

## International Atomic Energy Agency

### Code of Conduct on the Safety and Security of Radioactive Sources\*

#### The IAEA's Member States,

**Noting** that radiation sources are used throughout the world for a wide variety of beneficial purposes, *e.g.* in industry, medicine, research, agriculture and education,

**Aware** that their use involves risks due to radiation exposure,

**Aware** that these risks must be restricted and protected against through the application of appropriate radiation safety standards,

**Aware** that there have been a number of accidents with serious, even fatal, consequences during the use of radiation sources,

**Recognizing** that such accidents may have an adverse impact on individuals and on the environment,

**Recognizing** the importance of fostering a safety culture in all organizations and among all individuals engaged in the regulatory control or in the management of radiation sources,

**Recognizing** the need for effective and continuous regulatory control, both within States and in situations involving the transfer of radiation sources between States,

**Noting** that serious accidents have occurred during the use of radiation sources, in particular radioactive sources, as a result of ineffective, or lapses in the continuity of, regulatory control, or as a result of lapses in management control during extended periods of storage,

**Recognizing** that most of these accidents have been caused by the use of radioactive sources, including accidents involving orphan sources,

**Recognizing** that a number of States may lack appropriate infrastructure for the safe management of radioactive sources, and that consequently exporting States should take due care in authorizing exports,

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\* This Code of Conduct was not submitted to a process for its adoption by states within the IAEA bodies. The Board of Governors and the General Conference, in August and September 2000 respectively, simply “took note” of the Code, inviting Member States to do so and to consider means of ensuring its wide application.

**Recognizing** the need for technical facilities, including appropriate equipment and qualified staff, to ensure the safe and secure management of radioactive sources,

**Noting** that the International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources contain recommendations for protection against exposure to ionizing radiation and for the safety and security of radioactive sources,

**Recalling** the IAEA's Safety Requirements document on Legal and Governmental Infrastructure for Nuclear, Radiation, Radioactive Waste and Transport Safety,

**Taking** account of the provisions of the Convention on Early Notification of a Nuclear Accident (1986) and of the provisions of the Convention on Assistance in the Case of Nuclear Accident or Radiological Emergency (1986),

**Taking account** of the provisions of the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (1997), in particular those provisions which relate to the transboundary movement of radioactive waste and to the possession, remanufacturing or disposal of disused sealed sources,

**Recognizing** the global role of the IAEA in the areas of nuclear and radiation safety and the safety of radioactive waste management and disposal, and

**Taking account** of the "Categorization of Radiation Sources" in the Annex to Attachment 3 to IAEA document GOV/2000/36/GC(44)/12,

DECIDE that the following Code of Conduct should serve as guidance to States for – *inter alia* – the development and harmonization of policies, laws and regulations on the safety and security of radioactive sources.

## **I. SCOPE AND OBJECTIVE**

1. This Code applies to all radioactive sources that may pose a significant risk to health and the environment. In implementing this Code, States should give highest priority to those radioactive sources which pose the most significant risks, *i.e.* the radioactive sources belonging to Category 1 of the IAEA's "Categorization of Radiation Sources". However, in doing so, States should also devote appropriate attention to the regulation of radioactive sources other than those belonging to Category 1.
2. This Code does not apply to the control of nuclear materials as defined in the Convention on the Physical Protection of Nuclear Materials.
3. This Code also does not apply to radioactive sources within military or defence programmes. However, such sources should be managed in accordance with the principles of this Code.
4. The objective of this Code is to achieve and maintain a high level of safety and security of radioactive sources through the development, harmonisation and enforcement of national policies, laws and regulations, and through the fostering of international co-operation. In particular, this Code addresses the establishment of an adequate system of regulatory control from the production of radioactive sources to their final disposal, and a system for the restoration of such control if it has been lost.

5. This Code relies on existing international standards relating to legal and governmental infrastructure for nuclear, radiation, waste and transport safety and to the control of radioactive sources. It is intended to complement existing international standards in these areas.
6. In implementing this Code, States should emphasise and reinforce to manufacturers, suppliers, users and those managing disused sources their responsibilities for the safety and security of radioactive sources.

## **II. DEFINITIONS**

7. For the purposes of this Code:

“authorization” means a permission granted in a document by a regulatory body to a legal person who has submitted an application to manufacture, supply, receive, store, use, transfer, import, export, transport, maintain or dispose of radioactive sources. The authorization can take the form of a registration or a licence.

“disused source” means a radioactive source no longer intended to be used for its original purpose.

“management” means all activities, administrative and operational, that are involved in the manufacture, supply, receipt, storage, use, transfer, import, export, transport, maintenance or disposal of radioactive sources.

“orphan source” means a source which poses sufficient radiological hazard to warrant regulatory control but is not under regulatory control, either because it has never been under regulatory control, or because it has been abandoned, lost, misplaced, stolen or transferred without proper authorization.

“radiation source” means a radiation generator, or a radioactive source or other radioactive material outside the nuclear fuel cycles of research and power reactors.

“radioactive source” means radioactive material that is permanently sealed in a capsule or closely bonded and in a solid form, excluding material within the nuclear fuel cycles of research and power reactors. It also includes any radioactive material released if the source is leaking or broken.

“regulatory body” means any body or bodies on which a State has conferred legal authority to regulate any aspect of the safety and security of radioactive sources, including legal authority to grant authorizations.

“regulatory control” means any form of control applied to facilities or activities by a regulatory body for reasons related to radiation protection or to the safety and security of radioactive sources.

“safety” means measures intended to minimize the likelihood of accidents with radiation sources and, should such an accident occur, to mitigate its consequences.

“security” means measures to prevent unauthorized access to, and loss, theft and unauthorized transfer of, radioactive sources.

### III. BASIC PRINCIPLES

#### GENERAL

8. Every State should, in order to protect human health and the environment, take the appropriate steps necessary to ensure that the radioactive sources within its territory, or under its jurisdiction or control, are:
  - a) fit for purpose;
  - b) safely managed during their useful lives and at the end of their useful lives; and
  - c) not stored for extended periods of time in facilities not designed for the purpose of such storage.
9. Every State should establish an effective national legislative and regulatory system of control over the management of radioactive sources and over any other activity involving radioactive sources which entails a significant risk to individuals or the environment. Such a system should:
  - a) place the prime responsibility for the safe management of radioactive sources on the persons being granted the relevant authorizations;
  - b) minimize the likelihood of a loss of control;
  - c) provide for rapid response for the purpose of regaining control over sources that are no longer under control;
  - d) foster ongoing communication between the regulatory body and users; and
  - e) provide for its continual improvement.
10. Every State should ensure that appropriate facilities and services for radiation protection and safety are available to, and used by, the persons who are authorized to manage radioactive sources or undertake any other activity with radioactive sources within its territory. Such facilities and services should include those needed for:
  - a) searching for missing sources and securing found sources;
  - b) intervention in the event of an accident involving a radioactive source;
  - c) personal dosimetry and environmental monitoring; and
  - d) the calibration and intercomparison of radiation monitoring equipment.
11. Every State should ensure that adequate arrangements are in place for the appropriate training of the staff of its regulatory body, its customs officers, its police and the staff of other law enforcement agencies.
12. Every State should encourage bodies or persons likely to encounter orphan sources during the course of their operations to implement appropriate monitoring programmes to detect such sources.

## LEGISLATION AND REGULATIONS

13. Every State should establish legislation and regulations that:
  - a) prescribe and assign governmental responsibilities for the safety and security of radioactive sources;
  - b) provide for the effective control of radioactive sources;
  - c) specify the requirements for protection against exposure to ionizing radiation; and
  - d) specify the requirements for the safety and security of radioactive sources.
14. Such legislation and regulations should include, in particular:
  - a) the establishment of a regulatory body whose regulatory functions are effectively independent of other functions if that body is involved in both the management of radioactive sources and in their regulation. This body should have the powers listed in paragraphs 15 to 17;
  - b) measures, commensurate with the risks, to protect individuals and the environment from the deleterious effects of radiation;
  - c) administrative requirements relating to:
    - i) the authorization of the management of radioactive sources; and
    - ii) the notification to the regulatory body, as appropriate, by an authorized person of actions involved in the management of such sources and of any other activity in relation to such sources which may engender a significant risk to individuals or the environment;
  - d) provisions for exemption, as appropriate, from these administrative requirements;
  - e) managerial requirements, in particular relating to the establishment of adequate policies, procedures and measures for the control of radioactive sources;
  - f) security measures to prevent, protect against, and ensure the timely detection of, the theft, loss or unauthorized use or removal of radioactive sources during all stages of management;
  - g) requirements relating to the verification of safety, through: safety assessments; monitoring and verification of compliance; and the maintenance of appropriate records; and
  - h) the imposition of appropriate penalties.

## REGULATORY BODY

15. Every State should ensure that the regulatory body established by its legislation has the authority to:
  - a) establish regulations and issue guidance relating to the safety and security of radioactive sources;
  - b) require those who intend to use radioactive sources to seek an authorization, and to submit a safety assessment when one is deemed necessary in the light of the risks posed;
  - c) obtain any relevant information from an applicant for an authorization;
  - d) issue, amend, suspend or revoke, as necessary, authorizations for:
    - i) the management of radioactive sources; and
    - ii) any other activity involving such sources which may engender a risk to individuals or the environment;
  - e) attach clear and unambiguous conditions to the authorizations issued by it, including conditions relating to:
    - i) responsibilities;
    - ii) minimum operator competencies;
    - iii) minimum equipment performance criteria (including radioactive source requirements);
    - iv) requirements for emergency procedures and communication links;
    - v) work procedures to be followed;
    - vi) maintenance of equipment and sources; and
    - vii) the adequate management of disused sources, including, where applicable, agreements regarding the possible return of decayed/disused sources to a supplier;
  - f) obtain any relevant and necessary information from the holder of an authorization;
  - g) enter premises of authorized users to undertake inspections, according to established procedures, to verify compliance with regulatory requirements;
  - h) enforce regulatory requirements;
  - i) monitor, or request other authorized bodies to monitor, at appropriate checkpoints for the purpose of detecting orphan sources;
  - j) ensure that corrective actions are taken when a radioactive source is in an unsafe condition;
  - k) provide, on a case-by-case basis, to the holder of an authorization and the public any information that is deemed necessary in order to protect individuals and the environment;

- l) liaise and co-ordinate with other governmental bodies and relevant non-governmental bodies within the State, and also with international bodies and regulatory bodies in other States, in order to seek guidance, information and assistance relevant to the safe and secure management of radioactive sources; and
  - m) establish criteria for intervention in emergency situations.
16. Every State should ensure that its regulatory body:
- a) is staffed by qualified personnel; and
  - b) has the financial resources and the facilities and equipment necessary to undertake its functions in an effective manner.
17. Every State should ensure that its regulatory body:
- a) establishes procedures for dealing with applications for authorization;
  - b) ensures that, before the receipt of a radioactive source is authorized:
    - i) arrangements have been made for its safe management once it has become a disused source; and
    - ii) financial provision has been made for its safe management once it has become a disused source;
  - c) maintains appropriate records of holders of authorizations in respect of radioactive sources, with a clear indication of the type(s) of the radioactive sources that they are authorized to use, and appropriate records of the transfer and disposal of the radioactive sources on termination of the authorization;
  - d) establishes systems for ensuring that, where practicable, both radioactive sources belonging to Categories 1 and 2 of the IAEA's "Categorization of Radiation Sources", and their containment, are marked with an appropriate sign to warn members of the public of the radiation hazard, but where this is not practicable, at least the containment is so marked;
  - e) establishes systems for ensuring that, where practicable, radioactive sources belonging to Categories 1 and 2 of the IAEA's "Categorization of Radiation Sources" are identifiable and traceable;
  - f) ensures that inventory controls are conducted on a regular basis by the holders of authorizations;
  - g) carries out both announced and unannounced inspections at a frequency determined by past performance and the risks presented by the radioactive source;
  - h) takes enforcement actions, as appropriate, to ensure compliance with regulatory requirements;

- i) ensures that the regulatory principles and criteria remain adequate and valid and take into account, as applicable, operating experience and internationally endorsed standards and recommendations;
- j) requires the prompt reporting by authorized persons of loss of control over, and of incidents in connection with, radioactive sources;
- k) prescribes appropriate levels of training for manufacturers, suppliers and users of radioactive sources;
- l) requires authorized persons to prepare appropriate emergency plans;
- m) is prepared, or has established provisions, to recover orphan sources and to deal with radiological emergencies and has established appropriate response plans and measures;
- n) is prepared, in respect of any radioactive source whose export it has authorized, to provide, upon request, information relating to its safe management.

#### IMPORT AND EXPORT OF RADIOACTIVE SOURCES

- 18. Every State intending to import a radioactive source belonging to Categories 1 and 2 of the IAEA's "Categorization of Radiation Sources" should consent to its import only if the State has the technical and administrative capability needed to manage the source in a manner consistent with the provisions of this Code.
- 19. A State should allow for re-entry into its territory of disused radioactive sources if, in the framework of its national law, it has accepted that they be returned to a manufacturer qualified to receive and possess the disused radioactive sources.
- 20. Any State which authorizes the export of a radioactive source should take appropriate steps to ensure that such export is undertaken in a manner consistent with existing international standards relating to the safe transport of radioactive materials.

#### ROLE OF THE IAEA

- 21. The IAEA should:
  - a) continue to collect and disseminate information on laws, regulations and technical standards relating to the safe and secure management of radioactive sources, develop and establish relevant technical standards and provide for the application of these standards at the request of any State, *inter alia* by advising and assisting on all aspects of the safe and secure management of radioactive sources; and
  - b) in particular, implement the measures approved by its governing bodies, including pursuant to its Action Plan on the Safety of Radiation Sources and the Security of Radioactive Materials.

#### DISSEMINATION OF THE CODE

- 22. Every State should inform public and private organizations and persons involved in the management of radioactive sources, as appropriate, of the measures it has taken to implement this Code and should take steps to disseminate that information widely.

