

**ADMINISTRATIVE CHANGE TO  
DOE O 462.1, *Import and Export of Category 1 and 2 Radioactive Sources and Aggregated Quantities***

Locations of Changes:

Page	Paragraph	Changed	To
Cover, 4, 5, 6, 7, 8, 11	Multiple locations	International Regimes and Agreements	Nonproliferation and International Security
10	6.g.	DOE O 243.1, <i>Records Management Program</i> , dated 2-3-06	DOE O 243.1B, <i>Records Management Program</i> , dated 3- 11-13
11	8	202-586-0269	202-586-2102

**SUBJECT: IMPORT AND EXPORT OF CATEGORY 1 AND 2 RADIOACTIVE SOURCES  
AND AGGREGATED QUANTITIES**

---

1. PURPOSE.

- a. To formalize relevant guidance contained in the—
  - (1) International Atomic Energy Agency (IAEA) CODEOC/2004, Code of Conduct on the Safety and Security of Radioactive Sources, January 2004, (Code of Conduct) and
  - (2) IAEA/CODEOC/IMP-EXP/2005, Guidance on the Import and Export of Radioactive Sources, March 2005 (Import-Export Guidance).
- b. To assign responsibilities and prescribe procedures for DOE elements and contractors in support of the Import-Export Guidance.

2. CANCELLATIONS. None.

3. APPLICABILITY.

- a. All Departmental Elements.
  - (1) Except for the exclusions in paragraph 3c, this Order applies to all Departmental elements that engage in the import or export of Category 1 and 2 radioactive sources and aggregated quantities of radioactive sources achieving Category 1 and 2 threshold levels identified in Attachment 2. As used in this Order, the term “Category 1 and 2 radioactive sources” means those radioactive sources and aggregated quantities of radioactive sources identified in Attachment 2 of this Order. (Go to <http://www.directives.doe.gov/pdfs/reftools/org-list.pdf> for the current listing of Departmental elements. This list automatically includes all Departmental elements created after the Order is issued.)
  - (2) The Administrator of the National Nuclear Security Administration (NNSA) will assure that NNSA employees and contractors comply with their respective responsibilities under this Order. Nothing in this Order will be construed to interfere with the NNSA Administrator’s authority under section 3212(d) of Public Law (P.L.) 106-65 to establish Administration specific policies, unless disapproved by the Secretary.

- (3) This Order—
  - (a) is not designed to impede international commerce;
  - (b) is to be applied consistent with relevant U.S. law and international commitments; and
  - (c) does not supersede applicable guidance under other multilateral import and export arrangements, notably requirements stemming from the Nuclear Suppliers Group control lists and guidelines.
- b. DOE Contractors. Except for the exclusions in paragraph 3c, the contractor requirements document (CRD, Attachment 1) sets forth requirements for contractors that engage in the import or export of Category 1 and 2 radioactive sources. The CRD will apply to the extent set forth in each contract.
- c. Exclusions. This Order does not apply to the following:
  - (1) Imports or exports of Category 1 and 2 radioactive sources within military or defense programs.
  - (2) Imports or exports of radioactive material regulated, controlled or licensed by the Nuclear Regulatory Commission (NRC) pursuant to the Atomic Energy Act of 1954, as amended, and Title 10 Code of Federal Regulations (CFR) Part 110, *Export and Import of Nuclear Equipment and Material*.
  - (3) Imports or exports of Category 1 and 2 radioactive sources other than those listed in Attachment 2.
  - (4) In accordance with the responsibilities and authorities assigned by Executive Order 12344, codified at 50 USC sections 2406, 2511 and to ensure consistency throughout the joint Navy/DOE Naval Nuclear Propulsion Program, the Deputy Administrator for Naval Reactors (Director) will implement and oversee requirements and practices pertaining to this Directive for activities under the Director's cognizance, as deemed appropriate.

#### 4. REQUIREMENTS.

- a. The Code of Conduct and related Import-Export Guidance provide guidance regarding the import and export of Category 1 and 2 radioactive sources, as categorized in Annex 1 of the Code of Conduct, to ensure the safety and security of such sources.
- b. This Order is to be applied in accordance with activities furthering nonproliferation, nuclear security and the avoidance of malicious acts using radioactive sources.

- c. This Order outlines procedural requirements and responsibilities for importing and exporting organizations that engage in the import or export of Category 1 and 2 radioactive sources.
- d. During the import of Category 1 radioactive sources and aggregated quantities of radioactive sources that achieve Category 1 threshold levels, as listed in Attachment 2, importing organizations must:
  - (1) Per exporting state request, provide prior consent for the import and ensure that the exporting state's request for consent includes the following required information:
    - (a) name of the recipient organization,
    - (b) recipient location and legal address or principal place of business,
    - (c) radionuclides and radioactivity of the shipment,
    - (d) unique identifier for the request, and
    - (e) recommended timeframe for a decision on the request.
  - (2) Provide to the exporting state or exporting facility a written recipient authorization, or confirmation of the importing organization's authorization from a competent regulatory body, to receive and possess the radioactive sources to be imported.
  - (3) Ensure that the import is conducted in a manner consistent with existing standards and recommendations incorporated in DOE directives on the safety, security and transport of radioactive sources.
- e. During the import of Category 2 radioactive sources and aggregated quantities of radioactive sources that achieve Category 2 threshold levels, as listed in Attachment 2, importing organizations must:
  - (1) Provide to the exporting state or exporting facility a written recipient authorization, or confirmation of the importing organization's authorization from a competent regulatory body, to receive and possess the radioactive sources to be imported.
  - (2) Ensure that the import is conducted in a manner consistent with existing standards and recommendations incorporated in DOE directives on the safety, security and transport of radioactive sources.
- f. During the export of Category 1 radioactive sources and aggregated quantities of radioactive sources that achieve Category 1 threshold levels, as listed in Attachment 2, exporting organizations must:

- (1) Request and receive consent for the export from the importing state and include in the request for consent the following required information:
  - (a) name of the recipient organization,
  - (b) recipient location and legal address or principal place of business,
  - (c) radionuclides and radioactivity of the shipment,
  - (d) unique identifier for this request, and
  - (e) recommended timeframe for a decision on the request.
- (2) Confirm that the importing state is authorized, under U.S. laws, regulations, and policies, to receive the radioactive sources to be exported. Confirmation must be—
  - (a) based on current U.S. Government policy and assessments as provided to all affected organizations by the NNSA Office of Nonproliferation and International Security, or
  - (b) obtained through consultation with the NNSA Office of Nonproliferation and International Security.
- (3) Confirm that the individual recipient is authorized to receive and possess the radioactive sources to be exported pursuant to a valid written recipient authorization from either the importing state or a competent regulatory body.
- (4) Review the recipient authorization and ensure that it contains the following required information:
  - (a) name of the recipient organization,
  - (b) recipient location and legal address or principal place of business,
  - (c) radionuclides and radioactivity of the shipment,
  - (d) end-use of radioactive sources to be exported, and
  - (e) recipient authorization expiration date (if any).
- (5) Following this review, determine that, based on either available information **or** consultation with the NNSA Office of Nonproliferation and International Security—

- (a) the stated end-use and end-user of the sources are appropriate for the type of radioactive source, and
  - (b) the export does not constitute a proliferation or terrorist risk.
- (6) Provide written advance notification to the importing state of each shipment and include the following required information:
  - (a) estimated date of export,
  - (b) exporting facility,
  - (c) recipient name,
  - (d) radionuclides and radioactivity,
  - (e) aggregate activity level, and
  - (f) number of radioactive sources and (if available) their unique identifiers.

Such notification should be provided, to the extent practicable, at least seven calendar days in advance of shipment and should be accompanied by a copy of the importing state's consent.

- (7) Ensure that the export is conducted in a manner consistent with existing standards and recommendations incorporated in DOE directives on the safety, security and transport of radioactive sources.
- g. During the export of Category 2 radioactive sources and aggregated quantities of radioactive sources that achieve Category 2 threshold levels, as listed in Attachment 2, exporting organizations must:
- (1) Confirm that the importing state is authorized, under U.S. laws, regulations, and policies, to receive the radioactive sources to be exported. Confirmation must be—
    - (a) based on current U.S. Government policy and assessments, as provided to all affected organizations by the NNSA Office of Nonproliferation and International Security, or
    - (b) obtained through consultation with the NNSA Office of Nonproliferation and International Security.
  - (2) Confirm that the individual recipient is authorized to receive and possess the radioactive sources to be exported pursuant to a valid written recipient authorization from either the importing state or a competent regulatory body.

- (3) Review the recipient authorization and ensure that it contains the following required information:
  - (a) name of the recipient organization,
  - (b) recipient location and legal address or principal place of business,
  - (c) relevant radionuclides and radioactivity of the shipment,
  - (d) end-use of radioactive sources to be exported, and
  - (e) recipient authorization expiration date (if any).
- (4) Following this review, determine that, based on either available information **or** consultation with the NNSA Office of Nonproliferation and International Security—
  - (a) the stated end-use and end-user of the sources are appropriate for the type of radioactive source, and
  - (b) the export does not constitute a proliferation or terrorist risk.
- (5) Provide written advance notification to the importing state of each shipment and include the following required information:
  - (a) estimated date of export,
  - (b) the exporting facility,
  - (c) recipient name,
  - (d) radionuclides and radioactivity,
  - (e) aggregate activity level, and
  - (f) number of radioactive sources and (if available) their unique identifiers.

Such notification should be provided, to the extent practicable, at least seven calendar days in advance of shipment and should be accompanied by a copy of the importing state's consent.

- (6) Ensure that the export is conducted in a manner consistent with existing standards and recommendations incorporated in DOE directives on the safety, security and transport of radioactive sources.

- h. In exceptional circumstances and with the authorization of the Deputy Secretary, when the import and export requirements outlined in paragraphs 4d-g cannot be followed, imports and exports of Category 1 and 2 radioactive sources may be conducted if the following requirements are met:
  - (1) One of the following exceptional circumstances applies—
    - (a) a considerable health or medical need as acknowledged by the importing and exporting states,
    - (b) an imminent radiological hazard or security threat presented by one or more radioactive sources, or
    - (c) a situation in which the exporting facility or exporting state maintains control of the radioactive sources during the period they are outside the exporting state and removes the sources at the conclusion of their use.
  - (2) The importing or exporting organization has consulted with the NNSA Office of Nonproliferation and International Security regarding the applicability of exceptional circumstances.
  - (3) The import or export is authorized by the Deputy Secretary of Energy.
  - (4) The exporting organization has obtained written consent from the importing state for the export, in accordance with paragraph 4g(1).
  - (5) The exporting organization has provided advance written notification of shipment to the importing state including the following required information:
    - (a) estimated date of export,
    - (b) exporting facility,
    - (c) recipient name,
    - (d) radionuclides and radioactivity,
    - (e) aggregate activity level,
    - (f) number of radioactive sources, and
    - (g) unique identifiers (if available).

Such notification should be provided, to the extent practicable, at least seven calendar days in advance of shipment.



5. RESPONSIBILITIES.a. Importing and Exporting Organizations.

- (1) Implement the import and export provisions outlined in paragraph 4 of this Order.
- (2) Consult with the NNSA Office of Nonproliferation and International Security when the provisions outlined in paragraphs 4d-g cannot be followed with respect to proposed imports or exports of a Category 1 and 2 radioactive sources.
- (3) Maintain appropriate records in accordance with DOE directives of all imports and exports of Category 1 and 2 radioactive sources.
- (4) Direct any question, concern, or request related to this Order to the NNSA Office of Nonproliferation and International Security.

b. Heads of Departmental Elements.

- (1) Provide direction and oversight for DOE employees and contractors managing facilities or operations under their purview to ensure compliance with this Order.
- (2) Ensure that implementation of Order requirements are consistent with prudent management practices (i.e., avoiding unnecessary interference in the operation of DOE facilities and minimizing costs).
- (3) Direct questions, concerns, or requests related to this Order to the NNSA Office of Nonproliferation and International Security.
- (4) Ensure that the CRD is incorporated into affected site/facility management contracts.
- (5) Inform the contracting officer which site/facility management contractors are affected by this Order.
- (6) Inform the contracting officer which work is affected by the Order.

c. Contracting Officers. After being notified, incorporate the DOE O 462.1 CRD into the laws, regulations and DOE directives clauses of affected site/facility management contracts.d. NNSA Office of Nonproliferation and International Security.

- (1) Provides to importing and exporting organizations current and comprehensive information regarding states authorized to receive imports of radioactive sources as well as current assessments of proliferation and

terrorist risks related to end users of radioactive sources (based on available information), for use in evaluating exports of Category 1 and 2 radioactive sources.

- (2) Provides guidance and recommendations on the import and export of Category 1 and 2 radioactive sources in exceptional circumstances and at any time upon request by an importing or exporting organization.
  - (3) Develops and reviews DOE directives regarding the import or export of Category 1 and 2 radioactive sources.
  - (4) Evaluates cases that may be considered exceptional circumstances and provides guidance on execution of imports and exports of Category 1 and 2 radioactive sources in exceptional circumstances.
  - (5) Obtains the authorization of the Deputy Secretary of Energy for imports or exports of Category 1 and 2 radioactive sources in exceptional circumstances.
  - (6) Consults and coordinates with other DOE offices and U.S. Government agencies involved in the import or export of radioactive sources on issues related to current U.S. policies, relevant bilateral agreements with major partners, and communications with the IAEA.
  - (7) Represents DOE in bilateral and multilateral discussions on and development or revision of international guidance on the import and export of radioactive sources.
  - (8) Serves as the point of contact for the IAEA and counterpart foreign agencies on issues related to the import to and export from DOE organizations of radioactive sources.
  - (9) Protects the confidentiality of import/export information.
  - (10) Develops and maintains procedures and confirms that the importing state is authorized to receive and possess.
- e. The Deputy Secretary of Energy. Provides authorization for imports or exports of Category 1 and 2 radioactive sources in exceptional circumstances where the import and export requirements outlined in paragraphs 4e-h cannot be followed.

6. REFERENCES.

- a. Atomic Energy Act of 1954, as amended, codified at 42 U.S.C. §§ 2011-2286i.
- b. Energy Reorganization Act of 1974, as amended, codified at 42 U.S.C. §§ 5801-5891.

- c. 10 CFR Part 110, Export and Import of Nuclear Equipment and Material.
- d. IAEA Technical Working Document (TECDOC) 1344, *Categorization of Radioactive Sources*, July 2003, categories as applicable ([http://www-pub.iaea.org/MTCD/publications/PDF/te\\_1344\\_web.pdf](http://www-pub.iaea.org/MTCD/publications/PDF/te_1344_web.pdf)).
- e. IAEA/CODEOC/2004, *Code of Conduct on the Safety and Security of Radioactive Sources*, January 2004, ([http://www-pub.iaea.org/MTCD/publications/PDF/Code-2004\\_web.pdf](http://www-pub.iaea.org/MTCD/publications/PDF/Code-2004_web.pdf)).
- f. IAEA/CODEOC/IMP-EXP/2005, *Guidance on the Import and Export of Radioactive Sources*, March 2005.
- g. DOE O 243.1B, *Records Management Program*, dated 3-11-13.

## 7. DEFINITIONS.

- a. Aggregated quantities. The accumulation of sources into a single storage or use location where sources are in close proximity, such as in storage facilities, manufacturing processes, or transport conveyances that can be considered one activity and treated as one source for the purposes of assigning a category.
- b. Authorization. Written permission in the form of a registration, a license, or alternative effective legal control measure, granted by a competent regulatory body to a person or entity who will possess, use, manage, or transport a radioactive source.
- c. Category. A designation (Category 1, 2 or 3) of radioactive sources based on quantity, type and health effects as defined in IAEA TECDOC 1344, *Categorization of Radioactive Sources*.
- d. Defense or military programs. All activities or operations directly related to the defense of the United States of America and all activities or operations carried out by, or for, any branch of the U.S. armed services.
- e. End-use. The ultimate use of an exported item.
- f. End-user. The person or entity abroad that receives and ultimately uses the exported items. The end-user is not a forwarding agent or intermediary, but may be the purchaser or ultimate consignee.
- g. Exceptional circumstances. Situations involving a considerable health or medical need as acknowledged by the importing and exporting state, situations involving an imminent radiological hazard or security threat presented by one or more radioactive sources, or situations where the exporting facility or exporting state maintains control of the radioactive sources during the period they are outside the exporting state and removes the sources at the conclusion of their use. When the requirements in paragraphs 4e-h cannot be followed with respect to proposed

imports or exports of Category 1 and 2 radioactive sources, the imports or exports may be conducted in exceptional circumstances as provided in paragraph 4i.

- h. Exporting organization. A Departmental element that conducts or directs DOE contractors to conduct exports to which the provisions of this Order apply.
  - i. Importing organization. A Departmental element that conducts or directs DOE contractors to conduct imports to which the provisions of this Order apply.
  - j. Radioactive source. Radioactive material that is permanently sealed in a capsule or closely bonded, in a solid form and which is not exempt from regulatory control. Also means any radioactive material released if the radioactive source is leaking or broken, but does not mean material encapsulated for disposal, or nuclear material within the nuclear fuel cycle of research and power reactors.
  - k. Recipient. Any organization or entity that will receive the radioactive source for use and storage.
  - l. Regulatory body. An entity, organization, or system of entities designated by state government as having legal authority for exercising regulatory control over radioactive sources (for example, DOE, Department of Commerce, or the NRC).
  - m. State. As used in this Directive means nation state or country.
  - n. Unique identifier. A transaction code, order number, or other unique designation specific to a particular import or export that allows for tracking.
8. CONTACT. Address questions concerning this Order to the NNSA Office of Nonproliferation and International Security at 202-586-2102.

BY ORDER OF THE SECRETARY OF ENERGY:



JEFFREY F. KUPFER  
Acting Deputy Secretary



**CONTRACTOR REQUIREMENTS DOCUMENT**  
**DOE O 462.1, *Import and Export of Radioactive Sources***

Regardless of the performer of the work, the contractor is responsible for complying with the requirements of this Contractor Requirements Document (CRD) and flowing down CRD requirements to subcontractors at any tier to the extent necessary to ensure contractor compliance. Nothing in this CRD is intended to diminish or affect CRD requirements related to DOE N 234.1, as contained in the contractor's contract.

1. GENERAL.

- a. DOE contractors shall not conduct activities directly related to the import or export of Category 1 and 2 radioactive sources unless written direction is received from DOE.
- b. Questions or requests related to this CRD should be directed to the responsible DOE contracting officer representative at the appropriate oversight office .
- c. Contractors must assist DOE personnel with actions in support of the International Atomic Energy Agency (IAEA) *Code of Conduct on the Safety and Security of Radioactive Sources* (IAEA/CODEOC/2004) and *Guidance on the Import and Export of Radioactive Sources* (IAEA/CODEOC/IMP-EXP/2005).
- d. The requirements contained in this CRD are intended to cover activities involving the export or import of Category 1 and 2 radioactive sources.
- e. Maintain records in accordance with DOE directives.

2. REQUIREMENTS FOR IMPORTING RADIOACTIVE SOURCES.

- a. All imports of Category 1 and 2 radioactive sources must be conducted in compliance with U.S. laws, regulations, and policies and with DOE standards and directives.
- b. During the import of Category 1 and 2 radioactive sources, the contractor will prepare supporting documentation as directed by DOE, which may include—
  - (1) name of the recipient organization,
  - (2) recipient location and legal address or principal place of business,
  - (3) radionuclides and radioactivity of the shipment,
  - (4) unique identifier for the request,
  - (5) recommended timeframe for a decision on the request; and

- (6) statement that the radioactive sources will be transported, utilized, and managed in a manner consistent with existing and future DOE standards, directives, and other requirements related to the safety and security of radioactive sources.

3. REQUIREMENTS FOR EXPORTING RADIOACTIVE SOURCES.

- a. All exports of Category 1 and 2 radioactive sources must be conducted in compliance with U.S. laws, regulations, and policies and with DOE standards and directives.
- b. During the export of Category 1 and 2 radioactive sources, the contractor will prepare supporting documentation as directed by DOE, which may include—
  - (1) name of the recipient organization,
  - (2) recipient location and legal address or principal place of business,
  - (3) radionuclides and radioactivity of the shipment,
  - (4) unique identifier for this request,
  - (5) end-uses and end-users,
  - (6) timeframe for actions associated with the export, and
  - (7) description of the importing state's regulatory framework for Category 1 and 2 radioactive sources.
  - (8) Ensure that—
    - (a) written consent for the export has been provided by the importing state and
    - (b) the recipient is authorized to receive the radioactive sources under U.S. law and policy and laws and policies of the importing state.

**RADIOACTIVE SOURCES TO WHICH THIS ORDER APPLIES**

Radionuclide	Category 1		Category 2		Category 3 <sup>c</sup>	
	1000 x D		10 x D		D	
	(TBq)	(Ci) <sup>a</sup>	(TBq)	(Ci) <sup>a</sup>	(TBq)	(Ci) <sup>a</sup>
Am-241	6.E+01	2.E+03	6.E-01	2.E+01	6.E-02	2.E+00
Am-241/Be	6.E+01	2.E+03	6.E-01	2.E+01	6.E-02	2.E+00
Cf-252	2.E+01	5.E+02	2.E-01	5.E-00	2.E-02	5.E-01
Cm-244	5.E+01	1.E+03	5.E-01	1.E+01	5.E-02	1.E+00
Co-60	3.E+01	8.E+02	3.E-01	8.E+00	3.E-02	8.E-01
Cs-137	1.E+02	3.E+03	1.E+00	3.E+01	1.E-01	3.E+00
Gd-153	1.E+03	3.E+04	1.E+01	3.E+02	1.E+00	3.E+01
Ir-192	8.E+01	2.E+03	8.E-01	2.E+01	8.E-02	2.E+00
Pm-147	4.E+04	1.E+06	4.E+02	1.E+04	4.E+01	1.E+03
Pu-238	6.E+01	2.E+03	6.E-01	2.E+01	6.E-02	2.E+00
Pu-239 <sup>b</sup> /Be	6.E+01	2.E+03	6.E-01	2.E+01	6.E-02	2.E+00
Ra-226	4.E+01	1.E+03	4.E-01	1.E+01	4.E-02	1.E+00
Se-75	2.E+02	5.E+03	2.E+00	5.E+01	2.E-01	5.E+00
Sr-90 (Y-90)	1.E+03	3.E+04	1.E+01	3.E+02	1.E+00	3.E+01
Tm-170	2.E+04	5.E+05	2.E+02	5.E+03	2.E+01	5.E+02
Yb-169	3.E+02	8.E+03	3.E+00	8.E+01	3.E-01	8.E+00
Au-198*	2.E+02	5.E+03	2.E+00	5.E+01	2.E-01	5.E+00
Cd-109*	2.E+04	5.E+05	2.E+02	5.E+03	2.E+01	5.E+02
Co-57*	7.E+02	2.E+04	7.E+00	2.E+02	7.E-01	2.E+01
Fe-55*	8.E+05	2.E+07	8.E+03	2.E+05	8.E+02	2.E+04
Ge-68*	7.E+02	2.E+04	7.E+00	2.E+02	7.E-01	2.E+01
Ni-63*	6.E+04	2.E+06	6.E+02	2.E+04	6.E+01	2.E+03
Pd-103*	9.E+04	2.E+06	9.E+02	2.E+04	9.E+01	2.E+03
Po-210*	6.E+02	2.E+03	6.E-01	2.E+01	6.E-02	2.E+00
Ru-106 (Rh-106)*	3.E+02	8.E+03	3.E+00	8.E+01	3.E-01	8.E+00
Tl-204*	2.E+04	5.E+05	2.E+02	5.E+03	2.E+01	5.E+02

\* These radionuclides are very unlikely to be used in radioactive sources or aggregated to activity levels that would place them within Categories 1 or 2.

<sup>a</sup> The primary values to be used are given in TBq. Curie values are provided for practical usefulness and are rounded after conversion.

<sup>b</sup> Criticality and safeguard issues will need to be considered for multiples of D.

<sup>c</sup> Category 3 values are presented only for comparison and are not within the scope of this Order.