

(2) approval may be granted by the Secretary of Energy under section 2160 of this title for the transfer of special nuclear material described in subsection (b);

only after the Secretary of Defense has been consulted on whether the physical protection of that material during the export or transfer will be adequate to deter theft, sabotage, and other acts of international terrorism which would result in the diversion of that material. If, in the view of the Secretary of Defense based on all available intelligence information, the export or transfer might be subject to a genuine terrorist threat, the Secretary shall provide to the Nuclear Regulatory Commission or the Secretary of Energy, as appropriate, his written assessment of the risk and a description of the actions the Secretary of Defense considers necessary to upgrade physical protection measures.

(b) Subsection (a) applies to the export or transfer of more than 2 kilograms of plutonium or more than 5 kilograms of uranium enriched to more than 20 percent in the isotope 233 or the isotope 235.

(Aug. 1, 1946, ch. 724, title I, §133, as added Pub. L. 99-399, title VI, §603, Aug. 27, 1986, 100 Stat. 875; renumbered title I, Pub. L. 102-486, title IX, §902(a)(8), Oct. 24, 1992, 106 Stat. 2944; amended Pub. L. 103-236, title VIII, §829, Apr. 30, 1994, 108 Stat. 521.)

#### Editorial Notes

##### REFERENCES IN TEXT

This chapter, referred to in subsec. (a)(1), was in the original “this Act”, meaning act Aug. 1, 1946, ch. 724, as added by act Aug. 30, 1954, ch. 1073, §1, 68 Stat. 919, known as the Atomic Energy Act of 1954, which is classified principally to this chapter. For complete classification of this Act to the Code, see Short Title note set out under section 2011 of this title and Tables.

##### AMENDMENTS

1994—Subsec. (b). Pub. L. 103-236 substituted “5 kilograms” for “20 kilograms”.

#### Statutory Notes and Related Subsidiaries

##### EFFECTIVE DATE OF 1994 AMENDMENT

Amendment by Pub. L. 103-236 effective 60 days after Apr. 30, 1994, see section 831 of Pub. L. 103-236, set out as an Effective Date note under section 6301 of Title 22, Foreign Relations and Intercourse.

#### § 2160d. Further restrictions on exports

##### (a) In general

Except as provided in subsection (b), the Commission may issue a license for the export of highly enriched uranium to be used as a fuel or target in a nuclear research or test reactor only if, in addition to any other requirement of this chapter, the Commission determines that—

(1) there is no alternative nuclear reactor fuel or target enriched in the isotope 235 to a lesser percent than the proposed export, that can be used in that reactor;

(2) the proposed recipient of that uranium has provided assurances that, whenever an alternative nuclear reactor fuel or target can be used in that reactor, it will use that alternative in lieu of highly enriched uranium; and

(3) the United States Government is actively developing an alternative nuclear reactor fuel or target that can be used in that reactor.

#### (b) Medical isotope production

##### (1) Definitions

In this subsection:

##### (A) Highly enriched uranium

The term “highly enriched uranium” means uranium enriched to include concentration of U-235 above 20 percent.

##### (B) Medical isotope

The term “medical isotope” includes Molybdenum 99, Iodine 131, Xenon 133, and other radioactive materials used to produce a radiopharmaceutical for diagnostic, therapeutic procedures or for research and development.

##### (C) Radiopharmaceutical

The term “radiopharmaceutical” means a radioactive isotope that—

(i) contains byproduct material combined with chemical or biological material; and

(ii) is designed to accumulate temporarily in a part of the body for therapeutic purposes or for enabling the production of a useful image for use in a diagnosis of a medical condition.

##### (D) Recipient country

The term “recipient country” means Canada, Belgium, France, Germany, and the Netherlands.

##### (2) Licenses

The Commission may issue a license authorizing the export (including shipment to and use at intermediate and ultimate consignees specified in the license) to a recipient country of highly enriched uranium for medical isotope production if, in addition to any other requirements of this chapter (except subsection (a)), the Commission determines that—

(A) a recipient country that supplies an assurance letter to the United States Government in connection with the consideration by the Commission of the export license application has informed the United States Government that any intermediate consignees and the ultimate consignee specified in the application are required to use the highly enriched uranium solely to produce medical isotopes; and

(B) the highly enriched uranium for medical isotope production will be irradiated only in a reactor in a recipient country that—

(i) uses an alternative nuclear reactor fuel; or

(ii) is the subject of an agreement with the United States Government to convert to an alternative nuclear reactor fuel when alternative nuclear reactor fuel can be used in the reactor.

#### (3) Review of physical protection requirements

##### (A) In general

The Commission shall review the adequacy of physical protection requirements that, as

of the date of an application under paragraph (2), are applicable to the transportation and storage of highly enriched uranium for medical isotope production or control of residual material after irradiation and extraction of medical isotopes.

**(B) Imposition of additional requirements**

If the Commission determines that additional physical protection requirements are necessary (including a limit on the quantity of highly enriched uranium that may be contained in a single shipment), the Commission shall impose such requirements as license conditions or through other appropriate means.

**(4) First report to Congress**

**(A) NAS study**

The Secretary shall enter into an arrangement with the National Academy of Sciences to conduct a study to determine—

- (i) the feasibility of procuring supplies of medical isotopes from commercial sources that do not use highly enriched uranium;
- (ii) the current and projected demand and availability of medical isotopes in regular current domestic use;
- (iii) the progress that is being made by the Department of Energy and others to eliminate all use of highly enriched uranium in reactor fuel, reactor targets, and medical isotope production facilities; and
- (iv) the potential cost differential in medical isotope production in the reactors and target processing facilities if the products were derived from production systems that do not involve fuels and targets with highly enriched uranium.

**(B) Feasibility**

For the purpose of this subsection, the use of low enriched uranium to produce medical isotopes shall be determined to be feasible if—

- (i) low enriched uranium targets have been developed and demonstrated for use in the reactors and target processing facilities that produce significant quantities of medical isotopes to serve United States needs for such isotopes;
- (ii) sufficient quantities of medical isotopes are available from low enriched uranium targets and fuel to meet United States domestic needs; and
- (iii) the average anticipated total cost increase from production of medical isotopes in such facilities without use of highly enriched uranium is less than 10 percent.

**(C) Report by the Secretary**

Not later than 5 years after August 8, 2005, the Secretary shall submit to Congress a report that—

- (i) contains the findings of the National Academy of Sciences made in the study under subparagraph (A); and
- (ii) discloses the existence of any commitments from commercial producers to provide domestic requirements for medical isotopes without use of highly enriched

uranium consistent with the feasibility criteria described in subparagraph (B) not later than the date that is 4 years after the date of submission of the report.

**(5) Second report to Congress**

If the study of the National Academy of Sciences determines under paragraph (4)(A)(i) that the procurement of supplies of medical isotopes from commercial sources that do not use highly enriched uranium is feasible, but the Secretary is unable to report the existence of commitments under paragraph (4)(C)(ii), not later than the date that is 6 years after August 8, 2005, the Secretary shall submit to Congress a report that describes options for developing domestic supplies of medical isotopes in quantities that are adequate to meet domestic demand without the use of highly enriched uranium consistent with the cost increase described in paragraph (4)(B)(iii).

**(6) Certification**

At such time as commercial facilities that do not use highly enriched uranium are capable of meeting domestic requirements for medical isotopes, within the cost increase described in paragraph (4)(B)(iii) and without impairing the reliable supply of medical isotopes for domestic utilization, the Secretary shall submit to Congress a certification to that effect.

**(7) Sunset provision**

After the Secretary submits a certification under paragraph (6), the Commission shall, by rule, terminate its review of export license applications under this subsection.

**(c) Medical production license sunset**

Effective 7 years after January 2, 2013, the Commission may not issue a license for the export of highly enriched uranium from the United States for the purposes of medical isotope production.

**(d) Medical production license extension**

The period referred to in subsection (c) may be extended for no more than 6 years if, no earlier than 6 years after January 2, 2013, the Secretary of Energy certifies to the Committee on Energy and Commerce of the House of Representatives and the Committee on Energy and Natural Resources of the Senate that—

- (1) there is insufficient global supply of molybdenum-99 produced without the use of highly enriched uranium available to satisfy the domestic United States market; and
- (2) the export of United States-origin highly enriched uranium for the purposes of medical isotope production is the most effective temporary means to increase the supply of molybdenum-99 to the domestic United States market.

**(e) Public notice**

To ensure public review and comment, the development of the certification described in subsection (d) shall be carried out through announcement in the Federal Register.

**(f) Joint certification**

**(1) In general**

In accordance with paragraph (2), the ban on the export of highly enriched uranium for pur-

poses of medical isotope production referred to in subsections (c) and (d) shall not go into effect unless the Secretary of Energy and the Secretary of Health and Human Services have jointly certified that—

(A) there is a sufficient supply of molybdenum-99 produced without the use of highly enriched uranium available to meet the needs of patients in the United States; and

(B) it is not necessary to export United States-origin highly enriched uranium for the purposes of medical isotope production in order to meet United States patient needs.

**(2) Time of certification**

The joint certification under paragraph (1) shall be made not later than 7 years after January 2, 2013, except that, if the period referred to in subsection (c) is extended under subsection (d), the 7-year deadline under this paragraph shall be extended by a period equal to the period of such extension under subsection (d).

**(g) Suspension of medical production license**

At any time after the restriction of export licenses provided for in subsection (c) becomes effective, if there is a critical shortage in the supply of molybdenum-99 available to satisfy the domestic United States medical isotope needs, the restriction of export licenses may be suspended for a period of no more than 12 months, if—

(1) the Secretary of Energy certifies to the Congress that the export of United States-origin highly enriched uranium for the purposes of medical isotope production is the only effective temporary means to increase the supply of molybdenum-99 necessary to meet United States medical isotope needs during that period; and

(2) the Congress enacts a Joint Resolution approving the temporary suspension of the restriction of export licenses.

**(h) Definitions**

As used in this section—

(1) the term “alternative nuclear reactor fuel or target” means a nuclear reactor fuel or target which is enriched to less than 20 percent in the isotope U-235;

(2) the term “highly enriched uranium” means uranium enriched to 20 percent or more in the isotope U-235;

(3) a fuel or target “can be used” in a nuclear research or test reactor if—

(A) the fuel or target has been qualified by the Reduced Enrichment Research and Test Reactor Program of the Department of Energy; and

(B) use of the fuel or target will permit the large majority of ongoing and planned experiments and medical isotope production to be conducted in the reactor without a large percentage increase in the total cost of operating the reactor; and

(4) the term “medical isotope” includes molybdenum-99, iodine-131, xenon-133, and other radioactive materials used to produce a radiopharmaceutical for diagnostic or therapeutic procedures or for research and development.

(Aug. 1, 1946, ch. 724, title I, §134, as added Pub. L. 102-486, title IX, §903(a)(1), Oct. 24, 1992, 106 Stat. 2944; Pub. L. 109-58, title VI, §630, Aug. 8, 2005, 119 Stat. 785; Pub. L. 112-239, div. C, title XXXI, §3174, Jan. 2, 2013, 126 Stat. 2214.)

**Editorial Notes**

**REFERENCES IN TEXT**

This chapter, referred to in subsecs. (a) and (b)(2), was in the original “this Act”, meaning act Aug. 1, 1946, ch. 724, as added by act Aug. 30, 1954, ch. 1073, §1, 68 Stat. 919, known as the Atomic Energy Act of 1954, which is classified principally to this chapter. For complete classification of this Act to the Code, see Short Title note set out under section 2011 of this title and Tables.

**AMENDMENTS**

2013—Subsecs. (c) to (h). Pub. L. 112-239 added subsecs. (c) to (h) and struck out former subsec. (c), which provided definitions for terms used in this section.

2005—Subsec. (a). Pub. L. 109-58, §630(1), inserted heading and substituted “Except as provided in subsection (b), the Commission” for “The Commission” in introductory provisions.

Subsecs. (b), (c). Pub. L. 109-58, §630(2), (3), added subsec. (b) and redesignated former subsec. (b) as (c).

**§ 2160e. Congressional review and oversight of agreements with Iran**

**(a) Transmission to Congress of nuclear agreements with Iran and verification assessment with respect to such agreements**

**(1) Transmission of agreements**

Not later than 5 calendar days after reaching an agreement with Iran relating to the nuclear program of Iran, the President shall transmit to the appropriate congressional committees and leadership—

(A) the agreement, as defined in subsection (h)(1), including all related materials and annexes;

(B) a verification assessment report of the Secretary of State prepared under paragraph (2) with respect to the agreement; and

(C) a certification that—

(i) the agreement includes the appropriate terms, conditions, and duration of the agreement’s requirements with respect to Iran’s nuclear activities and provisions describing any sanctions to be waived, suspended, or otherwise reduced by the United States, and any other nation or entity, including the United Nations; and

(ii) the President determines the agreement meets United States non-proliferation objectives, does not jeopardize the common defense and security, provides an adequate framework to ensure that Iran’s nuclear activities permitted thereunder will not be inimical to or constitute an unreasonable risk to the common defense and security, and ensures that Iran’s nuclear activities permitted thereunder will not be used to further any nuclear-related military or nuclear explosive purpose, including for any research on or development of any nuclear explosive device or any other nuclear-related military purpose.