



SAFETY OF RADIATION SOURCES AND OTHER RADIOACTIVE MATERIALS IN JORDAN

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Abstract. Since joining the IAEA Model Project for upgrading radiation protection infrastructure in countries of West Asia, Jordan has amended its radiation safety legislation. The Regulatory Authority is improving its inventory system for radiation sources and other radioactive materials and also its notification, registration, licensing, inspection and enforcement systems. It has established national provisions for the management of orphan sources after they have been found. The system for the control of the radiation sources and other radioactive materials entering the country has been improved by the Regulatory Authority.

INTRODUCTION

Jordan started to strengthen its Regulatory Authority by amending its radiation safety legislation. It has adopted the IAEA's Regulatory Authority Information System (RAIS), and its notification, registration, licensing and inspection systems are being brought into line with international standards. All radiation sources and other radioactive materials entering the country are now subject to control through radiation monitoring.

INVENTORY SYSTEM FOR RADIATION SOURCES AND OTHER RADIOACTIVE MATERIALS

The Regulatory Authority has an electronic database on radiation sources and other radioactive materials, together with a manual recording system. The inventory system has been improved by the adoption of RAIS, provided by the IAEA. A year ago the Regulatory Authority started collecting information on radiation sources and user facilities and entering it into the database. The information sent by users is checked by the Regulatory Authority and, if necessary, corrected immediately. When misunderstandings occur as a result of the way in which the Regulatory Authority's questionnaire has been completed by the user, inspectors correct the information in the light of inspections carried out at the user facility.

When there is only very incomplete information about a radiation source (for example, when the source is an old one), the Regulatory Authority, after determining the radioactive nuclide and assessing the activity, issues a so-called "Regulatory Authority certificate" which identifies the user. One copy of this certificate is given to the user and one is placed in the user's file at the Regulatory Authority's office, and the details are entered into the database.

Class B sources are checked through annual declarations from the user. Class A sources are checked through semi-annual inspections.

THE REGULATORY AUTHORITY'S RESPONSIBILITY FOR THE SAFETY OF RADIATION SOURCES

The Regulatory Authority requires users to provide for the safety of the sources used by them. The safety arrangements at user facilities are checked by the Regulatory Authority through inspections before licensing; the safety of the radiation source is a condition for granting a licence. Any failure to provide adequate protection for the radiation source is a reason for

withdrawal of the licence. The Regulatory Authority takes the action necessary to ensure that the source will be safe if it suspects that the user's safety arrangements are not adequate, and the user reimburses the Regulatory Authority for the costs incurred by it.

The Regulatory Authority carefully evaluates the user's system for the protection of radiation sources, in order to avoid failures to provide adequate protection in critical situations. All incidents related to the safety of radiation sources are taken seriously by the Regulatory Authority and appropriate action initiated immediately.

SYSTEMS OF NOTIFICATION, REGISTRATION, LICENSING AND INSPECTION

Under Jordan's nuclear energy and radiation protection legislation, no one may import, export or use - or take any other action related to - radiation sources without authorization from the Regulatory Authority. Anyone wishing to import and use a radiation source must notify the Regulatory Authority before taking any action. Upon notification, the Regulatory Authority studies the request and, if appropriate, gives its approval for the radiation source to be imported. The Regulatory Authority applies the BSS when registering the source and licensing its use. The user must make all necessary arrangements for the safety of the radiation source before receiving approval for its use, and the arrangements are checked *regularly* by the Regulatory Authority.

THE NATIONAL PROVISIONS FOR THE SAFETY OF RADIATION SOURCES

The Regulatory Authority is responsible for disused sources. Users have full responsibility for the radiation sources being used by them, but, if a user facility shuts down or stops using radiation sources, the sources at the facility must be returned to the supplier or placed in storage under the Regulatory Authority's supervision.

The Regulatory Authority will collect and deal with any orphan sources that are found. It will try to identify the owners with a view to taking legal action against them. It will deal with the sources by conditioning them and placing them in final storage.

The Regulatory Authority collects disused sources from the radiotherapy and nuclear medicine departments of hospitals and from universities, research centres and industrial establishments and treats them as radioactive waste, charging the costs to the users and recording all information about the treatment procedures.

The Regulatory Authority visits user facilities to ensure that no sources have been left there by mistake.

The Regulatory Authority maintains plans for responding immediately to incidents.

CONTROLLING THE ENTRY OF RADIATION SOURCES AND OTHER RADIOACTIVE MATERIALS INTO THE COUNTRY

The Regulatory Authority has, in co-operation with the police and customs authorities, installed radiation monitoring portals at the main points of entry into the country in order to prevent the illegal entry of unauthorized radiation sources and other radioactive materials. In addition, it carries out inspections of scrap with the co-operation of the police authorities.

At the main points of entry, there are also hand-held radiation detectors available.

EMERGENCY RESPONSE

For major incidents there is a National Emergency Plan and a response team with members drawn from many national institutions. For smaller incidents, the Regulatory Authority has its own emergency response team. The members of both teams undergo regular training.

Each radiation source user is required to have an emergency response plan. Regular training is organized for user personnel under the supervision of the Regulatory Authority.

The Regulatory Authority holds radiation protection training courses which include training in the safety of radiation sources and radioactive materials.