigate, or remit the civil penalty after the matter has been referred by the AEC.

Under these provisions, an alleged violator is guaranteed an opportunity for a full hearing on the merits in Federal district court before any civil penalty may be collected from him.

The proposed amendments, in accordance with the basic authority provided in section 161 of the Atomic Energy Act and the Administrative Procedure Act, would also permit the Commission to provide a full administrative hearing to any person charged with violations or to handle the matter informally.

Let me assure you that the Commission will always provide a person with a full administrative hearing, if requested, prior to determining that a civil penalty should be imposed and before referring the matter to the Department of Justice.

Section 2 of the proposed bill is of a clarifying nature. Its purpose is to make clear that approval of the Attorney General is not required prior to the initiation of administrative action by the Commission, not only with respect to the imposition of civil penalties, but also with respect to other enforcement action the Commission is now authorized to bring.

Section 221c provides that:

> No action shall be brought against any individual or person for any violation under this act unless and until the Attorney General of the United States has advised the Commission with respect to such action and no such action shall be commenced except by the Attorney General of the United States . . .

The legislative history of the act indicates that "action" within the purview of section 221c means "court action" and does not apply to administrative action by the Commission. However, the proposed amendment to section 221c will prevent any possible misinterpretation of the scope of the Commission's authority to take appropriate administrative action.

In our letter of January 17, 1969, to the Joint Committee in which we forwarded our proposed bill, we also commented upon the draft legislation then identified as S. 3958, 90th Congress, and now identified as S. 1878. (See app. 4, p. 48.)

As we stated, in considering revisions of our initial drafts within the executive branch of the Government, it became clear that the proposed legislation should emphasize that it is remedial in nature and not punitive. It is important that the imposition of a civil penalty will in no way create a former jeopardy question which might bar subsequent criminal prosecution in an appropriate case.

For this reason, we believe that it would be particularly necessary to delete the third sentence in section 234a of S. 1878 which provides that "Penalties prescribed by this section shall be in addition to any other specific or general criminal penalties provided by law and any other sanctions authorized by this act, including revocation, suspension, or modification of license."

We understand that if any provision such as the quoted sentence were included in a new civil penalties provision, the Department of Justice would wish to participate initially in determining whether a "civil penalty" should be imposed or whether criminal prosecution under an appropriate provision of chapter 18 of the act should be initiated.

It is considered desirable to provide discretion to the Department of Justice, after the matter has been referred to it by the Commission, to determine whether civil action to collect a penalty should be insti-

tuted since that Department would have basic responsibility for the action.

We also feel it is advisable to provide that the Commission and the Department of Justice shall each have authority to compromise, mitigate, and remit penalties at such time as the matter is within their respective jurisdiction.

Because of the questions as to the finality of the determinations, it is considered preferable not to provide that civil penalties may be deducted from any sums owing from the United States to the persons charged. After judgment, a setoff can be effected against a violator without benefit of special legislation.

Rather than provide that a civil action for collection should be brought within 1 year from the date of notification, it appears preferable to be silent on this point so that the existing 5-year statute of limitations for the collection of fines, penalties, and forfeitures will apply.

As previously stated, it is clear that the objectives of both bills are the same. However, for the reasons stated, we believe that our proposed legislation will provide for implementation which is more consistent with the general policy for administration of such civil penalties by the Department of Justice.

In closing, we believe that the authority to impose civil penalties will assist the AEC in carrying out its responsibilities to protect the health and safety of the public and the common defense and security.

Mr. Chairman, members of the committee, I thank you for your attention and consideration of my testimony.

I would be pleased to answer any questions you may have.

Chairman HOLIFIELD. Mr. Price?

Representative PRICE. I have no questions.

Chairman HOLIFIELD. Mr. Hosmer?

Representative HOSMER. I have no questions.

Chairman HOLIFIELD. Mr. Aspinall?

Representative ASPINALL. I have no questions.

Chairman HOLIFIELD. Mrs. May?

Representative MAY. I have no questions, Mr. Chairman.

APPLICABILITY TO NON-LICENSEES

Chairman HOLIFIELD. The AEC's civil penalties legislation, H.R 9648, is limited to persons licensed under the Atomic Energy Act. Doesn't that mean that if the offender never had a license, or had a license but allowed it to expire, that he can't be penalized under the AEC bill?

Mr. HENNESSEY. That is correct, Mr. Chairman. Our bill would apply only to persons who have a license.

Chairman HOLIFIELD. Senator Pastore's bill, S. 1878, would appear to cover even nonlicensees who violate sections of the act involved.

Isn't that preferable to the AEC's bill?

Mr. HENNESSEY. I think here we have been influenced in our proposal by the suggestion made by the Department of Justice that there would be less risk of their being unable to prosecute violations of the provisions of the act that have criminal penalties attached to them if our administrative action under the proposed bill were limited to licensees and did not extend to persons who were outside of our

licensing system and were simply guilty of violation of criminal provisions of the act or provisions of the act that do have a consesequence of possible criminal penalty.

Representative HOSMER. Did they tell you why they came to such a conclusion?

Mr. ENGLAND. Is it because Senator Pastore's bill covers so many more sections of the act?

In other words, let me ask you this question——

Mr. HENNESSEY. I think this is right.

Mr. ENGLAND. If the committee were to adopt the approach in the Pastore bill, S. 1878, and cover nonlicensees as well as licensees, but were to use therein only the sections that you use in H.R. 9648; namely, sections 53, 62, 81, and 101, would the Justice Department objections still obtain?

Mr. HENNESSEY. Specifically, their comment on this subject simply indicated that if limited to licensees their concern would be at least alleviated, if not eliminated.

Mr. ENGLAND. Then in specific response to Mr. Holifield's question, if an AEC licensee allowed his license to expire but continued his previously authorized operations and in effect then was violating the act, he would be virtually immune under this legislation.

Mr. HENNESSEY. Yes. Of course, we would have all the other available remedies against him, including criminal prosecution.

Chairman HOLIFIELD. Are there other provisions which would cover their cases?

Mr. HENNESSEY. We certainly could issue orders to them and upon violation of orders take punitive action against them. We could go to court to get an injunction against their performing these operations without a license.

Chairman HOLIFIELD. Where you furnish material to a licensee even though he purchased it and for some reason his license is revoked, is it obligatory that you recapture the special nuclear material?

Mr. HENNESSEY. He, of course, would be without authority to continue to possess it. I assume the first action our regulatory staff would take if the license expired is that he would be ordered to deliver the material within a stated period of time.

Chairman HOLIFIELD. If he had bought the material from you, would you be obligated to pay him for such material as he delivered back to you or would the AEC be leasing it from him?

Mr. HENNESSEY. I presume we could sell the material and give him the proceeds of it. I don't think we have an obligation of our own to compensate him for the material.

What would possibly happen, I suppose, is that he would have someone that he was prepared to deliver the material to for a price and we would direct him to deliver it to that purchaser.

Chairman HOLIFIELD. It seems to be kind of leaving this up in the air, though, to me. It does not seem very plain that you have a policy of carrying through in a case like this.

Mr. HENNESSEY. Mr. Low can add something to this.

Chairman HOLIFIELD. Have we had any occasion, Mr. Low, where we have conveyed material either by purchase or lease into the hands of a licensee whose license the AEC later found it necessary to revoke; and, if so, what did the AEC do in that case?

Mr. Low. What usually happens, Mr. Chairman, is that an order is issued to the licensee to divest himself of that material within a stated period of time. We say transfer to an authorized person.

What usually happens is that if he transfers that to a licensee who is authorized to receive it, then when we go back and see if indeed he has divested himself, we also assure ourselves that it was sent to an authorized licensee because you know the license limits people in the amounts and kinds of material that they can possess. This is usually what happens.

Chairman HOLIFIELD. So you don't feel there is a void here of any kind?

Mr. Low. No. As Mr. Hennessey said, we can issue an order and if they don't comply with the order, as I understand from the lawyers, we would use an injunction procedure; get them in court.

Mr. ENGLAND. Mr. Holifield, one reason why the answer to the question of whether or not only licensees are covered may be important is that I can think of one case that arose about 2 years ago where a company in Georgia had an application for a license pending before the Commission to operate a nuclear laundry, so called, and before the license had been approved the operator decided to go into operation. The Commission discovered this when it investigated the complaint of a competitor. When it did, it did nothing more severe than issue a cease and desist order. Subsequently the offender's license application was approved.

The Commission, if it had had this civil penalties authority at that time, and if it covered nonlicensees, could have imposed a fine. As it was, the Commission did not deem the infraction sufficiently serious to deny the license outright; thus, the AEC was in the position of doing little more than directing the offender to cease doing what he shouldn't have been doing in the first place.

This prompted an inquiry from the committee staff to the Director of Regulation, Harold Price, in which we raised the question of whether or not the AEC did have authority to impose civil fines, and if not, whether the Commission desired it. Mr. Price responded by saying the Commission did not have the authority, but that draft legislation to give the Commission such authority was then under consideration within the executive branch.

Nearly a year later, when such legislation still had not been submitted to Congress, Senator Pastore introduced a bill which would have given the AEC the authority.[1] Still later, the Commission submitted its own bill.[2]

That is the background, and this is why the committee may want to consider taking the approach that Senator Pastore has in his bill, namely, covering nonlicensees as well as licensees.

Mr. HENNESSEY. I don't think it would create any great problem. We would have the authority. If it is a real problem in the exercise of it in any particular instance, we don't have to exercise it.

Chairman HOLIFIELD. Are there any questions from the members? Mr. Price?

Representative PRICE. Have you found any great need for this type of authority?

[1] See floor statement by Senator Pastore in connection with introduction of S. 3958, p. 5.
[2] See H.R. 9648 (S. 1882 companion), p. 3.

Mr. HENNESSEY. Situations have come up where the violations are of sufficient importance where you feel that a simple letter of reprimand or cease and desist order doesn't quite have much of a deterrent effect on a future course of conduct.

On the other hand, if you shut down a production plant for this reason you are promptly throwing a couple hundred people out of work and you are depriving public customers of a product that they are waiting for.

So, it does seem that an intermediate course of action, that would be a substantial fine, would constitute a valuable deterrent, and one that every other major regulatory agency has.

Representative PRICE. You say every other regulatory agency has similar powers, similar authority?

Mr. HENNESSEY. Yes, sir; all of the six major regulatory agencies have civil penalty authority now.

(Subsequently, the AEC furnished the following information:)

Examples of the authority of the principal regulatory agencies to impose civil monetary penalties

Federal Power Commission, 16 U.S.C. 825(n).
Securities Exchange Commission, 15 U.S.C. 78 ff(b).
Interstate Commerce Commission, 49 U.S.C. 20(7)(a).
Federal Trade Commission, 15 U.S.C. 45(1).
Federal Communications Commission, 47 U.S.C. 503, 504.
Federal Aviation Agency, 49 U.S.C. 1471.

Representative PRICE. That is all I have.

Chairman HOLIFIELD. Mr. Hosmer.

FEDERAL-STATE CONFLICT ON POWER TO REGULATE

Representative HOSMER. Would this function in a situation where, say you were regulating a nuclear powerplant and somebody came out and said, "Well, I am the sheriff of the county where it is and the county board of supervisors has started to regulate the radiation releases from this reactor", and he was creating quite a fuss, would you be able to move in on such a person under this kind of setup?

Mr. HENNESSEY. The intervenor here who is trying to close down the operation?

Representative HOSMER. Well, let us take a situation with which you are somewhat more familiar.

Let us take the Northern States Power situation up in Minnesota where you have people around trying to exercise duties that the AEC claims to have been given exclusively under the Atomic Energy Act: Whoever these State people are, could you move in on them with this kind of legislation?

Mr. HENNESSEY. I don't think we could, Mr. Hosmer, either under our bill or under Senator Pastore's bill.

I don't consider that the actions they are taking are violations of any of the sections cited in the two bills.

Representative HOSMER. In such a case as I have hypothesized here, let us assume that the utility which finds itself aggrieved decided to go into the State court and into the Federal court and sue the State that was aggrieving it: Would you be inclined to recommend that the U.S. Government file an amicus curiae brief and get busy in the matter?

Mr. HENNESSEY. It is certainly a matter of primary importance to the Commission that the position established by the Congress in enacting the Atomic Energy Act as to the exclusivity of AEC's authority to regulate nuclear facilities from the standpoint of radiological effect be upheld.

We have a very definite interest in the lawsuit. What the nature of the Government's participation, if any, in the lawsuit will be has not been determined yet.

Representative HOSMER. Who are the powers that make such a determination?

Mr. HENNESSEY. In the final analysis, you come down to the Justice Department which has responsibility to represent all Government agencies as their attorney in matters of litigation.

Representative HOSMER. I suppose as the client then, the AEC would have to go to the Justice Department?

Mr. HENNESSEY. That is right.

Representative HOSMER. So that, there is somewhere in the AEC some decisionmaking or recommendation power in this regard. Would that be in the general manager's office, for instance, or where?

Mr. HOLLINGSWORTH. This is a regulatory matter, Mr. Hosmer; certainly not mine.

Representative HOSMER. It is a matter of interference.

Mr. HENNESSEY. This matter is of sufficient importance that the Commissioners would be interested in it and we, of course, don't have full information yet. The defendant still has a couple of weeks to file his answer, so we don't have the whole story. In fact, we don't even know what the papers look like in the State court action.

Representative HOSMER. You know that law cases usually move slowly. Do you think we will have the Commission back together here again before this one gets over and they have a chance to make up their minds on it?

Mr. HENNESSEY. We don't have any time limit even for intervention. Of course, if the Government were to adopt the posture of amicus curiae, that could be done at any time along the course of the proceeding.

Representative HOSMER. Can you tell us whether you think the Commission will make a timely decision in this instance?

Mr. HENNESSEY. I am sure there will be a timely decision as to the Government's participation.

Representative HOSMER. Like some time next week?

Mr. HENNESSEY. At a very early date. We have commenced discussions already with the Department of Justice.

Representative HOSMER. Thank you.

Chairman HOLIFIELD. Are there further questions, Mr. England?

FORMER JEOPARDY

Mr. ENGLAND. I have just one, Mr. Holifield.

On page 18, Mr. Hennessey, with respect to the "former jeopardy" criticism you mentioned concerning S. 1878, if a provision along the lines you quoted is not included in the bill to make it clear that a civil penalty would be in addition to other possible sanctions, isn't it possible that a person who was penalized under the civil penalties section of the act—the proposed new section of the act—could successfully argue

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.

U.S. Atomic Energy Commission,
Washington, D.C., October 9, 1969.

Mr. Edward J. Bauser,
Executive Director, Joint Committee on Atomic Energy,
Congress of the United States.

Dear Mr. Bauser: This is in response to your letter of September 18, 1969, forwarding additional questions concerning the 1969 Omnibus Bill.

The questions with our answers are enclosed.

Sincerely yours,

Joseph F. Hennessey,
General Counsel.

Enclosure: Questions and answers re compulsory licensing and civil penalties.

A. Compulsory Patent Licensing

Q. 1. The Arthur D. Little Report of December 1968, indicates at page 157 that patent licensing on an inexpensive basis is available in the industry. If this is true, why is there any need for an extension of Section 153?

A. The statement at page 157 of the Arthur D. Little Report of December 1968, has reference to the "heavy electrical industry" and that industry's policy of according "inexpensive cross-licensing" of developments. It should be noted that the Arthur D. Little Report refers to cross-licensing of the respective developments. The report does not address the practice followed when a company has no patents to license.

Furthermore, the statement was made in respect of the "heavy electrical industry". Section 153 is to apply to the atomic energy field across the board. We have no evidence that inexpensive cross-licensing is the general practice in the mechanical, chemical or even general electrical industry.

It is, of course, recognized that some of the larger corporations in the U.S. have a policy of according nonexclusive licenses for royalties to responsible private parties. However, neither such policy nor the policy of the heavy electrical industry discussed by Arthur D. Little, Inc., can be stated to be the general rule in the manufacturing, electrical, or chemical industries.

Q. 2. Is there anything analogous to this compulsory patent licensing authority in other fields? Why should we continue to single out atomic energy for special treatment?

A. We are not aware that there is anything analogous to the compulsory patent licensing authority in other fields in the United States. Compulsory patent licensing is common in foreign countries. In the field of pharmaceuticals, Representative Halpern introduced H.R. 7984 in the 91st Congress to amend the patent laws to provide for compulsory licensing of prescription drug patents under certain circumstances.

The initial basis for singling out the atomic energy industry was to have a broad industrial base for atomic energy subject matter, and, as stated in the testimony presented on September 12, certain areas of atomic energy technology are just emerging and could produce a narrow or very limited industrial base. Examples are Fast Breeder Reactors, peaceful uses of nuclear explosives, controlled thermonuclear devices, medical uses of atomic energy, and space nuclear systems. Therefore, in order to preserve a truly broad industrial base in these areas, as well as other areas of atomic energy activity, the continuance of compulsory licensing would appear justifiable.

Q. 3. Is there any legislation now pending in Congress which, if enacted, would tend to defeat the action of the Joint Committee in extending Section 153?

A. There is no legislation pending in this Session of Congress that has been referred to the AEC for comment or of which AEC is aware which would tend to defeat the action of the Joint Committee in extending Section 153.

B. Civil Penalties

Q. 1. The AEC's civil penalties bill (H.R. 9648) covers fewer sections of the Atomic Energy Act than Senator Pastore's bill (S. 1878) and appears to be limited to violations of licensing requirements concerning the use of source, byproduct or special nuclear material. Senator Pastore's bill, on the other hand, includes other matters as well, such as violations of regulations for the safeguarding of Restricted Data. Which bill do you prefer in this regard, and why?

A. As stated in our testimony at the hearing on September 12, 1969, our preference is for the bill as set forth in H.R. 9648 (S. 1882). The basis for our position

is that the Department of Justice believes that the danger of former jeopardy would be lessened if the power to impose penalties were limited to violations by licensees of AEC rules and regulations and of conditions of their licenses. On the other hand, we have no objection to extending the coverage of the civil penalties to all licensing violations.

Q. 2. Neither of the civil penalty proposals appears to require an AEC hearing, or an opportunity for hearing, before such a penalty can be imposed; is that correct? Do you believe this comports with due process requirements?

We believe that the civil penalty legislation as proposed in both H.R. 9648 and S. 1878 comports with due process with respect to the absence of hearing requirements. As previously stated, our proposed legislation was based upon the civil penalty provisions in the Federal Aviation Act and the Federal Communications Act.[1] Other regulatory agencies have similar statutes. Under this legislation an alleged violator's guarantee of hearing is provided in Federal district courts. As we stated in our testimony, however, the Commission would follow the procedures set forth in our "Rules of Practice" to provide any person charged with violations an opportunity to show that he did not commit the violations or that they were committed under mitigating circumstances. We would also offer him the opportunity to request a full administrative hearing before the Commission prior to a determination that a civil penalty should be imposed.

Q. 3. Instead of court litigation as provided for under these bills, why wouldn't it be preferable to have AEC conduct the entire proceedings within the Commission on an administrative basis subject to the requirements of the Atomic Energy and Administrative Procedures Acts? Wouldn't this be fairer to and less expensive for the alleged offender, who could still appeal an adverse decision to the courts?

A. We do not believe that conducting the entire matter before the AEC would necessarily be fairer or less expensive. We initially considered the approach of having the entire civil penalties proceedings take place before the AEC, including a full administrative hearing before the Commission and the right of the alleged offender to contest the Commission's actions by appeal to a United States Court of Appeal. As we understand it, no agency has been given this type of authority because this would tend to cut off a judicial trial *de novo* of a "penalty" action.[2] A case involving formal regulatory action imposes approximately the same financial burden upon the alleged offender, quite aside from the penalty itself, if levied. While the offender may appear *pro se* in a formal hearing before the Commission and in Federal court, our experience has been that persons faced with such hearings before the Commission normally have been represented by counsel. Other expenses involve the loss of time, travel, and other expenses incident to litigation.

Finally it is not our purpose to seek novel statutory authority, which would tend to create court tests as to its validity. We seek only the same authority as that provided to other Federal regulatory agencies.

Q. 4. You testified that it is important to emphasize that the proposed legislation is remedial in nature and not punitive. Do you believe the Commission's proposal to have the U.S. Attorney initiate formal court proceedings, rather than confining the matter to AEC administrative proceedings, is consistent with this view?

A. As stated above, the concept of referring civil penalties to the U.S. Attorney for formal court proceedings for enforcement is the approach commonly followed for the imposition of civil penalties in the Federal jurisdiction. We do not believe that referral of the matter to the Department of Justice and to the Federal courts causes the imposition of civil penalties to be more "punitive" than "remedial." It should also be emphasized that the proposed statute provides for informal disposition or compromise of the penalty by the Attorney General, as well as by the Commission.

Q. 5. You indicate in your testimony that a maximum civil penalty of $10,000 is provided in the AEC bill for continuing violations.

(a) Under the terms of the bill (H.R. 9648) would that be $10,000 per month?

A. Yes. As stated in the bill, the penalty for continuing violations shall not exceed $10,000 for violations occurring within any period of 30 consecutive days.

(b) When is a violation deemed to have "occurred" for purposes of computing the 30-day period used to determine the maximum penalty?

A. The computation of a 30-day period would necessarily depend upon the circumstances of the violation. For example, in a case where a licensee was not aware

[1] 49 U.S.C. 1471; 47 U.S.C. 503, 504.

[2] The Department of Agriculture, under the authority of 7 U.S.C. 207, 210 in administering the stockyard services provision of the "Packers and Stockyards Act, 1921," as part of a complex procedure, conducts a hearing before the agency. However, the statute also provides that enforcement must be made by a state court of record or a Federal court.

of the violation until brought to its attention by the Commission, the computation of the 30-day period would begin at that time or after the time allowed the licensee for corrective action. On the other hand, if the evidence showed that a licensee had knowingly permitted violations to continue, he would be subject to the penalty for each consecutive 30-day period from the date the licensee first knew of the violations. On the other hand, a violation need not continue for a *total* of 30 consecutive days to be subject to the $10,000 penalty. The 30-day period merely limits the number of times in which the penalty may be imposed to 30-day increments.

(c) Please provide some examples of what might constitute a "violation" of rules and regulations which the Commission contemplates would lead to imposition of a monetary penalty. What type of violation does the Commission seek to reach with this new authority?

A. As previously stated, we believe civil penalties would be an effective deterrent, where more than a reprimand or cease and desist order is needed, in cases in which a sanction is needed without depriving a licensee or his employees of their means of livelihood and without requiring the cessation of an activity which might be of material benefit to the public. Another type of case in which a civil penalty might be particularly effective is one in which a licensee fails to remove contamination in a reasonable period of time and maintain precautions to prevent possible exposure of persons to radiation. Another situation would be one in which an applicant has repeated violations of licensing requirements in which suspension or revocation is not required. We wish to emphasize, however, that the most effective remedy to employ will depend upon the facts in a particular case and the use of civil penalties would not be restricted to specific types of violations.

Q. 6. Does this proposed bill provide for penalties in sufficiently large amounts to be effective deterrents to licensees which are large corporations as well as to individuals?

A. We believe that the proposed bill does provide sufficiently large civil penalties to be effective deterrents to our licensees. The bill provides for a penalty of $5,000 for each violation, and, in the case of continuing violations, $10,000 for violations occurring within any period of 30 consecutive days. We believe that these amounts are adequate for even the largest utility or manufacturing company. On the other hand, we would not expect to impose penalties in the full amount against licensees such as individual radiographers or educational institutions upon whom the imposition of a smaller civil penalty would have the same deterrent effect because of their lesser financial resources.

In addition, it has been our experience that in cases where we have found a violation for which enforcement action should be instituted, the licensee is usually guilty of several violations. In this event the amount of penalty could be multiplied by the number of violations.

Q. 7. What procedures will the AEC adopt in its regulations to carry out the statutory authority to impose civil penalties?

A. If we are granted the statutory authority to impose civil penalties, we plan to add to our "Rules of Practice," Title 10, Code of Federal Regulations, Part 2, procedures similar to those outlined in my prepared statement which are also similar to those adopted by the Federal Communications Commission. The FCC rules are set forth in 47 CFR § 1621, "Forfeitures relating to broadcast licenses and permittees."

Essentially, they provide for a notice stating the pertinent facts and advising the person that he may (1) admit liability, (2) show in writing why he should not be held liable, and (3) admit liability but show reasons why the amount of forfeiture is excessive. After consideration of the reply, an order declaring nonliability or establishing the amount of the forfeiture is issued. If the licensee does not choose to pay the amount, he may file an application for mitigation or remission in writing. If the matter is not settled through this means, it is referred to the Attorney General for appropriate civil action.

As outlined in our testimony, we would provide notice to an alleged offender following the existing noticing provisions of our "Rules of Practice." This notice would specify the violations alleged and the amount of the proposed civil penalty. It would provide him a reasonable opportunity to show that he has not committed the violations charged or that such violations took place under mitigating circumstances. He would be offered an opportunity for a formal hearing before the Commission. The notice would also provide that in the event a civil penalty is levied and not paid, the matter may be referred to the Department of Justice.

In the event a hearing is requested before the Coimmssion, a notice of hearing, in accordance with the existing procedures in our "Rules of Practice," would be ordered by the Commission and conducted before an AEC hearing examiner.

The examiner's decision would be subject to review by the Commission upon the filing of exceptions or upon its own motion, as in our enforcement cases.

Q. 8. How will the amounts of civil penalties be determined?

A. As noted above the purpose of imposing civil penalties is remedial to deter persons from violating licensing provisions of the Act and terms and conditions of licenses. In determining the amount of a suitable penalty, we would consider the nature and number of the violations, the steps taken by the applicant to correct them prior to discovery by the inspector, and the overall scope of the licensee's operations under the license to determine that it will, in fact, have a deterrent effect. Accordingly, it will be necessary to determine on an *ad hoc* basis the extent of the civil penalty. As we develop experience, it may be desirable to issue specific regulations on the subject.

APPENDIXES

APPENDIX 1

STATEMENT BY WASHINGTON OFFICE OF THE AMERICAN CIVIL LIBERTIES UNION

AMERICAN CIVIL LIBERTIES UNION,
Washington, D.C., September 16, 1969.

MEMORANDUM

To: Joint Committee on Atomic Energy.
From: Lawrence Speiser, Director, Washington Office, American Civil Liberties Union.
Re H.R. 9644, to amend the Atomic Energy Act of 1954 to provide that life imprisonment shall be the maximum criminal penalty for certain offenses and for other purposes.

The American Civil Liberties Union strongly supports provisions in H.R. 9644 which would eliminate the death penalty for offenses under the Atomic Energy Act of 1954. These provisions will not only correct the clear constitutional infirmities of the present law, but also recognize and promote the continued trend toward complete abolition of the death penalty from our criminal justice system.

The Atomic Energy Act of 1954 now provides that for violations of §§ 222, 224(a), 225 and 226, with intent to injure the United States or secure an advantage to any foreign power, the maximum criminal penalty shall be,

". . . death or imprisonment for life (but, the penalty of death or imprisonment for life may be imposed only upon recommendation of the jury."

The following offenses are included: unlawful communication, acquisition, removal, concealment or tampering with Restricted Data (§§ 224(a), 225, and 226); unlawful interference with the Commission's recapture of special nuclear material; unlawful interference with entry into any plant or facility; unlawful possession of or dealing in special nuclear material without a general or specific license; and the unauthorized possession, manufacture, or transfer of an atomic weapon (§ 222). H.R. 9644 would, among other things, amend the law so that in each case, imprisonment for life would be the maximum penalty without regard to a jury recommendation.

These amendments are both necessary and desirable.

In our view, both the death penalty and life imprisonment provisions of present law are unconstitutional and, hence, unenforceable. In *United States* v. *Jackson*, 390 U.S. 570 (1968) the Supreme Court invalidated that section of the Federal Kidnapping Act (18 U.S.C. § 1201(a)), which provided that a defendant convicted under the Act

". . . shall be punished (1) by death if the kidnapped person has not been liberated unharmed, and *if the verdict of the jury shall so recommend.*" (emphasis added)

The Court held that since the statute authorized the death penalty only on the recommendation of the jury, and not if the case were tried by a judge or a guilty plea entered, it imposed an impermissible burden on the exercise of the Fifth Amendment right not to plead guilty and the Sixth Amendment right to demand a jury trial.

The *Jackson* decision is directly applicable to both the death and life imprisonment provisions of the Atomic Energy Act. Neither penalty can be imposed except on the recommendation of the jury. Thus where a defendant is tried by the Court alone or chooses to enter a guilty plea, the maximum punishment which can be imposed is the statutory fine ($10,000 or $20,000) and/or imprisonment for a specific (10–20) number of years. As in the Federal Kidnapping Act, this scheme

subjects a defendant who chooses to assert his right to a jury trial to the hazard of increased punishment. In light of *Jackson*, then, a defendant tried and convicted by a jury for an offense under the Atomic Energy Act could not constitutionally be given either a life sentence or the death penalty regardless of the jury's recommendation. Thus the proposed amendments are necessary to eliminate in fact from the statute the unconstitutional provisions already eliminated in effect therefrom by the decisional law, and restore life imprisonment as the maximum penalty for violations under the Act.

The Atomic Energy Commission has endorsed these proposed changes, concluding, in the words of Congressman Holifield, "that the death penalty may properly be deleted and that a maximum penalty of life imprisonment is sufficiently severe, in view of the trend of opinion away from the use of capital punishment, doubt whether the death penalty serves as a substantial deterrent, the very small number of executions for any crimes in the United States during the past decade, and the views of some legal scholars and penologists that capital punishment has a harmful effect upon the administration of justice." In this the ACLU heartily concurs.

The ACLU opposes all capital punishment on three constitutional grounds: (1) that it is a denial of equal protection of the laws; (2) that due process is frequently denied by the existence of the death penalty; and (3) that the death penalty is cruel and unusual punishment.

The first of these grounds—denial of equal protection—is evident from the most cursory examination of death penalty statistics, by any statistical reckoning. The death penalty is the special privilege of the poor, the friendless and the Negro. In Pennsylvania, to pick an example at random, those who cannot afford their own legal counsel have been executed in the ratio of 4 to 1 compared with those who can afford private counsel.

The statistics about Negro executions are even more compelling. Since 1930, 53.7% of those executed have been Negroes, who represent 10% of our population. In Ohio in one year, 1958–1959, 78% of the Negroes convicted of murder were executed, while only 51% of the whites convicted received the ultimate penalty. Eighteen states impose the death penalty for rape. In a 14 year period, 444 persons were executed in these states for rape. Of this total 399 were Negro and 2 were Indian. No white man has ever been executed for raping a Negro woman. Six states have executed only *Negro* defendants.

The second ground—denial of due process—permeates the conduct of capital cases. Defendants are frequently coerced into pleading guilty and waiving jury trials because of the threat that they will be executed if they do not. Prosecutors commonly press for a capital charge in order to get a conviction minded jury, reducing the charge only when they are assured a jury in favor of capital punishment and thus more likely to be harsh in sentencing. And, of course, the ultimate denial of due process is the cutting short of the post-conviction appeal process by the execution of the defendant. There is no way to rectify error once that happens.

Finally, the concept that capital punishment is cruel and unusual punishment has been proven from many points of view. Our prison chaplains, correctional officials and psychologists have eloquently described the mental torture of the victim awaiting death for months, sometimes for years. They have clinically described the aberrations, the withdrawal from life, the regression into infantilism that frequently accompanies the stay on death row, the prisoner suspended between false hopes and black despair. The torture of the execution itself turns its victims into a writhing mass of pain.

But more than this, capital punishment takes a cruel toll of the collective conscience of all Americans. Having been taught to reverence life, we are forced to be collaborators in official killings. By themselves, these three points loom large with any thoughtful American. What makes them decisive is that there is no counterbalance of social utility or wisdom to bolster the position in favor of retaining the death penalty.

The chief argument of death penalty proponents is that it deters crime but there is not a scintilla of evidence to support it. Every single study done proves that the death penalty does not have the slightest effect on lowering the crime rate. In fact, the violence of the death penalty seems to march hand in hand with the violence of murder. Thus, Georgia, which has executed more prisoners than any other state also has the highest murder rate.

This point has special force with regard to H.R. 9644. The kind of Atomic Energy Act crimes which are at issue here are not likely to be committed solely for private gain by one calculating the benefits and risks. Rather they are likely to be prompted by a "fanatic" desire to aid an enemy or injure the United States.

The death penalty as a deterrent would be singularly ineffective against such fanaticism.

More and more, the American people have rejected the death penalty as a solution to crime. Only five years ago, when the American Civil Liberties Union adopted its position opposing capital punishment, we were one of a handful of organizations opposed—a small current against a tide of public opinion. Today, that tide has turned and is rising steadily and irreversibly. The Gallup Poll shows that only 4 out of 10 Americans now favor keeping the death penalty. Legislation has been introduced in both Houses of Congress reflective of this trend in opinion, proposing nationwide abolition of the death penalty. The Senate bill, S. 2301, was introduced by Senator Hart and 10 cosponsors representing both sides of the aisle.

In addition, the judicial system is recognizing the validity of the constitutional arguments against the death penalty. In *Witherspoon* v. *Illinois*, 391 U.S. 510 (1968) the Supreme Court ruled that since the majority of Americans are now opposed to the death penalty, it was a denial of an impartial jury to exclude those with scruples against capital punishment from serving on juries in capital cases. Scheduled for argument before the Court when it convenes in October is *Maxwell* v. *Bishop*, involving a challenge to the constitutionality of the Arkansas death penalty procedures, which could spell the end of capital punishment throughout the United States.

While the trend is clear in both public opinion and judicial decision we need not focus, alone, on total abolition. Where as here, there is a need for revision of the penalty provisions of a specific statute, that revision can and should recognize and support this trend. At every opportunity, Congress representing the American people should give leadership and voice in their desire to have this medieval practice abolished as it is in every other Western democracy. Passage of H.R. 9644 would be another important step toward this goal. That, in turn, will be a giant step toward the day when we can mete out rehabilitation to criminals, not revenge; treat social disorders from their root causes, not by repression; and make the phrase "Equal Justice Under Law" a reality.

Appendix 2

Joint Committee on Atomic Energy Press Release Dated September 8, 1969, Announcing Hearings on "Omnibus" Legislation

Legislation Dealing With Penal Provisions, Civil Penalties and Compulsory Patent Licensing

Chairman Chet Holifield of the Joint Committee on Atomic Energy today announced that the Committee has scheduled a hearing on several pieces of proposed legislation for 2:00 p.m., Friday, September 12. Representatives of the Atomic Energy Commission will testify. The hearings will be held in the Joint Committee's public hearing room (S–407, Capitol Building).

The bills to be considered are summarized below. All would amend the Atomic Energy Act of 1954, as amended.

H.R. 12697 (introduced by Representatives Holifield and Price, by request, July 9, 1969)—To extend AEC's compulsory patent licensing authority to September 1, 1974.

S. 1878 (introduced by Mr. Pastore on April 18, 1969 and identical to S. 3958 introduced by Mr. Pastore in the 90th Congress on August 1, 1968)—To amend Sections 222, 224a., 225 and 226 to delete the capital punishment penalty and the requirement for a specific recommendation by the jury before the maximum penalty prescribed may be imposed on an offender (the life imprisonment penalty presently provided in these sections would be retained); to amend Section 222 to increase the criminal penalties which could be imposed for unauthorized diversion of special nuclear material, and for certain related offenses; and to confer on the AEC authority to impose civil monetary penalties in addition to the AEC's present authority to modify, suspend or revoke a license for violations of health and safety regulatory requirements.

H.R. 9644 (introduced by Representative Holifield, by request, March 27, 1969) and *S. 1879* (Mr. Pastore, by request, April 18, 1969)—To delete the reference in certain sections to the death penalty and to the requirement that life imprisonment or the death penalty can be imposed only on the recommendation of a jury, and to substitute the maximum penalty of life imprisonment without

reference to a recommendation of the jury; and to increase the criminal penalties for unauthorized diversion of special nuclear material and related offenses.

H.R. 9648 (introduced by Representative Holifield, by request, March 27, 1969) and *S. 1822* (Mr. Pastore, by request, April 18, 1969)—To authorize the AEC to levy civil monetary penalties for violations of regulations, orders, and license conditions by licensees.

It is planned to consolidate the contents of the preceding bills into an Omnibus bill in order to expedite the legislative program.

Those desiring to submit statements to the Committee on these matters are asked to send them in before September 26, 1969.

Appendix 3

AEC Letter Dated January 10, 1969, Transmitting Proposed Legislation To Provide That Life Imprisonment Shall Be Maximum Criminal Penalty for Certain Offenses, and To Increase the Criminal Penalties for Unauthorized Diversion of Special Nuclear Material and Related Offenses (H.R. 9644, S. 1879).

U.S. Atomic Energy Commission,
Washington, D.C., January 10, 1969.

Hon. John O. Pastore,
Chairman, Joint Committee on Atomic Energy,
Congress of the United States.

Dear Senator Pastore: I am enclosing a copy of proposed legislation which is being transmitted today to the Speaker of the House of Representatives and the President of the Senate which would amend the Atomic Energy Act of 1954, as amended, to provide that life imprisonment shall be the maximum criminal penalty for certain offenses, and to increase the criminal penalties for unauthorized diversion of special nuclear material and related offenses.

Cordially,

Glenn T. Seaborg,
Chairma .

U.S. Atomic Energy Commission,
Washington, D.C., January 10, 1969.

Hon. Hubert H. Humphrey,
President of the Senate.

Dear Mr. President: Transmitted herewith is a Commission proposal in the form of a draft bill "To amend the Atomic Energy Act of 1954, as amended, to provide that life imprisonment shall be the maximum criminal penalty for certain offenses, to increase the criminal penalties for unauthorized diversion of special nuclear material and related offenses, and for other purposes." Appendix "A" is the text of the draft bill. Appendix "B" is an analysis of the draft bill. Appendix "C" is a comparative presentation of the draft bill.

Sections 1 through 4 of the proposed legislation would amend Sections 222, 224 a., 225, and 226 of the Atomic Energy Act by deleting the reference to the death penalty and to the requirement that life imprisonment or the death penalty could be imposed only on the recommendation of the jury, and substituting the maximum penalty of life imprisonment without reference to a recommendation of the jury.

Section 1 would also amend Section 222 of the Act to increase the maximum criminal penalties for unauthorized diversion of special nuclear material and related offenses to imprisonment for ten years and a fine of $10,000, when the offense is committed without the intent to injure the United States or secure an advantage to any foreign nation. The present maximum penalties are imprisonment for five years and a fine of $10,000.

The proposed amendments of the Atomic Energy Act would have no budgetary effect. Enactment is not expected to result in additional man-years of employment during the first five years following its passage.

The Bureau of the Budget has advised us in December 1968 that there would be no objection to our submission of the proposed legislation to the Congress.

Cordially,

Glenn T. Seaborg,
Chairman.

APPENDIX "A"

A BILL To amend the Atomic Energy Act of 1954, as amended, to provide that life imprisonment shall be the maximum criminal penalty for certain offenses, to increase the criminal penalties for unauthorized diversion of special nuclear material and related offenses, and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Atomic Energy Act of 1954, as amended, is hereby further amended as follows:

SEC. 1. Section 222 is amended by striking "five" and "by death or imprisonment for life (but the penalty of death or imprisonment for life may be imposed only upon recommendation of the jury), or by a fine of not more than $20,000 or by imprisonment for not more than twenty years, or both", and inserting in lieu thereof "ten" and "by imprisonment for any term of years or for life, or by a fine of not more than $20,000, or both", respectively.

SEC. 2. Subsection a. of Section 224 is amended by striking "by death or imprisonment for life (but the penalty of death or imprisonment for life may be imposed only upon recommendation of the jury), or by a fine of not more than $20,000 or by imprisonment for not more than twenty years, or both", and inserting in lieu thereof "by imprisonment for any term of years or for life, or by a fine of not more than $20,000, or both".

SEC. 3. Section 225 is amended by striking "by death or imprisonment for life (but the penalty of death or imprisonment for life may be imposed only upon recommendation of the jury), or by a fine of not more than $20,000 or by imprisonment for not more than twenty years, or both", and inserting in lieu thereof "by imprisonment for any term of years or for life, or by a fine of not more than $20,000, or both".

SEC. 4. Section 226 is amended by striking "by death or imprisonment for life (but the penalty of death or imprisonment for life may be imposed only upon recommendation of the jury), or by a fine of not more than $20,000 or by imprisonment for not more than twenty years, or both", and inserting in lieu thereof "by imprisonment for any term of years or for life, or by a fine of not more than $20,000, or both".

APPENDIX "B"

ANALYSIS OF DRAFT BILL

Sections 1 through 4 of the proposed legislation would restore life imprisonmen as the maximum criminal penalty for violations of Sections 222, 224 a., 225, and 226 of the Atomic Energy Act of 1954. Section 1 would also amend Section 222 of the Act to increase the maximum criminal penalties for unauthorized diversion of special nuclear material and related offenses to imprisonment for ten years and a fine of $10,000, when the offense is committed without the intent to injure the United States or secure an advantage to any foreign nation.

Section 222 of the Atomic Energy Act provides criminal sanctions for violations of Sections 57, 92, and 101 and for unlawful interference with the Commission's recapture of special nuclear material or entry into any plant or facility under Section 108. Section 57 prohibits possession of or dealing in special nuclear material without a general or specific license issued by the Commission. Under section 92, the unauthorized possession, manufacture or transfer of an atomic weapon is unalwful. Section 101 requires a Commission license for the possession, manufacture or transfer of a production or utilization facility. Section 108 authorizes the Commission, when a state of war or national emergency exists, to order the recapture of special nuclear material or the operation of any licensed facility and to enter any plant or facility to carry out these orders.

In the absence of intent to injure the United States or secure an advantage to any foreign nation, the maximum penalty for a violation of Section 222 is imprisonment for five years and a fine of $10,000. With such an intent, the penalty is death or imprisonment for life (if recommended by a jury) or a fine of not more than $20,000 or imprisonment for not more than 20 years, or both.

Sections 224 a., 225, and 226 of the Atomic Energy Act provide criminal penalties, respectively, for the unlawful communication of Restricted Data, the unlawful acquisition of Restricted Data, and removal or concealment of or tampering with Restricted Data. With intent to injure the United States or to secure an advantage to any foreign nation, the penalty for violation of each of these sections is death or imprisonment for life (if recommended by a jury) or a fine of not more than $20,000 or imprisonment for not more than 20 years, or both.

On April 8, 1968, the United States Supreme Court, in the case of *United States* v. *Jackson*, 390 U.S. 570, held unconstitutional the death penalty provision of the Federal Kidnaping Act. Because the language of the Kidnaping Act is comparable to the death and life imprisonment penalty provisions of Sections 222, 224 a., 225, and 226 of the Act, it is believed that these provisions might be subject to a similar constitutional attack. The maximum penalties which may now be imposed therefore appear to be imprisonment for 20 years and a fine of $20,000.

It is proposed that life imprisonment be made the maximum penalty for violating each of these sections, without regard to a jury recommendation. The Commission has concluded that the death penalty may properly be deleted and that a maximum penalty of life imprisonment is sufficiently severe, in view of the trend of opinion away from the use of capital punishment, doubt whether the death penalty serves as a substantial deterrent, the very small number of executions for any crimes in the United States during the past decade, and the views of some legal scholars and penologists that capital punishment has a harmful effect upon the administration of justice.

One of the most significant crimes punishable under Section 222 is unauthorized diversion of special nuclear material, which is a violation of Section 57. An unauthorized diversion by a thief or even a terrorist, insurrectionist or criminal group might conceivably be found to lack intent to injure the United States or secure an advantage to any foreign nation. An Ad Hoc Advisory Panel on Safeguarding Special Nuclear Material recently recommended that the maximum penalty for diversion lacking the specific intent be increased. The Panel felt that the existing penalties "may not be a sufficient deterrent to illicit transactions involving materials valued in excess of millions of dollars."

An increase in the maximum penalties for a violation of Section 222 to imprisonment for ten years and a fine of $10,000 would perhaps increase the deterrent effect on a potential diverter. The increased penalties would also be comparable to those for crimes of similar gravity, such as theft of Government property (ten years' imprisonment and a $10,000 fine) and theft of property in interstate or foreign commerce (ten years' imprisonment and a $5,000 fine). No increase in the maximum fine is proposed. Because of the intrinsic value of special nuclear material, imprisonment would seem to be a more suitable deterrent than a fine.

The proposed amendments would have no budgetary effect. Enactment is not expected to result in additional man-years of employment during the first five years following its passage.

APPENDIX "C"

COMPARATIVE DRAFT, ATOMIC ENERGY ACT OF 1954, AS AMENDED

"SEC. 222. VIOLATION OF SPECIFIC SECTIONS.—Whoever willfully violates, attempts to violate, or conspires to violate, any provision of sections 57, 92, or 101, or whoever unlawfully interferes, attempts to interfere, or conspires to interfere with any recapture or entry under section 108, shall, upon conviction thereof, be punished by a fine of not more than $10,000 or by imprisonment for not more than [five] *ten* years, or both, except that whoever commits such an offense with intent to injure the United States or with intent to secure an advantage to any foreign nation shall, upon conviction thereof, be punished [by death or imprisonment for life (but the penalty of death or imprisonment for life may be imposed only upon recommendation of the jury), or by a fine of not more than $20,000 or by imprisonment for not more than twenty years, or both] *by imprisonment for any term of years or for life, or a fine of not more than $20,000, or both.*"

"SEC. 224. COMMUNICATION OF RESTRICTED DATA.—Whoever, lawfully or unlawfully, having possession of, access to, control over, or being entrusted with any document, writing, sketch, photograph, plan, model, instrument, appliance, note, or information involving or incorporating Restricted Data—

"a. communicates, transmits, or discloses the same to any individual or person, or attempts or conspires to do any of the foregoing, with intent to injure the United States or with intent to secure an advantage to any foreign nation, upon conviction thereof, shall be punished [by death or imprisonment for life (but the penalty of death or imprisonment for life may be imposed only upon recommendation of the jury), or by a fine of not more than $20,000 or imprisonment for not more than twenty years, or both] *by imprisonment for any term of years or for life, or a fine of not more than $20,000, or both;*"

* * * * * * *

"SEC. 225. RECEIPT OF RESTRICTED DATA.—Whoever, with intent to injure the United States or with intent to secure an advantage to any foreign nation, acquires, or attempts or conspires to acquire any document, writing, sketch, photograph, plan, model, instrument, appliance, note, or information involving or incorporating Restricted Data shall, upon conviction thereof, be punished [by death or imprisonment for life (but the penalty of death or imprisonment for life may be imposed only upon recommendation of the jury), or by a fine of not more than $20,000 or imprisonment for not more than twenty years, or both] *by imprisonment for any term of years or for life, or a fine of not more than $20,000, or both.*

"SEC. 226. TAMPERING WITH RESTRICTED DATA.—Whoever, with intent to injure the United States or with intent to secure an advantage to any foreign nation, removes, conceals, tampers with, alters, mutilates, or destroys any document, writing, sketch, photograph, plan, model, instrument, appliance, or note involving or incorporating Restricted Data and used by any individual or person in connection with the production of special nuclear material, or research or development relating to atomic energy, conducted by the United States, or financed in whole or in part by Federal funds, or conducted with the aid of special nuclear material, shall be punished [by death or imprisonment for life (but the penalty of death or imprisonment for life may be imposed only upon recommendation of the jury), or by a fine of not more than $20,000 or imprisonment for not more than twenty years, or both] *by imprisonment for any term of years or for life, or a fine of not more than $20,000, or both.*"

U.S. ATOMIC ENERGY COMMISSION,
Washington, D.C., January 10, 1969.

Hon. JOHN W. MCCORMACK,
Speaker of the House of Representatives.

DEAR MR. SPEAKER: Transmitted herewith is a Commission proposal in the form of a draft bill "To amend the Atomic Energy Act of 1954, as amended, to provide that life imprisonment shall be the maximum criminal penalty for certain offenses, to increase the criminal penalties for unauthorized diversion of special nuclear material and related offenses, and for other purposes." Appendix "A" is the text of the draft bill. Appendix "B" is an analysis of the draft bill. Appendix "C" is a comparative presentation of the draft bill.

Sections 1 through 4 of the proposed legislation would amend Sections 222, 224a., 225, and 226 of the Atomic Energy Act by deleting the reference to the death penalty and to the requirement that life imprisonment or the death penalty could be imposed only on the recommendation of the jury, and substituting the maximum penalty of life imprisonment without reference to a recommendation of the jury.

Section 1 would also amend Section 222 of the Act to increase the maximum criminal penalties for unauthorized diversion of special nuclear material and related offenses to imprisonment for ten years and a fine of $10,000, when the offense is committed without the intent to injure the United States or secure an advantage to any foreign nation. The present maximum penalties are imprisonment for five years and a fine of $10,000.

The proposed amendments of the Atomic Energy Act would have no budgetary effect. Enactment is not expected to result in additional man-years of employment during the first five years following its passage. The Bureau of the Budget has advised us in December 1968 that there would be no objection to our submission of the proposed legislation to the Congress.

Cordially,

GLENN T. SEABORG,
Chairman.

Appendix 4

AEC Letter Dated January 17, 1969, Transmitting Proposed Legislation to Authorize AEC to Levy Civil Monetary Penalties for Violations of Regulations, Orders, and License Conditions by Licensees (H.R. 9648, S. 1822)

U.S. Atomic Energy Commission,
Washington, D.C., January 17, 1969.

Hon. John O. Pastore,
Chairman, Joint Committee on Atomic Energy,
Congress of the United States.

Dear Senatore Pastore: Enclosed is a copy of proposed legislation which is being transmitted today to the President of the Senate and the Speaker of the House of Representatives. The legislation would amend the Atomic Energy Act of 1954, as amended, by adding a new section which would authorize the Commission to levy civil monetary penalties for violations of regulations, orders and license conditions by licensees. It would also clarify Section 221 c. of the Act by providing that this section does not require the approval of the Attorney General prior to the initiation of administrative action by the Commission not only with respect to the imposition of civil penalties, but also for any other enforcement action the Commission is now authorized to bring.

Specifically, the proposed legislation would amend the Atomic Energy Act by adding thereto a new Section 234 entitled "Civil Monetary Penalties for Violations of Licensing Requirements." This section would authorize the Commission to impose fines not to exceed $5,000 for each single violation and not to exceed $10,000 for continuing violations by any person licensed pursuant to Sections 53, 62, 81, or 101 of the Act, of the regulations, orders, or conditions of licenses issued thereunder. Under this proposal, if an offender failed to pay the matter would be referred to the Attorney General who would be authorized to bring civil action in a court of competent jurisdiction.

The same remedial authority has been conferred by statute upon other regulatory agencies, such as the Federal Communication Commission and Federal Aviation Agency, to assist them in carrying out their regulatory functions. The proposed legislation is modeled upon similar provisions in the Federal Communications Act (47 U.S.C. 503, 504) and the Federal Aviation Act (49 U.S.C. 1471). Such authority is civil only and would not bar criminal prosecution where appropriate.

Under the present Act the Commission has authority to suspend and revoke licenses and to issue "cease and desist" orders. It has been the Commission's experience, however, that these enforcement remedies may not be in the public interest in some cases. For this reason the Commission has concluded that the authority to impose civil penalties would materially assist it in carrying out its program to protect public health and safety and the common defense and security. A penalty could be levied, where suspension or revocation is not required, without depriving a licensee of his means of livelihood or without requiring the cessation of an activity which might be of material benefit to the public.

The Bureau of the Budget has advised by a letter dated January 16, 1969, that it has no objection to the Commission submitting the proposed bill for consideration by the Congress.

By your letter of August 6, 1968, you requested our comments on S. 3958, 90th Congress, which was a bill introduced on August 1, 1968, by Senator Pastore "To amend Chapter 18 of the Atomic Energy Act of 1954, as amended, and for other purposes." This bill is similar in purpose to the proposed legislation we have submitted. The principal difference between S. 3958 and the proposed bill relates to the question of double jeopardy. In considering revisions of our initial drafts within the executive branch of the Government, it became clear that the proposed legislation should emphasize that it is remedial in nature and not punitive. It is important that the imposition of a civil penalty will in no way create a former jeopardy question which might bar subsequent criminal prosecution in an appropriate case. For this reason, we believe that it is particularly necessary to delete the sentence in Section 234 a. of S. 3958 which provides that "Penalties prescribed by this section shall be *in addition to any other* specific or general *criminal penalties* provided by law and any other sanctions authorized by this Act, including revocation, suspension or modifications of license." [Emphasis supplied.]

We understand that if any provision such as the quoted sentence were included in a new civil penalties provision, the Department of Justice would wish to participate initially in determining whether a "civil penalty" should be imposed or whether criminal prosecution under an appropriate provision of Chapter 18 of the Act should be initiated.

It is considered desirable to provide discretion to the Department of Justice, after the matter has been referred to it by the Commission, to determine whether civil action to collect a penalty should be instituted since that Department would have basic responsibility for the action. We also feel it is advisable to provide that both the Commission and the Department of Justice shall have authority to compromise, mitigate and remit penalties at such time as the matter is within its jurisdiction.

Because of questions as to the finality of the determinations, it is considered preferable not to provide that civil penalties may be deducted from any sums owing from the United States to the persons charged. After judgment, a setoff can be effected against a violator without benefit of special legislation. Rather than provide that a civil action for collection should be brought within one year from the date of notification, it appears preferable to be silent on this point so that the existing five year statute of limitations for the collection of fines, penalties and forfeitures will apply.

Cordially,

GLENN T. SEABORG,
Chairman.

PROPOSED STATUTORY AMENDMENT PROVIDING FOR CIVIL PENALTIES

A BILL To amend chapter 18 of the Atomic Energy Act of 1954, as amended, and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, The Atomic Energy Act of 1954, as amended, is amended by adding thereto the following new section:

"SEC. 234. CIVIL MONETARY PENALTIES FOR VIOLATIONS OF LICENSING REQUIREMENTS—

"a. Any person licensed pursuant to sections 53, 62, 81, and 101 of this Act who violates any provision of the regulations, orders, or licenses issued under such sections shall be subject to a civil penalty, to be imposed by the Commission, not to exceed $5,000 for each such violation. In the case of continuing violations the civil penalty shall not exceed $10,000 for violations occurring within any period of thirty consecutive days. The Commission shall have the power to compromise, mitigate or remit such penalties.

"b. Whenever the Commission has reason to believe that a person has become subject to the imposition of a civil penalty under the provisions of this section, it shall notify such person of its intention to impose a civil penalty and of the proposed amount thereof, and give him a reasonable opportunity to show in writing either that he has not committed the violation charged, or that such violation took place under mitigating circumstances. The notice shall also advise such person that upon failure to pay the civil penalty subsequently determined by the Commission, if any, the penalty may be collected by civil action.

"c. On the request of the Commission, the Attorney General is authorized to institute a civil action to collect a penalty imposed pursuant to this section. The Attorney General shall have the exclusive power to compromise, mitigate, or remit such civil penalties as are referred to him for collection."

"SEC. 2. Subsection 221 c. of the Atomic Energy Act of 1954, as amended, is amended to read as follows:

"No action shall be brought against any individual or person for any violation under this Act unless and until the Attorney General of the United States has advised the Commission with respect to such action and no such action shall be commenced except by the Attorney General of the United States: *Provided, however,* That no action shall be brought under sections 222, 223, 224, 225, or 226 except by the express direction of the Attorney General: *And provided further,* That nothing in this subsection shall be construed as applying to administrative action taken by the Commission."

ANALYSIS OF PROPOSED LEGISLATION

The proposed legislation would amend the Atomic Energy Act by adding thereto a new Section 234 entitled "Civil Monetary Penalties for Violations of Licensing Requirements" and by changing Section 221 to make clear that "actions" to be

instituted by the Attorney General do not include administrative actions by the Commission. Section 234 would authorize the Commission to impose fines of not in excess of $5,000 for each single violation and not in execss of $10,000 for continuing violations by any person licensed pursuant to sections 53, 62, 81, or 101 of the Act, of any regulations, orders or licenses issued under such sections. The same remedial authority has been conferred by statute upon other regulatory agencies, such as the Federal Communications Commission and Federal Aviation Agency, to assist them in carrying out their regulatory functions. The proposed legislation is modeled upon similar provisions in the Federal Communications Act (47 U.S.C. 503, 504) and the Federal Aviation Act (49 U.S.C. 1471). Such authority is civil only and would not bar criminal prosecution where appropriate. It would not apply to the Commission contractors or other persons who are exempt from licensing.

In accordance with the requirements of the Administrative Procedure Act and the Commission's regulations, the Commission issues notices of violation to any licensee who appears to have violated any of the Commission's regulations, orders or conditions of licenses, except in cases where the public health interests or safety require the omission of such notice or where the violations are found to be willful. Notice of the proposed imposition of a civil penalty would be made as part of this existing notification procedure or by special notice. In cases where the notice of violation is omitted, a special notice of the imposition of a civil penalty would be provided to assure that the licensee is given an opportunity to explain his conduct prior to a determination by the Commission of whether the penalty should be imposed.

If after the Commission determines that the penalty should be imposed, the licensee fails to pay the amount, the matter will be referred to the Attorney General. The Attorney General will determine whether a civil action in Federal District Court would be instituted to collect the penalty. After the Commission has referred the matter to the Attorney General for collection, he shall have full authority to compromise, mitigate or remit the civil penalty.

In addition the proposed legislation would amend Section 221 c. of the Act to make clear that this section does not require the approval of the Attorney General prior to the initiation of administrative action by the Commission not only with respect to the imposition of civil penalties, but also for any other enforcement action the Commission is now authorized to bring. Section 221 c. now provides that:

"No action shall be brought against any individual or person for any violation under this Act unless and until the Attorney General of the United States has advised the Commission with respect to such action and no such action shall be commenced except by the Attorney General of the United States. . . ."

A legislative history of the Act indicates that "action" within the purview of Section 221 c. means "court action" and does not apply to administrative action by the Commission. However, the proposed amendment to Section 221 c. will prevent any possible misinterpretation of the scope of the Commission's authority to take appropriate administrative action.

Appendix 5

AEC Letter Dated June 12, 1969, Transmitting Proposed Legislation to Extend Compulsory Patent Licensing Authority (H.R. 12697)

U.S. Atomic Energy Commission,
Washington, D.C., June 12, 1969.

Hon. John W. McCormack,
Speaker of the House of Representatives.

Dear Mr. Speaker: Transmitted herewith is a Commission proposal in the form of a draft bill "To amend the Atomic Energy Act of 1954, as amended, to extend the compulsory patent licensing authority." Appendix "A" is a comparative draft and Appendix "B" is an analysis.

Specifically, the proposed legislation would amend Section 153 of the Atomic Energy Act to extend its coverage to patents, the applications for which were filed prior to September 1, 1974. The section was initially limited to patents, the applications for which were filed prior to September 1, 1959. In 1959 the authority was extended to applications filed prior to September 1, 1964, and in 1964 was extended to those filed prior to September 1, 1969.

As amended, Section 153 would authorize the Commission under narrowly limited conditions to grant a nonexclusive license to certain patents of "primary importance" in the nuclear field. In these circumstances, the Commission would also be granted a license to use the invention. The patent owner would be entitled to a "reasonable royalty".

Although the Commission has not exercised this power to date, we believe that the reasons which justified the extensions of Section 153 in 1959 and 1964 are still valid. Although the industrial base is broader than it was in 1959 and 1964, it is still limited and certain fields of atomic energy appear to be concentrated in relatively few companies. In addition, important new developments in atomic energy are only now emerging from the research phase. The very existence of the authority may have a salutary effect.

The proposed amendment would have no budgetary effect as long as the Commission does not exercise its authority under Section 153. If the authority were used, it is anticipated that the budgetary impact would be minimal. Enactment of the proposed legislation is not anticipated to result in additional man-years of employment following its passage.

The Bureau of the Budget has advised that enactment of the proposed legislation would be in accord with the Administration's program.

Cordially,

GLENN T. SEABORG,
Chairman.

COMPARATIVE DRAFT

Section 153. NONMILITARY UTILIZATION.

"h. The provisions of this section shall apply to any patent the application for which shall have been filed before September 1, [1969] *1974.*"

ANALYSIS OF PROPOSED LEGISLATION

The Commission's authority to compel the licensing of certain patents is found in Section 153 of the Atomic Energy Act of 1954. The section applies to patents which the Commission declares to be "affected with the public interest", and was initially limited to patents the applications for which were filed prior to September 1, 1959. In 1959 the authority was extended to applications filed prior to September 1, 1964, and in 1964 was extended to those filed prior to September 1, 1969.

Section 153 provides that the Commission may, after giving the patent owner an opportunity for hearing, grant a non-exclusive license on any privately owned patent, the application for which is filed prior to September 1, 1969, if

(1) the invention is of "primary importance" in the production or utilization of special nuclear material or atomic energy; and

(2) the licensing is of "primary importance" to effectuate the policies and purposes of the Atomic Energy Act.

Under those conditions, the Commission is also granted a license to use the invention in performing any of its powers under the Act.

The Commission has not exercised the power to date. The restrictive conditions and 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. Since the patent owner whose patent is declared affected with the public interest is entitled to a "reasonable royalty fee" for any use licensed under Section 153, the net effect of the procedures of Section 153 is to deny a patent owner the right to possible injunctive relief for non-Government use.

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. While patent incentives are a necessary and desirable stimulus to the development of peace-time uses of atomic energy, it nevertheless would be desirable to extend the authority to applications filed during an additional five-year period to assure against enlarging particular preferred legal patent positions of the limited number of companies who may have developed a substantial amount of their experience at public expense. 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.

Appendix 6

Report of Advisory Panel on Safeguarding Special Nuclear Material (March 10, 1967)

U.S. Atomic Energy Commission,
Washington, D.C., May 5, 1967.

AEC Releases Report From Advisory Panel on Safeguarding Special Nuclear Material

The Atomic Energy Commission announced today that the Commission has received the report of a special panel of persons from outside the Government which has reviewed AEC policies and procedures for safeguarding special nuclear (fissionable) material.

The panel was asked to provide the AEC with an independent assessment of the effectiveness of the existing policies and procedures as well as recommendations for improving methods of safeguarding nuclear materials.

The panel was appointed by the Commission in July of 1966 as part of the AEC's evaluation of its special nuclear material policies and control program. This evaluation is designed to determine whether there are areas in which improvements can be made to assure that special nuclear materials distributed domestically and abroad, including privately owned material, are properly accounted for in the interest of common defense and security. Recommendations of the advisory panel—which reflect the independent views of its members—are being reviewed by the Commission.

Members of the panel were Dr. Ralph F. Lumb, Director, Western New York Nuclear Research Center, Buffalo, New York; Mr. Francis P. Cotter, Vice President, Washington, D.C. Office, Westinghouse Electric Corporation; Mr. Gerald Charnoff, Partner in the firm of Shaw, Pittman, Potts, Trowbridge & Madden, Washington, D.C.; Mr. Paul Grady, Partner (retired), Price Waterhouse Company, New York City; Mr. Ashton J. O'Donnell, Manager of Development, Bechtel Corporation, San Francisco; Mr. Louis H. Roddis, Jr., President, Pennsylvania Electric Company, a subsidary of the General Public Utilities Corporation; Dr. Fred H. Tingey, Manager, Operations Analysis, Idaho Nuclear Corporation, Idaho Falls, Idaho. Dr. Lumb was Chairman of the panel. Mr. Vincent C. Vespe, Director, Division of Operational Safety, U.S. Atomic Energy Commission, Albuquerque Operations Office, served as executive secretary to the panel; and Ralph G. Page, Chief of the Indemnity & Export Control Branch of the AEC's Division of State and Licensee Relations, Bethesda, Maryland, served as secretary.

A copy of the introduction to the report and the panel's recommendations are attached. Copies of the full report are available for inspection at the Commission's Public Document Room 1717 H Street, N.W., Washington, D.C., or may be obtained by writing to the Secretary, U.S. Atomic Energy Commission, Washington, D.C. 20545.

Report of the Advisory Panel on Safeguarding Special Nuclear Material

I. Introduction and Abstract of Recommendations

With the inception of the nuclear age, the foreign policy of the United States crystallized on the objective of limiting the number of nuclear powers. The Baruch Plan to control nuclear weapons and to assure that special nuclear materials would be used principally for peaceful purposes was submitted to the United Nations in 1946, though it was never adopted. The Atoms for Peace Program was conditioned on, and recognized the need for, assurances that the materials transferred under the program would not be diverted to military pursuits. The incorporation of safeguards requirements in bilateral agreements for cooperation, and the systematic transfer by the United States of its bilateral safeguards responsibilities to the International Atomic Energy Agency is consistent with this objective. The United States ratification of the Moscow Treaty of 1963, the so-called "Limited Nuclear Test Ban Treaty," was the lineal descendant of this policy objective. Thus it has been, and continues to be, a basic foreign policy objective of the United States to strictly limit the proliferation of nations with nuclear weapons capability.

The accelerating introduction of nuclear power on an economically competitive basis in this country and abroad during the last two years has resulted in dra-

matic forecasts of nuclear power growth during the next decade or two. While the benefits of abundant and economic nuclear power are many and generally well-known, this development will inevitably result in the availability of large quantities of special nuclear materials. If uncontrolled, nuclear weapons development and production programs could be initiated in many countries. By 1980, it has been forecast, plutonium will be produced throughout the world at a rate of more than 100 kilograms a day. Such quantities of material contain the potential for production of a substantial amount of the world's electric power. Alternatively, however, they are sufficient for the daily production of many nuclear weapons.

While it is unreasonable and unrealistic to terminate the nuclear power program because of its potential for contributing to the spread of nuclear weapons, the forecast by-product production of plutonium makes it essential that an effective world-wide international safeguards system be established quickly.

There are obviously a number of ways for non-nuclear nations to obtain a nuclear weapons capability, e.g.,

- the indigenous development of a technology capability;
- the acquisition of materials or finished weapons supplied for such purpose by a nuclear power;
- the theft of finished weapons components or assembled weapons; and
- the diversion of materials developed in, or supplied for, peaceful application of nuclear energy.

Attainment of the objectives of the non-proliferation policy accordingly involves a multifaceted program of formal and informal understandings, including:

- restricting the transfer of nuclear weapons and nuclear weapons technology to non-nuclear nations;
- inducements to such nations to refrain from independently developing nuclear weapons; and
- a safeguards program to protect against the diversion of materials to unauthorized purposes.

The safeguards program is designed to detect promptly, and thereby deter, diversions of special nuclear materials from peaceful programs to weapons applications. In the United States, the "safeguards" program is also expected to detect any diversion to unauthorized purposes of military materials, weapons, and weapons components, at least until they are transferred by the AEC to the Department of Defense.

The objectives of the safeguards program, properly implemented, can compel nations seeking nuclear arsenals to follow more expensive, and therefore less attractive, routes to nuclear weapons than would be the case if plutonium, for example, were acquired for military purposes as a by-product of a civilian nuclear power program.

Safeguards programs should also be designed in recognition of the problem of terrorist or criminal groups clandestinely acquiring nuclear weapons or materials useful therein. Although such illegal groups are more likely to steal finished components or weapons than divert materials from peaceful programs, criminal organizations may be attracted to divert such materials if a black market develops, as it is likely to. It should be recognized that political and social restraints would not influence terrorist, insurrectionist or criminal groups. Therefore, criminal sanctions, e.g., fines and prison terms, are essential elements of an effective safeguards program.

An international safeguards program can help reduce tensions and perhaps contribute useful precedents for effective disarmament and other peace keeping arrangements.

The Panel recognizes that even if successfully put into practice on a world-wide basis, the safeguards program by itself cannot effectively assure that this country's non-proliferation objectives will be attained. Nonetheless, for the reasons discussed above, the safeguards program is worthy of the active support of all interested governmental agencies.

The Panel believes that the AEC generally has been responsive to its obligations, under the Atomic Energy Act, for safeguarding special nuclear materials. Over the past twenty years there has evolved a safeguards system applicable to AEC cost-type contractors which incorporates most of the essential elements for safeguarding special nuclear materials. The Panel notes that the AEC has recognized the need for modification of its safeguards program in the light of changing activities. The Panel generally concurs with the actions taken and contemplated.

The Panel has noted and recommends steps which the AEC can take to improve its programs. These recommendations are intended to promote a well coordinated,

comprehensive safeguard system capable of coping with the rapid escalation in the distribution of nuclear technology and special nuclear materials.

Recommendations

1. The Atomic Energy Act of 1954 and the Atomic Weapons Rewards Act of 1955 should be modified to provide severe criminal penalties for unauthorized diversions of special nuclear materials and to provide rewards for information about such diversions. AEC regulations should require that these provisions be publicized and prominently posted at all installations handling significant [1] quantities of special nuclear materials.

2. (a) Responsibility for policymaking and overseeing the safeguards program should be vested in a single AEC office at a level sufficiently high that it can efficiently and economically coordinate this nation's domestic and international safeguards program.

(b) An Interagency Committee composed of representatives of sufficiently high stature from the AEC and such agencies as the Departments of Justice, State, Defense, Commerce, Treasury—as well as the Central Intelligence Agency and Arms Control and Disarmament Agency—should be established to formally involve these agencies in the safeguards program.

(At the Commission's request, the Panel transmitted on January 20, 1967, its specific and detailed suggestions for an organizational structure designed to achieve these objectives.)

3. All persons having access to significant quantities of unclassified [2] special nuclear materials should have a clearance equivalent to "L" clearances which are used in the AEC Classified Information Access Program.

4. The AEC, in cooperation with its licensees, should develop minimum physical protection standards applicable to licensees for the safeguarding of special nuclear materials. These standards should take into consideration the strategic importance of special nuclear materials as well as their high dollar value.

5. There should be provisions made for a review by the AEC of the design and construction of facilities that handle significant quantities of special nuclear materials to determine their adequacy for safeguards purposes.

6. Criteria should be established for acceptable limits for shipper-receiver differences, materials unaccounted for, quantities discarded or lost, and maximum quantities of special nuclear materials permitted on inventory in forms unmeasurable or which can be measured only with a very large error, with due regard for the quantities, form and accessibility of the materials involved. In the event these limits are exceeded, the AEC should require an investigation and report.

7. The quantities and forms of special nuclear materials handled should be principal determinants in establishing the safeguards program. There should be established minimum quantities below which no special safeguards provisions are made.

8. Increased emphasis should be given to systems of internal management control within all organizations handling special nuclear materials in order to minimize the risk of diversions to unauthorized purposes.

9. The United States should intensify its efforts to establish an effective universal safeguards system under the International Atomic Energy Agency. Toward this end the U.S. should encourage:

(a) Euratom and IAEA to arrange for appropriate surveillance by IAEA of the Euratom safeguards program, including active participation as appropriate in inspection of facilities;

(b) Voluntary acceptance by other nations, especially the major powers, of the IAEA safeguards inspections;

(c) The assignment by member nations of qualified personnel to the IAEA safeguards program for terms of at least five to seven years;

(d) International pooling through the IAEA of information regarding diversions (actual, attempted, or potential) of special nuclear materials to unauthorized purposes.

10. (a) The AEC should continue the present safeguards policy as provided for in the US-Euratom agreement for cooperation until Euratom and IAEA agree to surveillance by IAEA of the Euratom safeguards system.

(b) The AEC should improve its evaluation of the effectiveness of the Euratom safeguards program.

11. The AEC should increase its research and development effort on safeguards techniques and should encourage and support other national and international efforts to improve safeguards.

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[1] As used herein, significant quantities of special nuclear materials refer to quantities in excess of 5,000 grams of contained uranium-235, uranium-233, plutonium, or any combination thereof.

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12. The United States should encourage the International Atomic Energy Agency and other interested nations to establish an International School of Safeguards to train inspectors, develop research programs, and accumulate and distribute information relating to safeguards.

13. There should be an independent review of the safeguards currently applicable to materials and weapons transferred to the Department of Defense under Section 91b. of the Atomic Energy Act of 1954.

U.S. Atomic Energy Commission,
Washington, D.C., March 10, 1967.

Dr. Glenn T. Seaborg,
Chairman, U.S. Atomic Energy Commission,
Washington, D.C.

Dear Dr. Seaborg: The ad hoc Advisory Panel on Safeguarding Special Nuclear Material is pleased to transmit its report herewith.

I am pleased to report to you the concurrence of all Panel members in the substance and recommendations of the report. I trust that you will find it adequately discharges the review anticipated in your letter of July 20, 1966, which delineated the Panel's charter.

If I can be of further assistance, please advise.

Sincerely,

R. F. Lumb,
Chairman, Ad Hoc Advisory Panel
on Safeguarding Special Nuclear Material.

Report to the Atomic Energy Commission by the Ad Hoc Advisory Panel on Safeguarding Special Nuclear Material

March 10, 1967

Acknowledgment

This report represents the conclusions and opinions of the seven Panel members but was, in fact, dependent upon the efforts of a great many people. Considerable assistance was given by Mr. J. V. Vinciguerra, Assistant General Manager for Administration, and Mr. C. L. Henderson, Assistant Director of Regulation for Administration. Most helpful were the efforts of the Executive Secretary, Mr. V. C. Vespe, and Mr. R. G. Page, Panel Secretary. Many other individuals, too numerous to single out, within AEC and in private enterprise contributed considerable time and effort providing useful information to the Panel. The Panel is deeply indebted to all those who assisted in this complex study.

Contents

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The Panel has noted and recommends steps which the AEC can take to improve its programs. These recommendations are intended to promote a well coordinated, comprehensive safeguard system capable of coping with the rapid escalation in the distribution of nuclear technology and special nuclear materials.

Recommendations

1. The Atomic Energy Act of 1954 and the Atomic Weapons Rewards Act of 1955 should be modified to provide severe criminal penalties for unauthorized diversions of special nuclear materials and to provide rewards for information about such diversions. AEC regulations should require that these provisions be publicized and prominently posted at all installations handling significant [1] quantities of special nuclear materials.

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12. The United States should encourage the International Atomic Energy Agency and other interested nations to establish an International School of Safeguards to train inspectors, develop research programs, and accumulate and distribute information relating to safeguards.

13. There should be an independent review of the safeguards currently applicable to materials and weapons transferred to the Department of Defense under Section 91b. of the Atomic Energy Act of 1954.

II. APPOINTMENT AND CHARTER

While seeking to implement its non-proliferation policy, the United States has encouraged the growth of the peaceful uses of nuclear energy. The nuclear power program has been a success in the United States and in a number of other nations, many of which have participated in cooperative nuclear development programs with the United States. The achievement of economically attractive nuclear power will inevitably result in increasing quantities of special nuclear materials. The general availability of large quantities of special nuclear materials, the likelihood of an increasing number of material enrichment plants, and the widespread competence in nuclear technology which will accompany economic nuclear power could facilitate the development of nuclear weapons capabilities in many countries.

With this prospect becoming imminent, the Atomic Energy Commission has undertaken a review of the safeguards program. In July, 1966, the Commission established an ad hoc Advisory Panel on Safeguarding Special Nuclear Material to conduct an independent review and appraisal of AEC safeguards policies and procedures for special nuclear materials used domestically and distributed by the United States internationally. The following were named to the Panel:

Ralph F. Lumb, Chairman, Director, Western New York Nuclear Research Center, Incorporated, Buffalo, New York.

Francis P. Cotter, Vice President, Washington Office, Westinghouse Electric Corporation, Washington, D.C.

Gerald Charnoff, Partner, Shaw, Pittman, Potts, Trowbridge & Madden, Washing, D.C.

Paul Grady, Partner, (ret.), Price Waterhouse & Co., New York, New York.

Ashton J. O'Donnell, Manager of Development, Bechtel Corporation, San Francisco, California.

Louis H. Roddis, Jr., President, Pennsylvania Electric Company, a subsidiary of General Public Utilities Corporation, Johnstown, Pennsylvania.

Fred H. Tingey, Manager, Operations Analysis, Idaho Nuclear Corporation, Idaho Falls, Idaho.

Vincent C. Vespe, Executive Secretary, Director, Division of Operational Safety, USAEC, Albuquerque Operations Office.

Ralph G. Page, Secretary, Chief, Indemnity and Export Control Branch, Division of State and Licensee Relations, USAEC, Regulation.

In appointing the Panel, the Commission emphasized that the safeguarding of special nuclear materials has always been of high importance to it. Because of the growth of the nuclear industry, particularly the quickening pace of nuclear power commitments, and the advent of private ownership of special nuclear materials, the Commission requested

- an independent assessment of whether its policies and procedures for safeguarding material are consistent with the needs of national security;
- the Panel's views and conclusions as to the effectiveness of these policies and procedures in promoting the common defense and security;
- recommendations for improvements; and
- the Panel to give special attention to the actions recently taken [1] and those already under consideration [2] by the AEC to improve its safeguards program.

III. APPROACH

The Panel reviewed safeguards procedures applicable to special nuclear materials within the AEC's responsibility and distributed internationally for peaceful purposes.[3] The Panel did not independently review the implementation or execution of these policies and procedures; nor did it inquire into the safeguards applicable to materials and weapons transferred to the Department of Defense under section 91b. of the Atomic Energy Act of 1954, as amended. Because these materials and weapons could be in a form more attractive to divertors, the Panel recommends a review of the safeguards currently applicable to such materials and weapons.

Early in its deliberations the Panel recognized that if nuclear energy is to serve mankind, no fool-proof system can be devised to prevent diversion. Material control procedures alone are not sufficient; because of measurement uncertainties associated with complex processes, significant quantities of materials could be diverted within those uncertainties without detection. Other techniques must be sought, found and applied to reduce the probability of diversion.

The Panel has identified the essential elements of a safeguards program.[4] The programs of the AEC, Euratom and IAEA were examined to see if these elements were present and whether the implementation was credible. This report summarizes the results of that examination.

IV. THE DOMESTIC PROGRAM

Until safeguards are accepted on a reasonably broad international basis and all peaceful programs in the United States are made subject to such international safeguards, an effective domestic safeguards program compatible with an accepted international program should be maintained.

A domestic safeguards program should have these elements:[5]

- security measures including fences, locks and guards where appropriate;
- a review of plant designs and construction;
- an accountability system which includes appropriate records, independent measurement of transfers between operational units, routine physical inventories, routine reporting of material balances for unit operations;
- written procedures;
- competent personnel;
- routine independent reviews of the accountability system, including audits of records, tests of the physical inventory and evaluation of the measurement techniques and the implementation of the procedures;
- an appropriate intelligence system to warn of the potential and actual diversion of materials, including adequate coordination among such responsible agencies as the Departments of Commerce, Defense, State, Justice and Treasury, the Central Intelligence Agency and the Arms Control and Disarmament Agency;
- appropriate criminal penalties for diversion to unauthorized purposes;
- utilization of an incentive program to encourage improved safeguards practices; and
- an appropriate reward system for information leading to the detection of diversion and apprehension of the divertors.

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[1] See references 11, 13, 31, 33, 34, 37, 40 in bibliography.
[2] See references 16, 19, 20, 21, 22, and 23 in bibliography.
[3] See appendix 1 for a list of the organizations represented by persons who were interviewed by the Panel. Also, appendix 2 lists the nuclear sites visited by the Panel during its study.
[4] See appendix 3.
[5] See appendix 4.

The AEC's domestic safeguards program [1] generally incorporates or recognizes all of the foregoing elements with certain exceptions.

The Panel has been assured and believes that there is no evidence that special nuclear materials used in domestic programs have been diverted to unauthorized use in this country or abroad. But what has been good enough in the past may not meet the test of the future.

Safeguards procedures have not always received adequate attention at senior management levels within the AEC and within contractor and licensee organizations. On occasion, in pursuit of other programmatic objectives, safeguards implementation has received secondary consideration.

This country should restate its commitment to a single international safeguards system. Concurrently, we should build a model program at home. Organizational changes within the AEC may be required to underscore this importance of the safeguards program and to assure that conflicts with other program objectives are resolved with higher regard for the safeguards objectives.

Recently there has been a determined but informal effort to coordinate the safeguards programs administered by the Division of International Affairs, the Division of Nuclear Materials Management and the Office of the Director of Regulation (11, 13). We understand that the coordination in recent months has been reasonably successful. Nevertheless, the Advisory Panel believes that a more formal mechanism is required for directing and coordinating the AEC's safeguards programs and to assure the relative importance of those programs as compared with other programs. There is a need to coordinate and direct the development and application of safeguards standards; safeguards related research and development programs; and domestic and international education programs on the need for, and techniques of, safeguards programs. Informal coordination can only be relied upon for a temporary period. Pressures of other formal responsibilities and changes of personnel ultimately diminish the value of informal coordinating mechanisms.

Similarly, because of the important role of other federal agencies (the Departments of Commerce, Defense, State, Justice and Treasury, the Central Intelligence Agency and the Arms Control and Disarmament Agency) in the over-all safeguards program, the present informal coordination between such agencies should be formalized.

Until recently, in the case of licensees the AEC has primarily relied upon the high intrinsic value of special nuclear materials and criminal penalties for safeguards. As a world commercial market, and perhaps a black market, develops for special nuclear materials, there may develop financial incentives (to criminal elements, if not responsible corporate organizations) working contrary to the objectives of safeguards programs. Thus, the intrinsic value of the material should no longer be primarily relied upon to provide safeguards. The AEC, accordingly, has recently improved its accountability controls over leased and privately owned special nuclear materials.

The improved accountability controls should be supplemented with more severe criminal penalties and with offers of rewards for information leading to the arrest of persons engaged in illegal transactions involving special nuclear materials. While the penalties for misusing special nuclear materials with an "intent to injure the United States or gain advantage to a foreign power" are severe (persons convicted of such crimes are punishable by death), persons diverting such materials with any other intent are only punishable by five years confinement and a fine of $10,000. This may not be a sufficient deterrent to illicit transactions involving materials valued in excess of millions of dollars. While the Atomic Weapons Rewards Act provides a reward for certain information, it does not provide a reward for information concerning the diversion of special nuclear materials to unauthorized use.

Both the Atomic Energy Act of 1954 and the Atomic Weapons Rewards Act may require amendment to increase the severity of the penalty for illegal transactions of special nuclear materials and to establish the recommended rewards program. When and if enacted, the criminal and rewards provisions should be posted prominently at locations where significant quantities of special nuclear materials are used.

The threat of detection and more severe criminal penalties should help deter organizations and individuals from attempting to divert materials to unauthorized uses. In most cases, detection will be aided by the interrelationship of procedures for accountability control, production control, manufacturing con-

[1] See appendix 4.

trol and quality control. Nevertheless, diversions may be attempted and may succeed without immediate detection. After such a diversion is detected, pre-established procedures for identifying and apprehending the divertor(s) and recapturing the material must be promptly implemented. This will require provisions for informing police departments, the Federal Bureau of Investigation, the Central Intelligence Agency and customs officials, and for identifying diverted materials.

V. THE INTERNATIONAL PROGRAM

However effective the domestic safeguards program may be, it will not materially contribute to limiting the proliferation of nuclear powers unless it is complemented by an equally effective international program. Accordingly, the Panel reviewed the AEC's international safeguards program [1] which currently is directed at—

- implementing the safeguards provisions of the bilateral agreements for cooperation which have not been transferred to the IAEA safeguards system.
- enlarging and enforcing the safeguards program and responsibilities of the International Atomic Energy Agency, and
- accepting, at least for time being, and encouraging the effective development of the European Atomic Energy Community (Euratom) safeguards program.

A. The Bilateral Program

Subsequent to the enabling legislation for the Atoms for Peace Program, the U.S. has entered into many bilateral agreements for cooperation which provide for the transfer of special nuclear materials to foreign nations. Each of these agreements provides for the application of safeguards to the special nuclear materials. These safeguards include the AEC review of procedures for accounting for the materials, the reporting of transactions involving the materials, and an inspection of the materials in the foreign nation.

In recent years, the U.S. has been transferring these safeguards functions to the IAEA by agreement. Today there are sixteen bilaterals still in force under which the safeguards provisions are implemented by the AEC, and eleven or twelve of these are expected to be transferred to the IAEA this year. The remaining four or five should be transferred in the near future if all parties can reach mutual agreement. Consequently, the recommendations of this report do not address themselves directly to the bilateral safeguards program. However, so long as this program is perpetuated, the essential elements of an adequate safeguards system are generally applicable.

B. The IAEA Program

It is significant and salutary that the IAEA safeguards program has been accepted, in principle, by so many nations. It would be a safer world indeed if all nations subscribed. Conceptually, the acceptance of IAEA safeguards, including the provision of inspection, represents vital and significant progress towards an effective system of international control.

The IAEA safeguards system, applicable to research and power reactors, has been defined and developed during the past six years. It is being extended to chemical reprocessing plants and ultimately should extend to other sensitive areas of the nuclear fuel cycle. It now requires expansion to cover a larger number of facilities and countries, consistent with the availability of a sufficient number of trained personnel. The current United States policy of transferring its safeguards rights and responsibilities under bilateral agreements for cooperation to the IAEA is progressing satisfactorily and should encourage greater world confidence in the IAEA. All nations should be encouraged to place their peaceful facilities and nuclear materials under IAEA safeguards.

While the IAEA safeguards program is directed at detecting diversions of special nuclear materials, the system fails to provide any mechanism for determining, after a diversion is detected, whether the diversion was undertaken by a terrorist or insurrectionist group, a black marketeer; or a government unit intent on developing a nuclear weapons capability.

A small but competent staff appears to have been developed by the IAEA to administer its safeguards program. By employing international teams of qualified inspectors, IAEA inspection findings should continue to gain in credibility and acceptability. It is obviously essential to encourage the IAEA to maintain employment opportunities which will attract competent inspectors to the IAEA staff. A vigorous international research and development program directed at

[1] See appendix 5.

improving measurement tools and inspection techniques could contribute to the satisfaction and rewards of such employment and would help optimize the utilization of the large number of inspectors needed to accommodate the predicted growth in peaceful nuclear applications.

C. The Euratom Program

Until there is broad acceptance of the IAEA safeguards program, regional safeguards systems such as that of Euratom's must be accommodated, although care should be exercised that such accommodation not be misunderstood as being contradictory to the long term goal of a single international system of detection and control by an international body like the IAEA.

Obviously, an international system is more credible than a regional system. Nevertheless, in the light of the long-term historical rivalries, the Euratom regional system can contribute some confidence that the member state peaceful programs are not being subverted to weapons objectives.

The Euratom safeguards program as applied to U.S.-supplied special nuclear materials is required to be compatible with the IAEA program. The Panel believes that the Euratom program in fact is generally compatible with that or IAEA.[1] The AEC has acquired considerable confidence in the Euratom program as a result of the technical competence of the Euratom staff. However, because the U.S. has no direct evidence of the implementation of the Euratom safeguards procedures, in the opinion of the Panel there is not an adequate basis for the United States to formulate an independent opinion as to the effectiveness of implementation of the Euratom safeguards program.

Under the Euratom safeguards system all peaceful activities within the Euratom community are subject to safeguards control. While this is more comprehensive than the IAEA system, which applies only to those peaceful activities that member nations elect to place under IAEA safeguards as provided for in Article III.A.5. of the IAEA statute, it does allow for the withdrawal, albeit on notice, of facilities or material that a Euratom member nation may elect to convert for defense purposes.

Unlike the United States, the Euratom program does not require the application of safeguards to special nuclear materials exported by the member countries to non-member countries. This is not consistent with the internal Euratom safeguards program and allows the observation that U.S. material supplied to Euratom permits member countries to transfer out of Euratom equivalent quantities of special nuclear materials free of safeguards. Transfers by Euratom of U.S. supplied material, however, must be made in accordance with the U.S.-Euratom agreement which requires that the material be appropriately safeguarded.

U.S. exports of special nuclear materials to Euratom should be conditioned upon the U.S. acquiring more direct evidence of effective implementation of the Euratom safeguards program, upon a Euratom commitment to require IAEA safeguards controls on special nuclear materials exported by its member countries, and upon a determination by the United States that the exports will not result in the release of equivalent quantities of special nuclear materials from peaceful programs in the Euratom community to military purposes.

The urgency to promote the IAEA system should not be accompanied by efforts to dismantle the Euratom system, if it otherwise is contributing to the nonproliferation objectives. Rather, the Panel favors the evolution of a cooperative relationship between the Euratom and IAEA programs, under which the latter would audit or inspect the efficacy of the Euratom program. Such a relationship would offer the increased assurance provided by dual multilateral inspections and would reduce the required increase in IAEA manpower needs.

VI. SPECIAL CONSIDERATIONS

Prior to and concurrent with the Panel's activities, a large number of studies were conducted of special aspects of the safeguards problem. The results of these studies were invaluable to the Panel and many answered specific questions. Certain topical studies warrant further discussion.

A. Recent Amendments to 10 CFR 70

On February 3, 1967, the Commission issued amendments to its regulations in 10 CFR Part 70 requiring each licensee, who is authorized to posssess a quantity exceeding 5000 grams of contained uranium 235, uranium 233, plutonium, or any combination thereof, to—

[1] See appendixes 6 and 7.

(*a*) establish and maintain written material control and accounting procedures to account for the special nuclear materials in his possession;

(*b*) submit a full description of his procedures for control of and accounting for special nuclear materials (required only for activities other than those involved in the operation of a nuclear reactor or as sealed sources);

(*c*) identify to AEC the fundamental controls which he considers essential for assuring that special nuclear materials in his possession are adequately safeguarded (as in (b) above not required for certain activities); and

(*d*) perform an inventory not less often than annually.

In accordance with the Commission's request, the Panel reviewed the proposed amendments, discussed them in detail with the staff of the Director of Regulation, and transmitted written comments to the Director of Regulation on November 8, 1966. These comments are discussed in AEC–R 38/13 dated January 16, 1967 (23). The Panel generally concurred in the proposed amendments to 10 CFR 70 but noted the need for specific criteria with regard to those fundamental control procedures which will be incorporated into a license, and the need for publication of such criteria. The Panel noted that "the staff intends to utilize appropriate standards as interim criteria in determining the adequacy of the licensee's material control accounting system" (23). The Panel suggested that such standards be published for information of licensees, and concurs that "work needs to be done in refining these criteria and in the development of more definitive standards" (23). It is important that this work be expedited.

B. Strategic Importance

The results of the "Study of Strategic Importance of Nuclear Materials" (15) prepared by the AEC, December 5, 1966 (classified) has been made available to the Panel. It has been invaluable in providing a proper perspective. The Panel highly recommends it to those individuals responsible for implementing the AEC safeguards program as an excellent basis for reaching judgments with regard to the degree of effort needed in specific situations, such as frequency of physical inventory, frequency of inspections, precision and accuracy of measurements, etc. In this regard, the Panel believes this report generally supports the IAEA schedule of inspection frequency which is determined by the quantities of materials in inventory, through-put, or production capability of the facility.

After considerable deliberation, the Panel concludes that there is justification for the concept of a de minimis quantity from a safeguards point of view. Recognizing the hypothetical possibility of diverting many small inventories and thus accumulating sufficient material to construct a weapon, the Panel considers that the extent of the collusion necessary, together with the crminal penalties, rewards, and present health and safety regulations, reduces this risk considerably below the risk of diversions which may be attempted within normal measurement uncertainties at power reactor installations and at fuel reprocessing and fabrication plants. Efforts can far better be directed toward reducing these limits of error rather than accounting for small quantities of materials.

C. Resident Inspectors

The Panel has been provided with the results of the AEC study relating to the use of resident inspection in the domestic program (16). It has discussed the concept of resident inspection at length with the management and operational staff at many facilities, both licensees and non-licensed contractors.

The Panel concludes that resident inspection is one of many techniques which can be employed to provide assurance that materials are not being diverted to unauthorized use. For certain types of facilities, and under certain circumstances, resident inspectors may be necessary but alone are not sufficient for adequate safeguards. Like all other techniques, there is an optimum return for a given investment in time or effort. Judiciously used, resident inspectors can make a contribution to safeguarding special nuclear materials. In the Panel's opinion the most effective inspector is a well qualified technical man with experience providing him background in the disciplines associated with safeguards practices, such as auditing and accounting, statistics, nuclear chemistry and physics, intelligence, etc. The inspector should have complete and free access to all parts of the facility. Random visits by such an inspector to various sections of the plant, combined with his random acquisition of data and testing of measurements could act as a deterrent to illicit operations.

D. Certified Public Accountants

As a consequence of industry comments on proposed amendments (21) to 10 CFR 70, the AEC undertook a study (22) to determine the feasibility of inde-

pendent audits by public accountants to verify licensee accountability systems and inventories of special nuclear materials. The AEC study group concluded (22) that, in the absence of AEC special instructions, independent audits for the purpose of expressing an opinion on financial statements included in reports to stockholders are not sufficiently extensive to verify special nuclear material controls in a safeguards system, but that the capability for such audits could be established if a requirement were promulgated. Additionally, the American Institute of Certified Public Accountants, in cooperation with the AEC staff, is studying the question.

The concept of the AEC utilizing the independent audit by CPA firms as a facet of the AEC safeguards program merits intensive study. To be effective, auditing programs must be carefully developed and applied in order to permit the independent accountant to render the specific type of report required by the AEC. Of special importance is the inclusion on the audit staff of competent technical personnel. Further, there must be developed a review system to establish the dependability of the audit opinions to meet AEC requirements. Appropriately planned, independent audit reports in support of the AEC safeguards program can result in increased effectiveness of the system with substantial economies to the AEC. The Panel was interested to note that precedent for reliance on independent audit firms exists in the AEC uranium concentrate procurement program.

E. Standards and Criteria

On December 16, 1966, the General Manager convened a special meeting of AEC's Advisory Committee for Standard Reference Materials and Methods of Measurement to obtain advice, guidance and recommendations on the feasibility of developing more definitive standards and criteria for safeguarding special nuclear materials. A copy (46) of the subsequent report of that Advisory Committee was furnished the Panel on January 27, 1967. Similar views will be found in the discussions and recommendations of this report. The Panel believes that recommendations 1–5 and 8 of that report (46) warrant AEC study and appropriate implementation. Because the Panel has not had an opportunity to discuss recommendations 6 and 7 of that report with the Advisory Committee, it has not independently formulated any opinion thereon.

At the 1966 annual meeting of the Institute of Nuclear Materials Management, Mr. John Conway, Executive Director, Joint Committee on Atomic Energy, challenged the Institute to seriously consider the problem of policing a nonproliferation agreement and seek ways to aid the government in achieving its safeguards objectives. (12) The Institute did give serious consideration to the problem during ensuing months and transmitted [1] to the Panel a proposed standards program to be pursued by the Institute, as well as some suggestions as to steps the government may take to reinforce its safeguards program.

The Panel believes that the AEC should continue its efforts to develop more definitive standards and criteria for safeguarding special nuclear materials, and especially suggests that such organizations as the American Society of Testing Materials, the USA Standards Institute, and the Institute of Nuclear Materials Management should be encouraged by the AEC to participate in this activity.

VII. RECOMMENDATIONS

Recommendation 1

The Atomic Energy Act of 1954 and the Atomic Weapons Rewards Act of 1955 should be modified to provide severe criminal penalties for unauthorized diversions of special nuclear materials and to provide rewards for information about such diversions. AEC regulations should require that these provisions be publicized and prominently posted at all installations handling significant [2] quantities of special nuclear materials.

Commentary

The criminal provisions of the Atomic Energy Act may be inadequate to deter and sufficiently punish illegal sales of special nuclear materials. The present provisions of the Atomic Energy Act describe illegal transactions in special nuclear materials as two crimes of separate gravity.

If there is "intent to injure the United States or gain advantage to a foreign power," the crime is punishable by death if the jury so recommends. This spe-

[1] See appendix 8.

[2] As used herein, significant quantities of special nuclear materials refer to quantities in excess of 5,000 grams of contained uranium 235, uranium 233, plutonium, or any combination thereof.

cific intent is pointed at a political motivation rather than a financially rewarding criminal purpose. For example, a sale to an undisclosed principal or even to a terrorist organization not bent on injuring the United States could lack this intent.

The second crime is one where there is only general intent and is punishable only by five years confinement and a fine of $10,000.

The punishment for the non-political crime seems inconsistent with the seriousness of the wrong doing and its potentially grave consequences. The punishment would seem to be an inadequate deterrent if the anticipated profits were in the order of millions of dollars. This penalty provision should be more severe.

During the period of our study, a Federal District Court held that a provision calling for jury recommendation of a death sentence in the Lindbergh Law made the Law unconstitutional. The criminal provisions of the Atomic Energy Act are similar.

The Atomic Weapons Rewards Act of 1955 only authorizes rewards for original information relating to the introduction of special nuclear materials or nuclear weapons into the United States, or the unauthorized construction of a nuclear weapon within the United States. We believe that the diversion of special nuclear materials to unauthorized purposes is also a grave matter, and a system of rewards should be established.

Deterrence and detection would be promoted by conspicuous posting of notices about penalties and rewards at locations where there are significant quantities of special nuclear materials.

A study should be conducted of our Extradition Treaties with the many nations to see if safe havens are readily available for violators of the special nuclear materials control laws.

Recommendation 2

a. Responsibility for policy making and overseeing the safeguards program should be vested in a single AEC office at a level sufficiently high that it can efficiently and economically coordinate this nation's domestic and international safeguards program.

b. An Interagency Committee composed of representatives of sufficiently high stature from the AEC and such agencies as the Departments of Justice, State, Defense, Commerce, Treasury—as well as the Central Intelligence Agency and Arms Control and Disarmament Agency—should be established to formally involve these agencies in the safeguards program.

(At the Commission's request, the Panel transmitted on January 20, 1967, its specific and detailed suggestions for an organizational structure designed to achieve these objectives.)

Commentary

The Atomic Energy Commission in its role as a producer and promoter is responsible for developing and manufacturing nuclear weapons, pursuing other military uses for nuclear energy, adapting atomic energy to peaceful uses, and conducting basic research. Another rapidly growing responsibility is in the "Fourth Branch of Government"—regulating the private atomic power sector.

In these functions, and in its international activities under Agreements for Cooperation, the Commission has vested safeguards responsibilities in three separate management organizations. To date, the AEC safeguards experience has been good, but as we look to the future and the sharp increase in the production and distribution of special nuclear materials, this diffusion of responsibility will bring about increased diversity of objectives, policies, procedures and standards.

It is the Panel's opinion that the Commission should consolidate in a single office the responsibility for establishing (but not implementing) objectives, policies, procedures, standards and for promoting efficiency and economy. Programs of research and development, and education and training in safeguards should also be managed by this office. This office would also conduct reviews of the effectiveness of implementation of the policies and procedures and an assessment of the degree to which standards are being met. We recognize this could cause duplication, but good managers can minimize it.

The Panel noted that frequently when other programmatic objectives were being pursued, the problem of safeguarding special nuclear materials has not received high level management attention. A single office, reporting at a high level and charged with the safeguards responsibility would assure that decisions are made with due consideration.

The Panel believes that, as private ownership becomes widespread, it is quite probable that all regulatory functions of the AEC will be organized independently of the operating and research functions, and that the safeguards function then appropriately will be divorced from operational pressures.

It appears obvious to the Panel that many government agencies have a part to play in a good safeguards program. Not only may the special talents and knowledge of these agencies be useful, but their communication channels, prestige, and influence can be brought to bear on safeguards problems to good advantage.

It is recognized that informal liaison currently exists among these agencies, but the Panel believes that a formal involvement, at an appropriate level, will enhance their contribution to the safeguarding of special nuclear materials.

Obvious areas of necessary involvement include, in addition to the promotion of a single universal safeguards system, procedures and techniques for detecting clandestine export and import of special nuclear material. Another area of involvement is that of intelligence—for example, information concerning a potential diversion may first come from the intelligence community.

Every effort should be made to insure timely notification of the opening of blackmarkets in the world for special nuclear materials. It is not clear that such markets exist today, although the Panel understands that a "fence" was involved in the recent theft of fuel elements (containing natural uranium) from the Bradwell Reactor in England.

In the Panel's opinion, effective coordination and cooperation of these agencies with the AEC can make a major contribution to an effective safeguards program.

Recommendation 3

All persons having access to significant quantities of unclassified [1] special nuclear materials should have a clearance equivalent to "L" clearances which are used in the AEC Classified Information Access Program.

Commentary

We believe, because of the risks involved, that the Commission should assure itself with respect to licensee operations, as it does in its own programs, that persons having working access to significant quantities of special nuclear material are of good character and loyal citizens of the United States.

The Panel noted that this is the practice, on a voluntary basis, in some licensee facilities; however, many licensee facilities only check names at local police agencies to see if a person has a criminal record.

Because of the high mobility of today's work force, only the examination of central Federal records makes it possible to determine, with any assurance, that a person does not have a criminal or other high risk background.

Recommendation 4

The AEC, in cooperation with its licensees, should develop minimum physical protection standards applicable to licensees for the safeguarding of special nuclear materials. These standards should take into consideration the strategic importance of special nuclear materials as well as their high dollar value.

Commentary

At present licensees are not required to follow any specific physical protection standards. On the other hand, AEC contractors who are not financially responsible for the special nuclear materials they possess are required to provide such physical protection in complying with AEC Manual Chapter 2401. This manual chapter recognizes degrees of accessibility as to form quantity and material, and specifies minimum security protection therefor.

A recent report (24) by the Division of Compliance indicates that there are a total of 39 licensed major processors of special nuclear materials. A survey of 21 of these locations was made. Nine of these currently employ practices comparable to AEC Manual Chapter 2401 and three more would have been comparable if "L" clearances had been in effect for certain personnel as is separately recommended by this Panel. Most of the rest of the departures would appear to be comparatively minor and their correction not an onerous task. The suggestion is therefore made that minimum physical protection standards applicable to licensees handling special nuclear materials be developed and applied. Manual Chapter 2401 would certainly represent a point of departure for such standards.

[1] For classified materials, special clearances are required by AEC.

Recommendation 5

There should be provisions made for a review by the AEC of the design and construction of facilities that handle significant quantities of special nuclear materials to determine their adequacy for safeguards purposes.

Commentary

Although some facilities are reviewed in the design stage for health and safety features by the AEC, inspections for safeguards features have not been required in the past. The construction of new plants or substantial modifications of old facilities may significantly influence two facets of safeguards—physical security and the ability to account for the materials. Hence, construction plans should be reviewed to insure that these aspects of safeguards are adequately included in the planned construction and on-site inspection should be conducted to insure that the safeguards features are appropriately built into the facility. While no such requirement for plant approval and verification can guarantee that some clandestine diversion features are not built into the plant, it would insure that such features are more difficult to build in and would furthermore insure that some degree of management attention is given to the safeguards problem in the design of the facility just as is done in connection with criticality or health and safety problems.

In establishing these requirements the AEC must be prepared to handle the review and inspections expeditiously and unobtrusively so as to cause no unnecessary delay in the engineering and construction of facilities.

Recommendation 5

Criteria should be established for acceptable limits for shipper-receiver differences, materials unaccounted for, quantities discarded or lost, and maximum quantities of special nuclear materials permitted on inventory in forms unmeasurable or which can be measured only with a very large error, with due regard for the quantities, form, and accessibility of the materials involved. In the event these limits are exceeded, the AEC should require an investigation and report.

Commentary

Shipper-receiver differences, materials unaccounted for, measured discards and losses are the principal indicators of the degree of control being exercised over materials. To be valid indicators, shipper and receiver must independently measure the quantities transferred, and materials unaccounted for must be based upon a physical inventory which has a small uncertainty associated with it; i.e., a small fraction of the inventory in the form of unmeasured quantities or quantities measured with large errors. The absolute value of these indicators reflect the potential for diversion. Consequently, to be useful, criteria must be established for acceptable limits.

The AEC presently is reviewing criteria for shipper-receiver differences. The Panel believes that these criteria are appropriate and should be adopted generally.

In the case of materials unaccounted for, discards and losses, the Panel does not believe it is practical to establish acceptable limits applicable uniformly to all facilities. However, the AEC should review each unique operation and establish what it believes to be reasonable quantities above which an investigation should be initiated. It should rely not only on past history of such operations, but upon its technical judgment of the degree of control achievable, considering the type of operation and the equipment available. Through long experience at non-licensed AEC contractor facilities, informal criteria of this nature have been developed. The Panel believes that such criteria should be formalized and applied to facilities processing significant quantities of special nuclear materials. When these acceptable limits are exceeded, the organization holding the material should be required to conduct an investigation into the circumstances surrounding the excessive uncertainty and to report its findings to the AEC. Based on these reports, the AEC can then make an intelligent judgment as to whether or not a special investigation by the AEC is warranted.

In connection with the transfer of materials, the Panel noted that in many instances in the AEC licensee program there is a lengthy delay between the shipment of the material and the receipt of notification of its arrival at the destination. Where significant quantities of special nuclear materials are involved, special procedures should be developed to confirm receipt or establish whether or not in-transit materials have been diverted.

The degree to which an inventory of special nuclear materials can be confirmed by measurement or test will determine the accuracy of a stated inventory. Thus

the accumulation of significant quantities of special nuclear materials in forms which are unmeasurable or measurable only with a large error introduces a large uncertainty in the inventory value.

The accumulation of large quantities of special nuclear materials in unmeasured forms defeats safeguards purposes in two ways. First, the need for timely knowledge concerning potential diversion is compromised when such quantities remain on hand for long periods of time. Second, equivalent quantities of special nuclear materials could be diverted and the values assigned to the unmeasured material.

In the past, there have been large quantities of special nuclear materials accumulated as scrap and stored for periods as long as ten years. During the early years of the atomic energy program the shortage of manpower and facilities, and the urgency of programs, required that difficult to recover materials be stored. The Panel believes that manpower is now in sufficient supply and facilities are or can be made available to keep scrap inventories to a minimum.

Recommendation 7

The quantities and forms of special nuclear materials handled should be principal determinants in establishing the safeguards program. There should be established minimum quantities below which no special safeguards provisions are made.

Commentary

The Panel believes it is self-evident that the amount of effort involved in the safeguards program should be consistent with the risks associated with the materials at particular facilities. The Panel notes that the International Atomic Energy Agency has a schedule relating the frequency of inspections to the quantity of materials in inventory, the annual through-put at the facility, or the production capability of the facility, whichever is the larger. The Panel recommends that the AEC develop a similar schedule. However, in implementing the program, the Panel suggests that in addition to the quantities involved, consideration should be given to the relative accessibility of the materials. Hence, though a power reactor may have a larger inventory of special nuclear materials, physical inventory requirements and inspections might be less frequent than at a chemical processing plant with smaller quantities of materials, but a higher degree of accessibility. Certainly the risk of diversion of irradiated fuel in the form of identifiable items is much less than the risk of diversion of unirradiated materials in the form of unidentifiable solutions or chemical compounds.

The Panel has reviewed the AEC's study on strategic quantities of materials (15) and has addressed itself to the appropriateness of a de minimis quantity for safeguards purposes. In view of the value of the material, the criminal penalties, and the health and safety provisions of the AEC regulations, the Panel believes it is reasonable to exempt from any special safeguards provisions all facilities which have an inventory, an annual through-put, or a production capacity of less than 350 grams of special nuclear materials.

The rationale for choosing the 350 gram quantity is based on the opinion that it would take an unreasonable amount of collusion to put together enough material from a number of such facilities to constitute the same degree of risk as is nominally associated with the measurement uncertainties at such facilities as fuel fabrication plants or reprocessing plants. Further, 350 grams is the maximum quantity which may be licensed by an agreement State for use at any location.

Recommendation 8

Increased emphasis should be given to systems of internal management control within all organizations handling special nuclear materials in order to minimize the risk of diversions to unauthorized purposes.

Commentary

Safeguards programs involve at least three general areas of responsibility:

(a) Establishment of regulatory requirements to protect public health, safety and security;

(b) Implementation of these requirements by the organization performing the work with special nuclear materials; and

(c) Surveillance and evaluation of the adequacy of all procedures.

In recommending that in each of these there should be increased emphasis on the adequacy of the system of internal control, the Panel emphasizes that there is a real danger, even among persons directly concerned with safeguards problems, that internal control may be viewed too narrowly and that too little attention may be given to the interrelationship of all elements of the system.

The broader concept of internal control was expressed by the Committee on Auditing Procedure of the American Institute of Certified Public Accountants in a special report,[1] which defined internal control as comprising the plan of organization and all of the coordinate methods and measures adopted within a business to safeguard its assets, check the accuracy and reliability of its accounting data, promote operational efficiency and encourage adherence to prescribed managerial policies.

The Committee indicated that a satisfactory system would include:

- appropriate plan of organization;
- adequate system of authorization and records procedures;
- sound practices; and
- qualified personnel.

The physical and chemical nature of the various forms of special nuclear materials require specialized plant and equipment facilities for the processing, storage, use and protection of the materials. Accordingly, in considering safeguards programs, physical plant and equipment facilities suitable to the specific purposes should be added to the four general elements of internal control listed above.

It is obvious that the primary responsibility for implementing the materials control elements of the safeguards system must rest upon the organization engaged in the handling of special nuclear materials. It is important that surveillance agencies be continuously aware that weaknesses in the implementation of the materials control programs by the entity performing the operation cannot be patched-up by simply adding layers of surveillance, examination and inspection.

The policy of requiring licensees and contractors to submit written plans of organization, flow of production, description of physical facilities, record control procedures and forms, personnel data and plans for physical inventories for review and appraisal by the AEC is of key significance in the safeguards programs. This is the point at which the AEC must decide whether the applicant has sufficient resources in management capabilities, physical facilities, scientific technology and economic resources to be entrusted with the tasks to be undertaken in the processing and use of special nuclear materials.

After the license or contract has been granted, it is important that the plans are effectuated in such a manner as to provide effective internal control in all phases of operations. Even after this stage of accomplishment has been attained, there must be continuous attention by all levels in management of the enterprise to see that a satisfactory system is maintained and, of course, suitable programs of surveillance, examination and inspection by the AEC are required to meet its safeguards responsibilities.

The comments regarding this recommendation have purposely dealt with the broader aspects of internal control. In order to be somewhat more specific and without representing that the list is all-inclusive, the Panel has summarized in Appendix 3 an outline of essential elements of a safeguards system for special nuclear materials.

Although implicit in the foregoing remarks, the panel explicitly notes that these considerations are equally applicable to the international safeguards programs; past and present practices are somewhat deficient with respect to the amount of attention given the broad aspects of internal control.

Recommendation 9

The United States should intensify its efforts to establish an effective universal safeguards system under the International Atomic Energy Agency. Toward this end the U.S. should encourage:

(*a*) Euratom and IAEA to arrange for appropriate surveillance by IAEA of the Euratom safeguards program, including active participation as appropriate in inspection of facilities;

(*b*) Voluntary acceptance by other nations, especially the major powers, of the IAEA safeguards inspections;

(*c*) The assignment by member nations of qualified personnel to the IAEA safeguards program for terms of at least five to seven years; and

(*d*) International pooling through the IAEA of information regarding diversions (actual, attempted, or potential) of special nuclear materials to unauthorized purposes.

[1] See appendix 9.

Commentary

The longstanding policy of the United States to pursue a course leading to a single international safeguards system requires constant attention and specific actions if that goal is to be attained. The actions recommended above would constitute further evidence of U.S. intentions, and additional strengthening of IAEA safeguards.

The perpetuation of independent safeguards systems outside the purview of IAEA should be discouraged and means sought to encompass them within the IAEA system. In the case of Euratom, efforts should be exerted to accelerate a joint Euratom–IAEA agreement arranging for surveilliance by IAEA of the Euratom safeguards program. Such surveillance should include not only review of work papers and reports, but also active participation in occasional inspections of facilities.

The United States has succeeded in demonstrating to the world the significance it attaches to an international safeguards system through acceptance of IAEA safeguards on various facilities and operations in this country. The transfer of bilateral safeguards to the IAEA has given further evidence of our confidence in such a system. To a lesser but still significant extent, the United Kingdom and Canada have taken similar actions.

It is not enough that so few countries demonstrate their support of and belief in the IAEA. The acceptance of IAEA safeguards and the active support of the Agency's activities in this area must be encouraged on the part of all member states, particularly by the major powers. The community of nations watches with interest the extent to which actions by the Western nations are matched by the Soviet and Eastern European countries. The significance of even modest steps indicating further extension of IAEA safeguards must not be discounted.

Recent indications by several nations of Eastern Europe of their willingness to accept IAEA safeguards either on certain national facilities, or as the consequence of the sale of a nuclear power reactor, are most encouraging. The U.S. should utilize every reasonable means at its disposal to effectuate such a transaction. Only through such actions will international safeguards become a viable concept.

The IAEA has about one dozen professional employees on its safeguards and inspection staff. Few are long-term employees, and if present practice applies in the future, a two or three-year tour of duty is normal. If the Agency is to meet the anticipated workload, resulting from the rapid increase in utilization of nuclear power, means must be found to increase the staff with qualified personnel, and to extend their normal tour of duty to a term of sufficient length to permit the staff to be informed and effective. A minimum term of 5–7 years is suggested.

The responsibility for increasing the staff and improving its effectiveness lies first with the member states of the IAEA. They must first provide for an increased budget. They must then be prepared to furnish qualified personnel from their own domestic programs to serve on the Agency's staff. Arrangements must also be made for extended leaves of absence for these individuals, with appropriate re-employment rights assured.

In the context of the Agency it seems desirable to employ safeguards and inspection staff on long-term (5–7 years) renewable employment contracts, rather than permanent contracts. A program should be undertaken to ensure high morale, a sense of responsibility and importance, and a moral as well as professional commitment on the part of the staff.

With the growth of a worldwide open market in special nuclear materials there will be increasing opportunity for diversion of these materials to unauthorized uses. Of utmost importance to effective international safeguards will be the prompt flow of information regarding impending, attempted, and actual unauthorized diversions. Means should be sought to facilitate the transfer of pertinent information to a central body, probably the IAEA. With such information it would be possible to better utilize personnel and procedures to thwart a threatened diversion, or to recover material actually diverted.

Recommendation 10

a. The AEC should continue to implement the present safeguards policy as provided for in the U.S.-Euratom agreement for cooperation until Euratom and IAEA agree to surveillance by IAEA of the Euratom safeguards system.

b. The AEC should improve its evaluation of the effectiveness of the Euratom safeguards program.

Commentary

The Division of International Affairs has summarized for the Panel steps taken to assure adequate Euratom safeguards and the cooperative measures AEC, Euratom, and IAEA have employed.[1] The Panel is encouraged by this evidence of cooperation, as well as the intent for improved cooperation between IAEA and Euratom which was evident in discussions with both agencies. The demonstrated technical competence of Euratom safeguards personnel provides a degree of confidence in the Euratom program, and the political heritage of the cooperating nations ensures that national programs will come under close scrutiny and render as rather improbable a conspiracy to divert peaceful materials to military purposes. Nonetheless, the Panel believes that the U.S. does not have an adequate basis for an independent opinion regarding the effectiveness of Euratom safeguards. The Panel believes that the agreement,[2] which provides the U.S. with permission to verify by mutually approved scientific methods the effectiveness of Euratom safeguards, is a basis for initiating the audit of Euratom workpapers and the observation of Euratom inspections. Such techniques will further improve our confidence in Euratom safeguards, pending the surveillance of Euratom safeguards by the IAEA.

Recommendation 11

The AEC should increase its research and development effort on safeguards techniques and should encourage and support other national and international efforts to improve safeguards.

Commentary

An important factor in the achievement of an adequate safeguards program is the existence of techniques which facilitate the application of safeguards. A program to develop safeguards techniques and procedures is essential.

In the first ten years of its operation, the Division of Nuclear Materials Management established no research program, had no research budget and initiated no studies aimed at the development of improved safeguards techniques. During this period it relied exclusively upon research and development activities of the AEC's major contractors to improve measurement techniques and only indirectly was able to encourage research and development in a few areas aimed specifically at improved control of materials. In 1957, it undertook an extensive program to develop and maintain a material standards program in cooperation with the National Bureau of Standards, which by 1963, had cost two million dollars. Subsequent to 1963, the National Bureau of Standards has undertaken complete support of the standard materials program. In the ensuing years the Division of Nuclear Materials Management has allocated nearly a million dollars in additional funds to activities of benefit to safeguards. About $325,000 has been devoted to an intercomparison of laboratories in the measurement of special nuclear materials; about $400,000 was devoted to the development of improved control techniques; and the balance was devoted to studies aimed at improving material control procedures.

Since 1956 the Division of International Affairs has obligated approximately two million dollars, of which the majority is devoted to studies of safeguards procedures for a variety of nuclear facilities. It is estimated that approximately $400,000 was allocated to research and development aimed at new information and techniques for safeguarding special nuclear materials. The International Atomic Energy Agency in the same period invested approximately $350,000 in research and development aimed at improving techniques for surveillance. Euratom has no budget and no organized research and development program in safeguards. However, member states are encouraged to develop improved safeguards techniques within their regular operating programs.

In reviewing the activities sponsored by the Atomic Energy Commission, the Panel notes that there has been little overlap in the program sponsored by the Division of International Affairs and the Division of Nuclear Materials Management, and further that the programs sponsored were mutually useful. In the case of the International Atomic Energy Agency we also note little duplication of U.S. efforts. However, in analyzing the efforts by the Division of International Affairs, the Division of Nuclear Materials Management, and the International Atomic Energy Agency in the last decade, it is noted that each organization has invested an average of only $40,000 a year in research and development

[1] See appendixes 6 and 7.
[2] See appendix 6.

devoted to improved safeguards techniques. In the opinion of the Panel, this is an extremely low budget for research and development on a subject as important as safeguards.

It is recognized that the amounts stated above are probably a significant understatement of the total research and development effort which has been of benefit to the safeguards program. Through the years AEC major contractors have continued to develop new and improved measurement techniques for special nuclear materials. Nonetheless the Panel believes that an imaginative and intensive coordinated research and development program needs to be developed, appropriately funded and implemented.

A corollary benefit to a safeguards research and development program will be the increase in manpower available to carry out safeguards work. The continued growth of domestic and international nuclear activities will result in a shortage of knowledgeable safeguards personnel. If safeguards programs are to be effective, an adequate supply of manpower trained in safeguards work must be available. A continuing research and development program in safeguards will provide a supply of trained manpower. Further, the development of new techniques will contribute to optimum effectiveness of the available manpower.

Recommendation 12

The United States should encourage the International Atomic Energy Agency and other interested nations to establish an International School of Safeguards to train inspectors, develop research programs, and accumulate and distribute information relating to safeguards.

Commentary

The Panel believes that the current practice of on-the-job training is inefficient and unsuitable for the future safeguards program. It is particularly poor for IAEA inspectors because of the current practice of short (two to three year) appointments. The forecast increase in nuclear facilities will require an increasing number of safeguards inspectors, many of whom, for credibility purposes alone, must be nationals of some of the less sophisticated countries. What is needed is a formal training program, involving "appreciation courses" covering all pertinent disciplines and their interactions, as well as laboratory exercises involving practical applications of techniques and instrumentation useful in safeguards inspections.

The safeguards program is sufficiently important to justify establishing a school such as the Oak Ridge School of Reactor Technology, or Oak Ridge Institute of Nuclear Studies. Its faculty should include all pertinent disciplines and represent experience in the safeguards program. The faculty should be encouraged to develop research interests in the area of safeguarding special nuclear materials and such research should be supported.

The Panel believes that a School of Safeguards will not only improve the quality of safeguards inspectors, but that by training personnel for national programs of the participating states, a large pool of qualified safeguards inspectors can be available in a relatively short time to cope with the rapidly growing need of the IAEA. The Panel also believes that it is appropriate to consider using such a School of Safeguards to train personnel for private audit firms so that their talents might be utilized in reinforcing the domestic safeguards program.

The School of Safeguards can also make a significant contribution toward improved communications. It can become a center for the accumulation of safeguards information and for its distribution to all interested organizations. As a focal center for safeguards techniques, it should markedly stimulate the improvement of techniques as well as reduce the time span between the development of new techniques and their application in the field.

In the last analysis the success in the application of safeguards will largely depend on the quality of personnel available to implement the program. The supply of individuals having the necessary skills and experience is presently quite limited. The Panel believes that a School of Safeguards will insure that personnel with appropriate skills and interests are available to meet the rapidly escalating needs of the safeguards program.

Recommendation 13

There should be an independent review of the safeguards currently applicable to materials and weapons transferred to the Department of Defense under Section 91b of the Atomic Energy Act of 1954.

Commentary

a. The charter of the Panel excluded materials transferred to the Department of Defense under Section 91b of the Atomic Energy Act of 1954. However, the Panel notes that these materials, and the weapons and weapons components, are much more attractive from the diversion point of view than most of the materials involved in the peaceful use of nuclear energy. Consequently, in the absence of any recent independent review the Panel recommends that such a review of the applicable safeguards be conducted.

APPENDIX 1

ORGANIZATIONS REPRESENTED BY PERSONS INTERVIEWED BY PANEL

Arms Control and Disarmament Agency
Atomic Energy Commission
- Office of the General Manager
  - Division of Inspection
  - Division of Intelligence
  - Division of International Affairs
  - Division of Military Application
  - Division of Nuclear Materials Management
  - Division of Production
  - Division of Security
- Director of Regulation
  - Division of Compliance
  - Division of Materials Licensing

Department of State
European Atomic Energy Community (EURATOM)
General Electric Company
Idaho Nuclear Corporation
Institute of Nuclear Materials Management
International Atomic Energy Agency (IAEA)
Joint Committee on Atomic Energy
Nuclear Fuel Services, Inc.
Nuclear Materials and Equipment Corporation
Stanford Research Institute
Union Carbide Nuclear Company
Yankee Atomic Electric Company

APPENDIX 2

NUCLEAR SITES VISITED BY PANEL

	Type of plants
General Electric Co., San Jose, Calif.	Fuel processing and fabrication plant.
Idaho Nuclear Corp., Idaho Falls, Idaho	Chemical processing plant.
Nuclear Fuel Services Inc., Erwin, Tenn.	Fuel processing plant.
Nuclear Fuel Services Inc., West Valley, N.Y.	Chemical processing plant.
Nuclear Materials and equipment Corp., Apollo and Leechburg, Pa.	Fuel processing plant.
Union Carbide Nuclear Co., division of Union Carbide Corp., Oak Ridge, Tenn.	Weapon processing and fabrication plant.

APPENDIX 3

ESSENTIAL ELEMENTS OF AN ADEQUATE SAFEGUARDS SYSTEM

In the Panel's comments under Recommendation 8, emphasis has been placed on the broader concept of internal control as a foundation to an adequate safeguards system. All of those comments, therefore, are incorporated by reference as a prefactory statement to the following summary of some of the essential elements of an adequate safeguards system in the management and control of special nuclear materials. Essential elements include:

1. A written description of procedures to be used and measurements to be made by the possessor of special nuclear materials, whereby his material inventory, transfer and process losses would be currently recognized, measured and recorded, and whereby his material would be protected against theft or diversion, should be submitted to the safeguarding agency (AEC IAEA, or Euratom) for review and approval prior to the receipt of material.

Commentary.—Prior to receiving strategic quantities of special nuclear materials an organization must reduce to written form an appropriate program or procedure for safeguarding the material. These plans and procedures will then serve as a basis for hiring appropriate personnel and procuring necessary equipment so that the materials can be adequately safeguarded. These written procedures must be reviewed by the safeguarding agency to insure itself that adequate safeguards provisions have been made. The written procedures are evidence that the organization receiving special nuclear materials has given adequate thought and planning to the problem, and adequately understands methods whereby the materials will be safeguarded. Recent amendments to 10 CFR 70 will generally bring all domestic activities under this requirement. Both Euratom and IAEA incorporate a requirement for prior review of the accounting control procedures.

2. The safeguarding agency should have the right to review construction plans and to conduct physical inspection during construction of proposed plants that will use, store or produce special nuclear materials.

Commentary.—The construction of new plants or substantive modification of old facilities may significantly influence the ability to physically secure and to account for the materials. Hence, construction plans should be reviewed to ensure that these aspects of safeguards are adequately included in the planned construction. Also, on-site inspections should be made to ensure that the safeguards features are appropriately built into the facility.

Current AEC regulations provide for pre-construction review of utilization and production facilities only, and then solely for health and safety purposes. The Euratom and IAEA safeguards systems provide for a review of construction plans and include inspection during construction.

3. Physical transfers of special nuclear materials between possessors must be documented. The shipper and the receiver in each case should independently measure the quantities transferred and provide the safeguarding agency with the transfer date on a current basis.

Commentary.—An independent measurement of transfers eliminates the need for the safeguarding agency to rely entirely on the data provided by a single facility. Both domestically and internationally, the need for independent shipper and receiver measurements is recognized and incorporated in the various safeguards programs.

4. A material balance, including a statement of inventory, transfers, production, losses, and other data affecting the material balance, should be reported periodically to the safeguarding agency. The required frequency of such reports should depend upon the material quantities in inventory, and the form and through-put of the materials.

Commentary.—A material balance statement appropriately developed and supported reflects the degree of control being achieved over special nuclear materials much as the profit and loss statement reflects the economic health of an organization. The frequency of such reports should bear a relationship to the degree of risk for diversion associated with the operation. For the major installations, any frequency less often than monthly would seem to be inappropriate.

With adoption of proposed amendments to 10 CFR 70, all domestic materials will be covered by a requirement for a material balance statement. The frequency of reporting should be reviewed with a view to optimizing the utility of the information. Internationally, both IAEA and Euratom require routine material balance statements.

5. Physical inventories must be taken periodically by the possessor to verify the existence of the material and the validity of his records, and where indicated, adjustments must be made to the inventory records. The results of such inventories should be reported to the safeguarding agency and the data should be retained for audit. The frequency of such inventories should depend upon the form of the material and the ease with which the material may be diverted.

Commentary.—If the material balance statement is to appropriately reflect the degree of control being achieved, it must be based upon a physical inventory

of the materials on hand. If independent shipper and receiver measurements have been made, and a physical inventory has been taken which can be tested and verified by the safeguarding agency, then the materials discarded, measured losses, and materials unaccounted for become true indicators of the degree of control achieved by the organization, and the safeguarding agency is in a position to make a judgment as to the adequacy of the control.

With recent changes in the regulatory program, virtually all domestic materials will be covered by a physical inventory requirement. Internationally, while physical inventories are not explicitly required, all inventories are physically verified periodically by the IAEA and Euratom.

6. Unmeasured quantities, or quantities estimated only with large potential errors, should not be permitted to accumulate to significant amounts in the physical inventory.

Commentary.—The material balance statement is highly sensitive to the statement of physical inventory. The degree of control achieved at any facility is directly dependent upon the validity of the physical inventory. Consequently, confidence in control is inversely proportional to the unmeasured quantities or quantities with large limits of error. At the present there are no formal criteria either domestically or internationally with respect to action limits for such quantities nor are there any general policies or procedures specifically relating to this problem in the international programs

7. The safeguarding agency must have the right to examine and inspect all facilities using, storing or producing special nuclear materials at all times to currently appraise all elements of internal control and to examine and verify to the extent deemed appropriate: records and reports, inventories, losses, physical protection, authorized use of material and any other matters related to special nuclear materials safeguards.

Commentary.—Without free access to all facilities, materials and data relating to the utilization of special nuclear materials, the safeguarding agency is in no position to render an independent judgment as to the adequacy of the safeguards or the appropriateness of the utilization of the materials. Both the domestic and international safeguards programs make provision for this right of access and examination.

8. The safeguarding agency must make independent tests of measurement procedures and inventory. Consequently, it must have available to it an independent laboratory to prepare standard samples and process inventory samples.

Commentary.—Without an independent test of the measurement procedures and a physical inventory, the safeguarding agency is in no position to render an independent opinion concerning the adequacy of control of the materials. Domestic and international safeguards programs currently provide for such tests. An AEC analytical qualification program is currently underway which should expand the number of laboratories available to support the domestic testing program.

9. In implementing the safeguards system, the effort applied should take cognizance of the quantities in inventory, through-put, the different forms and combinations of material and its suitability for weapons use. Where quantities, forms or through-put of materials are not of strategic importance, the plant or site should be exempt from safeguards.

Commentary.—It is inappropriate to waste manpower and effort applying detailed safeguards procedures to small quantities of materials or to forms of material having little strategic importance. It is equally inappropriate to apply casual surveillance and infrequent material balance requirements to massive quantities of strategically valuable materials. A proper balance must be struck and the application of the safeguarding effort should be optimized in a manner appropriate for the form and quantities of materials safeguarded.

In the past, the policy and procedures of the AEC did not take sufficient cognizance of minimum quantities especially in providing for exemptions from safeguards requirements. Recent amendments to the regulations, which extended more definitive safeguards coverage to privately owned material, recognize differences in quantities (requirements are imposed if the quantity is in excess of 5,000 grams of contained special nuclear materials) and form (materials incident to the operating of a reactor or in the form of sealed sources are exempted from certain requirements).

Both the IAEA and Euratom procedures provide for special handling in the case of small quantities of materials. Inspections are scheduled in accordance with the quantities and form of the materials handled at the facilities.

10. The safeguarding agency must insist on the maintenance of, and continually evaluate, safeguard control indicators such as shipper-receiver differences, material unaccounted for, and process losses. These are integral parts of the safeguards system. Unusual quantities in these categories must be reported and investigated, and follow up actions taken to correct deficiencies.

Commentary.—A continuing review of these indicators of control will place the safeguarding agency in a position of recognizing unusual circumstances. An immediate follow-up when such unusual circumstances are recognized will ensure timely detection of diversions or early recognition of circumstances which might contribute to a potential diversion.

In the case of non-licensed contractors, AEC procedures require the maintenance of the necessary information and provide for routine AEC review of the safeguard control indicators. With recent amendments to the regulations, all licensees are also required to maintain the necessary information, and under the April, 1966 agreement between the Director of Regulation and the General Manager, a review of these indicators was extended to all licensees (37).

Such data are routinely supplied to IAEA and Euratom by each significant nuclear facility. Special reports are required whenever the quantities become exceptional. However, the lack of a requirement by these agencies for a physical inventory to be associated with the material balances reduces the utility of material unaccounted for data. Nonetheless, it should be noted that periodic verification of physical inventories by these agencies minimizes the reliance they place on such indicators. Future demands on manpower may force more reliance of these indicators and, hence, impose physical inventory requirements.

11. Physical protection to guard against the theft, diversion and unauthorized use of special nuclear materials is needed. Guards, fences, vaults, locks, seals, or use of sophisticated electronic, mechanical or other protective sealing or alarm devices are all protective measures which should be applied where appropriate.

Commentary.—Unauthorized physical movement of material can be deterred and detected by such means. Domestically such physical protection is important because once moved outside of authorized channels there are no other physical barriers to protect against transfer out of the country.

The AEC has depended in large measure upon the financial value of the material and the criminal penalties of the Atomic Energy Act of 1954, to assure that licensees establish adequate protection for the materials, except that physical protection standards have been prescribed for AEC contractors handling materials without financial responsibility. Although the Panel understands that experience to date under these policies and procedures has been good, the Panel recommends that minimum standards for physical protection be developed and applied.

There is no requirement under either of the international safeguards programs for physical protection of the materials, although each nation is required to guarantee that the materials will not be transferred into the hands of unauthorized parties.

12. All personnel having access to significant quantities of special nuclear materials should be subject to a security check equivalent to the present "L" clearance procedures.

Commentary.—One means of minimizing the probability of criminal diversion of special nuclear materials is to ensure that the individual is loyal and has no prior record of criminal activities. The type of security check equivalent to the present "L" clearance procedures provides this type of assurance. Obviously with respect to the international systems this type of assurance has no merit as regards protection against the diversion of materials for national objectives of the country granting these clearances.

In the case of cost-type contractors, such procedures are in effect. However, there is no requirement that licensees follow such procedures, although many licensees have voluntarily provided such security checks.

Neither the IAEA nor the Euratom programs formally require a security clearance of employees in the plants subject to safeguards. However, national interests generally will assure such clearances, and the practice of many countries to maintain complete dossiers on individuals will automatically provide such a check.

13. Appropriate penalties and sanctions should be available, and the organizational structure of the safeguarding agency should be such as to assure that appropriate and timely action will be taken, in the event of recognized deficiencies in nuclear materials handling and accountability systems, and in the event of deficiencies in the safeguards detection program.

Commentary.—It is essential that when such deficiencies are recognized that the safeguarding agency be in a position to move rapidly and have available appropriate sanctions so that an early correction of the deficiency can be achieved. Otherwise, control can be lost, a potential for diversion developed, and actual diversions obscured.

The responsibility for safeguards policy establishment and implementation is presently divided between the General Manager and the Director of Regulation. Within the Office of the General Manager, two Assistant General Managers have responsibility for safeguards, one in the area of domestic safeguards and one in the area of international safeguards. With such a diffusion of responsibility, overlaps, omissions, varying standards and varying objectives have resulted. Similarly, and perhaps as a consequence, it appears that in some licensee and contractor organizations safeguards have not had the high level management attention appropriate for the problem.

Responsibility for the safeguards program in IAEA and Euratom is clearly defined and appropriately placed in the structure of each organization. The available sanctions as applied to nations appear to the Panel to be appropriate. There are no criminal sanctions provided in the IAEA and Euratom programs.

14. Penalties for improper use of special nuclear materials must be severe enough to be a significant deterrent to diversion.

Commentary.—An individual or organization contemplating diversion will not only weigh the risks of detection, but also the consequences of detection. If the penalty is large enough, it will act as a significant deterrent to diversion.

Under the Atomic Energy Act of 1954, severe penalties (including death) are applicable to the diversions intended to injure the U.S. or to provide advantage to a foreign power. However, where the intent is simple personal gain, such as the theft of material for intended sale in the black market, the five years and/or $10,000 fine appear to be inadequate.

The penalties for improper use of special nuclear materials established under the IAEA and Euratom systems include the interruption of cooperation with the nation and the recovery of the IAEA and Euratom distributed materials. The severity of such penalties is highly dependent upon the credibility of their implementation. With regard to the penalties employed by nations against its peoples, there are no provisions for establishing standards or for evaluating current national programs.

15. There should be provision for a reward for information regarding diversions of special nuclear materials to unauthorized use.

Commentary.—If diversion is about to take place or has taken place, information relating to it from persons having personal knowledge of the circumstances is vital to the safeguards program. Personal gain, political gain, patriotism are all motives which may result in the provision of such information. Of these, perhaps personal gain is the strongest, although all possible motives should be reinforced.

There presently is no provision for reward for such information. The Atomic Weapons Rewards Act does provide for rewarding an individual for information with regard to the importation of a nuclear weapon or the construction within the continental limits of a nuclear weapon, but it is completely silent on the diversion of special nuclear materials for unauthorized use.

Neither of the international agencies have any such reward provisions.

16. There should be provision for incentive awards for exercising good safeguards over special nuclear materials.

Commentary.—When work is performed for the AEC under contract, such contracts should provide financial incentives for good safeguards practices. For example, graduated fees based upon quantities of lost or unaccounted for special nuclear materials would stimulate better material control measures. Also, penalties could be imposed for material not returned to AEC in acceptable forms at the conclusion of the contract.

17. There should be a mechanism for prompt notification of the safeguarding agency by the investigative and intelligence agencies regarding potentials for diversion, suspected, attempted or planned diversions, or the fact of a diversion, as well as coordinated programs for recovery of diverted material and apprehension of divertors whenever politically possible.

Commentary.—Properly coordinated information from the intelligence community can potentially forewarn the agency of the potential diversion, and hence, provide for the reinforcing of the many safeguards features to deter or detect a diversion. Once detected, a properly coordinated intelligence community will materially assist in the pursuit of the material and apprehension of the divertors.

There presently is an informal relationship between the AEC and most of the interested government agencies, but there is no formal mechanism established at a sufficiently high level in the interested organizations to assure that the safeguards program gets the attention it warrants.

There is no indication that the international agencies have access to intelligence information except on an informal voluntary basis.

APPENDIX 4

Domestic Safeguards Program

AEC-Owned Plants

AEC contractors are required to describe the procedures they will follow in accounting for special nuclear materials. Procedures manuals are subject to the approval of the manager of the AEC Regional Office. Certain basic accountability requirements are common to all contractors; they vary only in degree. These basic requirements are: the recording and reporting of transactions, inventories and losses; maintenance of adequate internal control, measurement, and physical inventory procedures (at the option of the manager of the AEC regional office a physical inventory may be required each month; however, in no case may the interval between inventories exceed 12 months); prompt and accurate detection and estimation of special nuclear materials losses and evaluation of loss mechanisms; and the institution of corrective measures to reduce special nuclear materials losses.

In addition to the requirements for accountability control of material, AEC contractors who are not financially responsible for the special nuclear materials that they possess are required to apply certain minimum physical security standards to their operations. In the case of contractors possessing as much as 1 kilogram (kg) of uranium 233 or plutonium, or 5 kgs. of uranium 235 in the form which may be used directly as nuclear explosives or can be prepared for such use by simple metallurgical, chemical or mechanical processing steps, the following requirements apply:

In storage.—Continuous armed guard control; or combination locked repositories, or apparatus or equipment offering equivalent protection, located in areas under hourly armed guard patrol or automatic alarm protection.

In transit.—In custody of armed escort.

In use.—Within a limited security area such that unauthorized persons could not remove, without detection, a significant quantity of material from the area.

Clearance.—"L" clearances of access authorizations for guards, escorts, accountability representatives and custodians.[1]

Less stringent requirements apply to special nuclear materials in forms which may not be used directly as nuclear explosives.

The General Manager discharges the functions of recommending, implementing and assuring the implementation of Commission policy and procedures for the safeguarding of special nuclear material in AEC contract operations. The organizational components under the General Manager responsible for discharging these functions are the Divisions of Nuclear Materials Management and Security, and Managers of Operations.

Licensee

Under present AEC regulations, all licensees are required to maintain records of receipts, transfers and inventories of material, and to report losses other than normal operating losses. Licensees who possess material distributed under Section 53 of the Act are required to submit transfer and periodic status reports. The Commission has issued for public comment proposed amendments to its regulations which, if adopted, would require such reports to be filed for all special nuclear materials which are privately owned.

In addition to the above, on February 3, 1967, the Commission issued amendments to its regulations to codify in the regulations certain accountability requirements heretofore imposed on licensees by lease or contract provisions with respect to Government-owned material. Under the new amendments each licensee, who is authorized to possess a quantity exceeding 5000 grams of contained uranium 235, uranium 233, plutonium, or any combination thereof, is required to:

[1] For classified materials, special clearances are required by AEC.

(*a*) establish and maintain written material control and accounting procedures to account for the special nuclear materials in his possession;

(*b*) submit a full description of his procedures for control of and accounting for special nuclear materials (required only for activities other than those involved in the operation of a nuclear reactor or as sealed sources);

(*c*) identify to AEC the fundamental controls which he considers essential for assuring that special nuclear materials in his possession are adequately safeguarded (as in (*b*) above not required for certain activities); and

(*d*) perform an inventory not less often than annually.

Licensees are not required by present regulations to apply prescribed physical security standards to protect special nuclear materials in their possession. The health and safety regulations of AEC, however, require that access to special nuclear materials be adequately controlled by licensees so that materials stored in any unrestricted area be secured against unauthorized removal.

The Director of Regulation has been delegated the Commission's licensing and regulated regulatory responsibilities for the protection of the public health and safety and the common defense and security. The organizational components responsible for discharging these functions are the Divisions of Materials Licensing, Reactor Licensing, Reactor Standards, Compliance, Radiation Protection Standards, and State and Licensee Relations.

Under a working agreement between the Director of Regulation and the General Manager, the expertise of the General Manager's nuclear materials management organization is utilized by the Director of Regulation in implementing and administering safeguards controls over the special nuclear materials in the hands of licensees.

APPENDIX 5

International Distribution of Special Nuclear Materials

Section 123 of the Atomic Energy Act provides that special nuclear materials, and production and utilization facilities, may not be transferred to any nation (or group of nations) unless an agreement for cooperation, approved by the President and submitted to the Joint Committee on Atomic Energy, has been executed. Each agreement for cooperation for peaceful uses of atomic energy is required to include a guarantee that any material transferred pursuant to the agreement will not be used for atomic weapons or for research on or development of atomic weapons, or for any other military purpose. In addition, each agreement is required to include a guarantee that the material will not be transferred to unauthorized persons or beyond the jurisdiction of the cooperating nation or group of nations, except as specified in the agreement.

The Atomic Energy Act does not require that the U.S. exercise any effort to assure that the specified guarantees in agreements for cooperation are fulfilled by the cooperating nations. The Atomic Energy Commission has, however, as a matter of policy, included in all comprehensive agreements (except those with Canada, the United Kingdom, the European Atomic Energy Community and the International Atomic Energy Agency) "safeguards" provisions that give the U.S. the right to send U.S. inspectors into the cooperating nations. Inspectors have access at all times to all places and data as necessary to account for the special nuclear materials, and to determine that the guarantees are in fact being observed. In addition to the right of inspection, important supplementary rights are provided, including.

- the right to approve the design of facilities from the standpoint of effective application of safeguards;
- the right to require the maintenance of appropriate records; and
- the right to approve the means for reprocessing special nuclear materials.

In recent years as each agreement for cooperation has been renewed, the U.S. has sought to secure agreement with the cooperating nation that safeguards should be implemented by the International Atomic Energy Agency (IAEA), rather than by U.S. inspectors.

In addition to bilateral agreements between the U.S. and individual nations, and between the U.S. and the IAEA, the U.S. several years ago entered into an agreement with the European Atomic Energy Community (Euratom). Under this agreement the Euratom organization is responsible for implementing safeguards over special nuclear materials supplied by the U.S. to the Euratom Supply Agency for use in the Euratom nations of Belgium, France, Italy, Luxem-

burg, the Netherlands, and West Germany. The U.S.-Euratom agreement for cooperation requires that the Euratom safeguards system shall be reasonably compatible with that of IAEA. Euratom is obliged to consult with AEC in formulating and implementing its safeguards system. The U.S. has the right to verify by mutually approved scientific methods the effectiveness of the safeguards being applied by Euratom to U.S. supplied special nuclear materials.

The safeguards systems applied to special nuclear materials transferred by the U.S. to other nations have the following common elements:

- An examination of the design of facilities to assure that special nuclear materials will not be used for any military purpose and that effective safeguards controls can be applied;
- the maintenance and inspection of operating records to assure that special nuclear materials are properly accounted for;
- the periodic filing of reports on special nuclear materials received, produced and on hand, from installations where special nuclear materials are used;
- the right to approve the means to be followed in reprocessing irradiated fuel;
- periodic on-site inspection of plants where special nuclear materials are used and periodic independent verification of the inventories of special nuclear materials; and
- access rights at all times to all persons, places and data that are relevant to the use of special nuclear materials.

AEC's Division of International Affairs is responsible for administering the program of safeguards under agreements for cooperation, including (1) development of the systems to be employed, (2) implementation of "bilateral" safeguards, including the maintenance of records and receipt of reports, and conducting on-site inspections, and (3) liaison with IAEA and Euratom. Continuing efforts are made to achieve compatability between the U.S. bilaterals, Euratom and IAEA systems.

APPENDIX 6

Euratom Safeguards

Euratom is responsible for assuring that its safeguards system is reasonably compatible with that used by IAEA. Article XII. A., of the U.S.-Euratom Agreement for Cooperation states "* * * In establishing and implementing its safeguards and control system, the Community is prepared to consult with and exchange experiences with the International Atomic Energy Agency with the objective of establishing a system reasonably compatible with that of the International Atomic Energy Agency. * * *"

Euratom is also obliged to consult with the U.S. in formulating and implementing its safeguards system. The U.S. has the right to verify by mutually approved scientific methods the effectiveness of the safeguards being applied by Euratom to U.S.-supplied material. This right is based on Article XII. C. of the Agreement which states "The Parties agree that there will be frequent consultations and exchanges of visits between the Parties to give assurance to both Parties that the Community's safeguards and control system effectively meets the responsibility and principles stated in paragraph A of this Article and that the standards of the materials accountability systems of the Government of the United States of America and the Community are kept reasonably comparable." By an exchange of letters in June 1958, the understanding of the Euratom Commission was confirmed to be that the consultations and exchanges of visits agreed upon in that section include permission by each Party for the other Party to verify by mutually approved scientific methods the effectiveness of the safeguards and control system applied to special nuclear materials received from the other Party or to fissionable material derived from these fissionable materials. There have been frequent consultations between U.S. and Euratom safeguards groups starting in 1959 and the U.S. not only has been kept informed of all aspects of the Euratom safeguards system but also has influenced the actual development of the system to meet the standards acceptable to the United States

With the increasing quantities of U.S.-supplied materials being placed under Euratom safeguards, arrangements were started in 1964 to obtain more detailed information as to the effectiveness of the implementation of safeguards by Euratom. In January 1965 it was decided to establish a U.S.-Euratom Joint Technical Working Group to explore at the technical working level what mutually approved scientific methods could be employed to verify the effectiveness of the

safeguards and control systems. From three to four individuals from the U.S. and about the same number from Euratom have constituted the working group. The working group has met four times and visited two facilities under Euratom safeguards control to familiarize the U.S. with the practical application of safeguards by Euratom. One of the working group meetings held in February, 1966, was devoted to the application of continuous inspection by Euratom at the Eurochemic chemical processing plant at Mol, Belgium. An exercise at Ispra, Italy, in July, 1966, provided the U.S. with accounting data on U.S.-supplied special nuclear materials for comparison with U.S. data. Also, samples of special nuclear materials were provided for analysis in U.S. and Euratom laboratories. At Karlsruhe, West Germany, in November, 1966, U.S. members visited the Euratom Transuranium Institute, a plant that had just completed the fabrication of about 170 kilograms of plutonium for a French fast critical assembly. Accountability plans were demonstrated and the Euratom safeguards inspection procedures were described. As at Ispra, samples of U.S.-supplied plutonium were provided for analysis in U.S. and Euratom laboratories. A future meeting of the Technical Working Group has been planned for the spring of 1967, in the United States. The application of safeguards procedures to fuel fabrication plants will be discussed at that meeting.

There has been an increasing number of contacts between the Euratom and IAEA safeguards staffs during the past two years. For example, in August, 1965, at the invitation of IAEA, Euratom inspectors attended an IAEA symposium on Nuclear Materials Management. In February, 1966, IAEA inspectors, at the invitation of Euratom, visited the Eurochemic chemical processing plant at Mol, Belgium. In December, 1966, a two-day safeguards meeting held in Salzburg, Austria, was attended by safeguards inspectors from the U.S., Euratom, IAEA and Canada.

APPENDIX 7

Comparison of the IAEA Safeguards System and the Euratom Safeguards System

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COMPARISON OF THE EURATOM SAFEGUARDS SYSTEM AND THE IAEA SAFEGUARDS SYSTEM

IAEA safeguards	EURATOM safeguards		Comment
	Euratom Treaty	Euratom-U.S. bilateral	
1. Objective of organization: "The Agency shall seek to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world." (Statute, art. II.)	"It shall be the aim of the Community to contribute to the raising of the standard of living in Member States and to the development of commercial exchanges with other countries by the creation of conditions necessary for the speedy establishment and growth of nuclear industries." (Art. 1.)	"The Parties (U. S. and Euratom) will cooperate in programs for the advancement of the peaceful applications of atomic energy." (Art. 1, original agreement which entered into force Aug. 27, 1958.)	IAEA and Euratom-U.S. bilateral restrict to peaceful use only. Euratom Treaty does not restrict to peaceful use only.
2. Aims of safeguards system: "It shall ensure, so far as it is able, that assistance provided by it or at its request or under its supervision or control is not used in such a way as to further any military purpose." (Statute, art. II.)	"The Community shall guarantee, by appropriate measures of control, that nuclear materials are not diverted for purposes other than those for which they are intended." (Art. 2.e.)	"The Community undertakes the responsibility for establishing and implementing a safeguards and control system designed to give maximum assurance that any material, equipment or devices made available pursuant to this Agreement and any source or special nuclear material, equipment and devices, shall be utilized solely for peaceful purposes." (Art. XII.)	The Euratom Treaty establishes as the aim of safeguards assurance that materials are not diverted to uses other than those to which they are intended without placing any limitation on permissible intended purposes. As far as U. S. supplied material is concerned, however, the U.S.-Euratom bilateral limits the use to peaceful purposes.
3. General principles: "To establish and administer safeguards designed to ensure that special fissionable and other materials, services, equipment, facilities, and information made available by the Agency or at its request or under its supervision or control are not used in such a way as to further any military purpose; and to apply safeguards, at the request of the parties, to any bilateral or multilateral arrangement, or at the request of a State, to any of that State's activities in the field of atomic energy." (Statute, art. III.A.5.) The principal factors to be considered by the Board in determining the relevance of particular provisions of the safeguards system to various types of materials and facilities shall be the form, scope and amount of assistance supplied, the character of each individual project and the degree to which such assistance could further any military purpose. (INFCIRC/66, par. 17.)	"The Commission shall satisfy itself that in the territories of Member States: (a) Ores, source materials and special fissionable materials are not diverted from their intended uses as stated by the users; and (b) the provisions concerning supplies and any special undertaking concerning measures of control entered into by the Community in an agreement concluded with a third country or an international organization are observed." (Art. 77.) "No discrimination shall, in the exercise of control, be made on the ground of the purpose for which ores, source materials and special fissionable materials are intended. Control may not extend to materials intended for the purposes of defense which are in course of being specially prepared for such purposes or which, after being so prepared, are, in accordance with an operational plan, installed or stocked in a military establishment". (Art. 84.)	"The Community guarantees that: No material, including equipment and devices, transferred pursuant to this Agreement to the Community or to persons within the Community, will be used for atomic weapons, or for research on or development of atomic weapons, or for any other military purpose." (Art. XI.)	IAEA safeguards are applied only to facilities and material covered by an agreement between the IAEA and a member state. IAEA safeguards are made applicable to U.S. supplied materials and equipment by a "safeguards transfer agreement." Euratom Treaty covers all facilities (except weapons establishments) and materials in the Community except those "intended for the purpose of defense." Euratom safeguards apply to material and equipment supplied to Euratom Supply Agency under the U.S.-Euratom additional agreement and the exceptions mentioned above cannot be arranged.

IAEA safeguards	EURATOM safeguards		Comment
	Euratom Treaty	Euratom-U.S. bilateral	
4. Safeguard inspection arrangements: IAEA arrangements for inspection of facilities containing safeguarded material are made through and with the participation of the government of the member state. Under certain conditions the IAEA may make unannounced inspections. (See item 12. See also INFCIRC/66, par. 57 and GC(V)/INF/39, par. 4.)	Euratom arrangements for inspection of facilities containing safeguarded material are made directly with the appropriate personnel at the facilities. There is no intervention by the state governments, but government representatives may accompany the inspectors. Thus, in practice the governments must be advised of the visits. (See art. 81.)	Similar to Euratom Treaty obligations----------	
5. Design review: The Agency shall have the right and responsibility "To examine the design of specialized equipment and facilities, including nuclear reactors, and to approve it only from the viewpoint of assuring that it will not further any military purpose, that it complies with applicable health and safety standards, and that it will permit effective application of the safeguards provided for in this article." (Statute, art. XII.A.1.) "The Agency shall review the design of principal nuclear facilities, for the sole purpose of satisfying itself that a facility will permit the effective application of safeguards." (INFCIRC/66, par. 30) "It shall complete the review promptly after the submission of this information by the State and shall notify the latter of its conclusions without delay." (INFCIRC/66, par. 32.)	"Anyone setting up or exploiting facilities for the production, separation or use of source materials or special fissionable materials, or for the processing of irradiated nuclear fuels, shall make a declaration to the Commission setting out the basic technical characteristics of such facilities to the extent that such information is necessary" * * * to assure they are not diverted from their intended use. (Art. 78.) The above-mentioned declaration is implemented by a regulation (No. 7) and attached questionnaire which lists in detail the specific technical information to be submitted.	"The Euratom Commission will: Examine the design of equipment, devices and facilities, including nuclear reactors, and approve it for the purpose of assuring that it will permit the effective application of safeguards, if such equipment, devices and facilities: (a) are made available pursuant to this agreement; or (b) use, process or fabricate any of the following materials received from the United States: source or special nuclear material, moderator material or any other material relevant to the effective application of safeguards; or (c) use any special nuclear material produced as the result of the use of equipment or material referred to in subparagraphs a and b." (Annex B, par. 1.)	The significance of "anyone" is that Euratom deals directly with pertinent person involved with the activity.
6. Records: "The State shall arrange for the keeping of records with respect to principal nuclear facilities and also with respect to all safeguarded nuclear material outside such facilities. For this purpose the State and the Agency shall agree on a system of records with respect to each facility and also with respect to such material, on the basis of proposals to be submitted by the State in sufficient time to allow the Agency to review them before the records need to be kept." (INFCIRC/66, par. 33.)	"The Commission shall require the maintenance and production of operating records in order to permit accountability for ores, source materials and special fissionable materials used or produced. The same shall apply to the transport of source materials and special fissionable materials." (Art. 79.) The above requirements are implemented by a regulation (No. 8) which states that records must be maintained which will enable the producers or users to submit suitable reports to the Euratom Commission.	The Euratom Commission will require "the maintenance and production of operating records to assure accountability for source or special nuclear material made available, or source or special nuclear material used, recovered, or produced as a result of the use of source or special nuclear material, moderator material or any other material relevant to the effective application of safeguards, or as a result of equipment, devices and facilities made available pursuant to this Agreement."	In practice the records kept under Euratom safeguards are very similar to those kept under IAEA safeguards.

7. Reports: The Agency shall have the right and responsibility "To call for and receive progress reports;". (Statute, art. XII.A.4.) "The State shall submit to the Agency reports with respect to the production, processing and use of safeguarded nuclear material in or outside principal nuclear facilities." (INFCIRC/66, par. 37.) Special procedures apply to the reports pertaining to reactors. "The frequency of submission of routine reports shall be agreed between the Agency and the State, taking into account the frequency established for routine inspections. However, at least two such reports shall be submitted each year and in no case shall more than 12 such reports be required in any year. (INFCIRC/66, par. 55.)	Producers of ores and producers and users of source materials or special fissile materials shall report to the Commission detailed information regarding material production, inventories, transfers, locations and losses. (Regulation No. 8.)	The Euratom Commission will require "that progress reports be prepared and delivered to the Euratom Commission with respect to projects utilizing material, equipment, devices and facilities referred to in par. 2 of this Annex." (Item 6 above) (Annex B, par. 3.)	The Euratom Treaty specifies when certain reports shall be submitted; this requirement applies to all member states IAEA and the states reach agreement individually on the reporting frequency; for CPP the routine reports shall be submitted monthly to the IAEA. The IAEA and the Euratom-U.S. bilateral require use reports; the Euratom Treaty does not.
8. Approval of CPP processes: The IAEA statute states that the Agency shall have the right and responsibility "to approve the means to be used for the chemical processing of irradiated material." (Statute, art. XII.A.5.)	"The processes to be used for the chemical processing of irradiated material shall be subject to the approval of the Commission." (Art. 78.)	----------	These provisions are comparable.
9. Stockpile storage: The IAEA statute states that the Agency shall have the right "To require deposit with the Agency of any excess of special fissionable materials recovered or produced as a byproduct over what is needed * * * in order to prevent stockpiling of these materials." (Statute, art. XII.A.5.)	The Euratom Treaty states that "The Commission may require that any excess of any special fissionable materials recovered or produced as a byproduct, not being actually in use or ready for use, be deposited with the (Euratom Supply) Agency or in storage premises which are or can be controlled by the Commission." (Art. 80.)	The Euratom Commission will "require the deposit and storage, under continuing safeguards, in Euratom facilities of any special nuclear material referred to in paragraph 2 of this Annex which is not currently being utilized for peaceful purposes in the Community or otherwise transferred as provided in the Agreement for Cooperation between the Government of the United States of America and the Community." (Annex B, par. 4.)	Do.
10. Inspectorate and duties: The IAEA statute states that "The Agency shall as necessary, establish a staff of inspectors." (Art. XII.B.) The staff of inspectors shall have the responsibility of accounting for the material supplied and verifying that facilities and materials subject to safeguards are not used in furtherance of any military purpose. (Statute, art. XII.A.6.)	The Euratom Treaty states that "Inspectors shall be recruited by the Commission". The inspectors shall have the responsibility of obtaining and verifying the accountability for ores, source materials and special fissionable materials used or produced. (See art. 82).	The Euratom Commission will establish an inspection organization as "necessary to assure accounting for source or special nuclear material . . . to determine whether there is compliance with the guarantees of the Community. The inspection organization will also be in a position to make and will make such independent measurements as are necessary to assure compliance with the provisions of this Annex and the Agreement for Cooperation." (Annex B, par. 5.)	Under the IAEA and the EURATOM-U.S. bilateral the inspectors must verity material and facility use. Under Euratom Treaty the inspectors have material accountability responsibilities.

IAEA safeguards	EURATOM safeguards		Comment
	Euratom Treaty	Euratom-U.S. bilateral	
11. Appointment of inspectors: "The Director General of the IAEA shall inform the State in writing of the name, nationality and grade of the Agency inspector proposed, shall transmit a written certification of his relevant qualifications and shall enter into such other consultations as the State may request." (GC(V)/INF/39, par. 1.) "If a State, either upon proposal of a designation or at any time after a designation has been made, objects to the designation of an Agency inspector for that State, it shall inform the Director General of its objection." (GC(V)/INF/39, par. 2.)	The Commission shall, "prior to the first visit of an inspector to the territories of any State, enter into consultations, which shall cover all future visits of this inspector, with the Member State concerned." (Art. 81.)	----------	
12. Access by inspectors: The IAEA shall have the right and responsibility "To send into the territory of the recipient State or States inspectors, designated by the Agency after consultation with the State or States concerned, who shall have access at all times to all places and data and to any person who by reason of his occupation deals with materials, equipment, or facilities which are required by this Statute to be safeguarded, as necessary to account for source and special fissionable materials supplied and fissionable products and to determine whether there is compliance with the undertaking against use in furtherance of any military purpose." (Statute XII.A.6.) (See also GC(V)/INF/39, par. 9.)	"On presentation of their credentials, inspectors shall at all times have access to all places and data and to any person who by reason of his occupation deals with materials, equipment or facilities subject to the control provided for in this Chapter, to the extent necessary to control ores, source materials and special fissionable materials, and to satisfy themselves" that the items are not diverted from their intended uses as stated by the users. (Art. 81.)	The Euratom Commission will establish "an inspection organization which will have access at all times: (a) to all places and data, and (b) to any person who by reason of his occupation deals with materials, equipment, devices or facilities safeguarded under this Agreement, necessary to assure accounting for source or special nuclear material subject to paragraph 2 of this Annex and to determine whether there is compliance with the guarantees of the Community." (Annex B, par. 5.)	
13. Accompaniment of inspectors: "Inspectors designated by the Agency shall be accompanied by representatives of the State concerned, if that State so requests, provided that the inspectors shall not thereby be delayed or otherwise impeded in the exercise of their functions." (Statute, art. XII, par. 6).	"Inspectors appointed by the Commission shall be accompanied by representatives of the authorities of the State concerned, if that State so requests, provided that the inspectors shall not thereby be delayed or otherwise impeded in the exercise of their functions." (Art. 81).	----------	The IAEA may make unannounced inspections when the Agency has the right of access at all times.

14. Notice of inspections: "The State shall be given at least one week's notice of each inspection, including the names of the Agency's inspectors, the place and approximate time of their arrival and departure, and the facilities and materials to be inspected. Such notice need not exceed 24 hours for any inspection to investigate any incident requiring a 'special inspection'." (GC(V)/INF/39, par.4).			Euratom Treaty does not specifically state that any notice need be given prior to an inspection. However, since "inspectors appointed by the Commission shall be accompanied by representatives of the authorities of the State concerned, if that State so requests", some notice is, obviously necessary. Under certain conditions the IAEA may make unannounced inspections.
15. Privileges and immunities of inspectors: "Agency inspectors shall be granted the privileges and immunities necessary for the performance of their functions. Suitable provision shall be included in each project or safeguards agreement for the application, insofar as relevant to the execution of that agreement, of the provisions of the Agreement on the Privileges and immunities of the International Atomic Energy Agency excepting Articles V and XII thereof, provided that all parties to the project or safeguards agreement so agree." (GC(V)/INF/39, par. 13.)	"In the territory of each Member State and whatsoever their nationality, the officials and other employees of the Community * * * shall be immune from legal process for acts performed by them in their official capacity, including their words spoken or written; they shall continue to benefit from such immunity after their functions have ceased." (Art. 11, protocols.)		Euratom inspectors are covered by immunities as specified in the Euratom Treaty. The IAEA obtains agreement individually from each State on the privileges and immunities of inspectors.
16. Inspection report: "After an inspection has been carried out, the State concerned shall be duly informed by the Agency of its results. In case the State disagrees with the report of the Agency's inspectors, it shall be entitled to submit a report on the matter to the Board of Governors." (GC(V)/INF/39, par. 12.)			Euratom has advised that the practice is to allow the inspected facility to review the report in draft prior to its issuance.
17. Written inspection procedures: The IAEA specifies the general procedures to be used in routine, initial and special inspections. (See INFCIRC/66, par. 45–60.) The inspections include an audit of records and reports, verification of the amount of material by physical inspection, measurement and sampling, examination of facilities and instruments and a review of the facility operations.	Euratom plans inspections on a case-by-case basis and makes whatever reviews are necessary to verify the material and facilities are not being diverted from their intended use. The inspections include audit of records, piece count of fabricated plates and elements when possible, sampling of material, radioactivity check of material, chemical and spectrometry analyses when feasible, review of internal control methods at the facility and a check of measurement instruments.	Similar to Euratom Treaty obligations	

IAEA safeguards	EURATOM safeguards		Comment
	Euratom Treaty	Euratom-U.S. bilateral	
18. Inspection frequency: The frequency of inspections is based upon whichever is the largest of: (a) facility inventory; (b) annual throughput; (c) maximum potential annual production of special fissionable material. For reactors the maximum number of inspections per year is one for every 5 kilograms of nuclear material up to a total of 60 kilograms. Above 60 the Agency has right of access at all times. (See INFCIRC/66, par. 57.) Reprocessing plants having an annual throughput not exceeding 5 effective kilograms may be routinely inspected twice yearly; plants exceeding 5 kilograms may be inspected at all times. (See GC(X)/INF/86, par. 3.) Special inspections may be made under certain circumstances. (See INFCIRC/66, par. 53.)	The Euratom Treaty provides for access at all times. (See art. 81.)	----do----	
19. Noncompliance: "In the event of noncompliance and failure by the recipient State or States to take corrective steps within a reasonable time," the Board of Governors may "direct curtailment or suspension of assistance being provided by the Agency or by a member and call for the return of materials and equipment made available to the recipient member or group of members. The Agency may also suspend any noncomplying member from the exercise of the privileges and rights of membership. The Board shall report the noncompliance to all members and to the Security Council and General Assembly of the United Nations". (Statute, art. XII.)	In the event of noncompliance, the Commission may withdraw from the offending persons or enterprises "financial or technical assistance," may place the enterprise "under the administration of a person or board appointed by the Commission and the State" and may order "the complete or partial withdrawal of source materials or special fissionable materials." (Art. 83.) "Forced execution shall be governed by the rules of civil procedure in force in the State in whose territory it takes place." (Art. 164.)	"It is understood by the Parties that a continuation of the cooperative program between the Government of the United States of America and the Community will be contingent upon the Community's establishing and maintaining a mutually satisfactory and effective safeguards and control system which is in accord with the principles set forth in Annex "B" to this agreement." (Art. XII, par. E.)	
20. Circumstances requiring safeguards: Nuclear material shall be subject to Agency safeguards if it is being or has been: (a) supplied under a project agreement; (b) submitted to safeguards under a safeguards agreement by the parties to a bilateral or multilateral agreement; (c) unilaterally submitted to a safeguards agreement; (d) produced, processed or used in a principal nuclear facility to which any of the above three items apply; (e) produced in or by the use of safeguarded nuclear material; (f) substituted for safeguarded nuclear material. (See INFCIRC/66, par. 19.)	"The Commission shall satisfy itself that in the territories of Member States: ore, source materials and special fissionable materials are not diverted from their intended uses as stated by the users". (Art. 77.)	"The Community undertakes the responsibility for establishing and implementing a safe guards and control system designed to give maximum assurance that any material, equipment or devices made available pursuant to this Agreement and any source or special nuclear material derived from the use of such material, equipment and devices, shall be utilized solely for peaceful purposes". (Art. XII.)	

21. Exemptions from safeguards application: The Agency permits the exemption from safeguards at the request of the State concerned of nuclear material provided it does not at any time exceed: (a) 1 kilogram total of special fissionable material consisting of one or more of the following: Plutonium, or U^{235} (calculated from the uranium enrichment); (b) 10 metric tons of natural and depleted uranium (above 0.5%); (c) 20 metric tons of depleted uranium (0.5% or below); (d) 20 metric tons of thorium. With regard to reactors, produced or used nuclear material shall be exempted from safeguards if: (a) it is plutonium produced in the fuel of a reactor whose rate of production does not exceed 100 grams of Pu annually; (b) it is produced in a reactor having a maximum power of 3 MWt. (See INFCIRC/66, par. 21.)	----------	----------	Euratom has not specified any deminimus quantities to be exempted from the active implementation of safeguards. The IAEA exemption is concerned only with exempting the application of safeguards and not the peaceful use guarantee relating to the material in question.
22. Suspension of safeguards: Safeguards may be suspended while nuclear material is transferred within the State to another Member State or to an international organization provided the total at any time does not exceed: (a) 1 effective kilogram of special fissionable material; (b) 10 tons of natural and depleted uranium enriched above 0.5%; (c) 20 metric tons of depleted uranium below 0.5%; (d) 20 metric tons of thorium. Safeguards may be suspended on special nuclear material in irradiated fuel transferred for reprocessing if other nuclear material is substituted for it. (See INFCIRC/66, par. 24.)	The Euratom safeguards system does not employ the concept of suspension.	Similar to Euratom Treaty obligations----------	
23. Termination of safeguards: Safeguards will be terminated on nuclear material returned to the State that originally supplied it provided: It was not improved while under safeguards; special fissionable material produced in it has been removed; it was subject to safeguards only by reason of its use in a principal nuclear facility; it has been diluted or consumed so it no longer has safeguards significance; it has been replaced by substitute material; it has been transferred out of the States to the State that originally supplied it, safeguards have been suspended, it will be subject to safeguards other than those of the Agency but accepted by the Agency; the applicable safeguards agreement has expired. (See INFCIRC/66, par. 26.) In addition, safeguards may be terminated by State-Agency agreement on material to be used for nonnuclear purposes. (See INFCIRC/66, par. 27.)	Euratom Treaty safeguards terminate when the material is transferred out of the Community.	-----do----------	

IAEA safeguards	EURATOM safeguards		Comment
	Euratom Treaty	Euratom-U.S. bilateral	
24. Transfer of material out of State: No safeguarded nuclear material shall be transferred outside the jurisdiction of the State in which it is being safeguarded unless: (a) the material is being returned to the State that originally supplied it; or (b) the material is being transferred subject to substitution provisions; or (c) the material will be subject to Agency safeguards in the State to which it is being transferred; or (d) the material was not subject to safeguards pursuant to a project agreement and will be subject to other safeguards acceptable to the Agency in the State to which it is being transferred. (See INFCIRC/66, par. 28.)	Euratom safeguards follow all material transferred between any establishments in the Community if not for a military use If any material is transferred out of the Community, Euratom safeguards cease to apply. (See arts. 77 and 79.)	"No such material will be transferred to unauthorized persons or beyond the control of the Community, except as the Government of the United States of America may agree to such transfer and then only if the transfer of the material is within the scope of an Agreement for Cooperation between the Government of the United States of America and another nation or group of nations". (Art. XI.)	

APPENDIX 8

Institute of Nuclear Materials Management Program for the Safeguarding of Special Nuclear Materials

The prevention of proliferation of special nuclear materials for unauthorized uses may be broadly divided into two general problem areas: (1) prevention against diversion, and (2) detection of diversion.

Prevention is concerned primarily with physical security of special nuclear materials, while detection concerns accounting systems for special nuclear material, technical measurement systems for such material, inspection and audit systems, as well as intelligence activities.

The Institute has surveyed both the areas of prevention and detection of diversion of special nuclear materials for unauthorized uses with the objective of arriving at a safeguards program for the Institute, the results of which would contribute to the overall safeguards program of the United States.

The Institute believes that physical security, while important, will not deter the well trained agent. While some improvements in physical security protection are possible and desirable, the Institute believes that the more dependable means of detecting (and, by threat of detection, deterring) the diversion of special nuclear materials is through accurate material balances. The Institute will direct a major portion of its activities toward improving material balance techniques.

The Institute has concluded that its major contributions can be made in the area of systems for detection of diversion as opposed to the general subject of prevention of diversion. To this end, the Institute contemplates the following program:

(1) *The Institute will prepare a series of standard (or recommended) systems for accounting for strategic special nuclear materials.*—It is recognized that details of systems of accounting for nuclear materials will vary with the type of operation and therefore it is proposed to prepare a separate standard system of accounting for:

(*a*) Enrichment plants
(*b*) Conversion plants
(*c*) Fuel fabrication plants
(*d*) Reactors
(*e*) Reprocessing plants
(*f*) Shipments

(2) *The Institute will develop a series of standard measurement systems* for use in the activities listed in (1) above to establish the quantities of special nuclear materials involved, such that complete and accurate material balances around each of these activities can be accomplished. These measurement systems will involve both weight/volume determinations as well as sampling and analysis.

(3) *The Institute will prepare standard systems for the inventorying of special nuclear materials* in the various types of activities outlined in (1).

(4) *The Institute will establish standard inspection and audit systems* for policing the above described accounting, measurement and inventory systems.

(5) *The Institute will revise its procedures for the certification of nuclear materials managers* to incorporate a comprehensive written test concerning special nuclear material measurements, inventory techniques, accounting techniques, inspection and audit techniques, the economic significance of loss of special nuclear material, and the national security significance of the loss of special nuclear material.

(6) *The Institute will undertake to establish what constitutes a reasonable loss of special nuclear material* in the various operations set forth in (1). This reasonable loss should be established in the light of what is economically practical for a given production operation and an estimate should be made of the expense involved in reducing such loss.

The Institute does not envision the above standards preparation effort as being purely original work at the outset. The establishment of the standards as described in (1)–(4), above, will be directed towards getting down on paper, techniques which are being used presently which reflect the best practice of the industry, suitably modified to take into consideration the safeguards objectives. The Standards Committee of the Institute will establish the format for these standards and assign each of the tasks to individuals from prompt development of an initial draft.

COMMENTS

In addition to the safeguards program recommended, the Institute recommends that the government consider establishing the following requirements as deterrents against proliferation of special nuclear materials:

(1) All persons handling or processing significant quantities of special nuclear materials, or having access to accountability records or reports, or having any responsibility in connection therewith should possess AEC "L" Clearances as a minimum.

(2) All plants and facilities in which significant quantities of special nuclear material are handled or processed should have posted at all accesses to such facilities the legal penalties for diversion of special nuclear material for unauthorized uses. All employees of such facilities should be required to read and have explained to them these penalties and should sign an acknowledgment of their understanding of such penalties.

(3) All unattended storage facilities of significant quantities of special nuclear material should be kept locked and should be equipped with a suitable alarm system. A record should be kept of all persons entering and leaving these facilities.

(4) All facilities in which significant quantities of special nuclear material are stored, handled, or processed should have 24-hour armed guard surveillance or suitable alarm system.

APPENDIX 9

EXCERPTS FROM REPORT OF THE COMMITTEE ON AUDITING PROCEDURES, AMERICAN INSTITUTE OF CERTIFIED PUBLIC ACCOUNTANTS

The views of the Committee on the basic characteristics of a satisfactory system of internal control are set forth in the following excerpts:

"The characteristics of a satisfactory system of internal control would include:

(*a*) A plan of organization which provides appropriate segregation of functional responsibilities,

(*b*) A system of authorization and record procedures adequate to provide reasonable accounting control over assets, liabilities, revenues and expenses,

(*c*) Sound practices to be followed in performance of duties and functions of each of the organizational departments, and

(*d*) Personnel of a quality commensurate with responsibilities.

"These elements, as important as each is in its own right, are all so basic to adequate internal control that serious deficiencies in any one normally would preclude successful operation of the system. For example, no system of authorization and record procedures for accounting control may be considered adequate without personnel capable of performing the procedures designed to make such a system work. While each element is discussed separately in the following sections, the interrelationship of all elements must be borne in mind. . . ."

"A satisfactory system must include media: first, for the records control of the operations and transactions (source data and its flow) and, second, for the classification of data within a formal structure of accounts (a chart of accounts). A carefully prepared chart of accounts facilitates preparation of financial statements. If the chart of accounts is supplemented by an account manual which clearly defines the accounts and the entries to be made therein, greater uniformity can be achieved in recording accounting transactions."

"Media for the original records control of the operations and transactions are created through the designing of appropriate records and forms and through planning the logical flow of the recordkeeping and approval procedures. Such forms, and the instructions regarding the flow of recording and approval procedures, are often incorporated in procedure manuals."

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Appendix 7

Statement by Yankee Atomic Energy Co.

Yankee Atomic Electric Co.,
Boston, Mass., September 29, 1969.

Re S. 1878, H.R. 9648.

Hon. Chet Holifield,
Chairman, Joint Committee on Atomic Energy,
Washington, D.C.

Dear Mr. Chairman: The Joint Committee has invited statements on S. 1878 (introduced by Senator Pastore on April 18, 1969) and H.R. 9648 (introduced by you, by request, on April 18, 1969), a hearing on which was held September 12,

1969. Both bills would add a new section 234 to the Atomic Energy Act to provide civil monetary penalties for violation of licensing requirements.

Yankee Atomic Electric Company operates a 175MW nuclear power plant at Rowe, Massachusetts. Our comments are based on our operating experience over the past eight years.

We agree with the general philosophy, represented by both bills, that authority should be conferred upon the A.E.C. to impose upon a facility licensee which violates a regulation, order or license provision, a financial administrative sanction which is less severe than revoking or suspending its license.

However, S. 1878 authorizes, and H.R. 9648 could be construed to authorize, the Commission to impose the proposed financial penalty upon individual employees of a facility licensee (whether or not the employee is licensed as an operator under Section 107 of the Atomic Energy Act) as well as upon such facility licensee itself. In view of the fact that reasonable men may differ as to the correct interpretation of the highly complex, technical provisions of a license or regulation, and as to whether mitigating circumstances may exist, we simply wish to raise the question whether it is unnecessarily severe to impose the financial penalty upon individuals. Would it not be sufficient to limit the financial penalty to facility licensees, and rely upon them to take appropriate internal disciplinary action against any individual employees who are responsible for violations?

Of course, we do not suggest that the Commission should be precluded from suspending an individual's operating license under Section 107(d). On the contrary, we merely suggest that the availability of the Section 107(d) sanction gives the Commission sufficient control over discipline of individuals who hold an operator's license and is another indication that monetary penalties against individuals are unnecessary.

We hope that further consideration will be given to this matter, and we thank the Joint Committee for the opportunity to submit this statement.

Very truly yours,

D. G. ALLEN, *President.*

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