



Exclusion, exemption and clearance

Improving radiation protection in practice

The concepts of **exclusion, exemption and clearance** establish the scope of regulatory control and are an intrinsic part of the **graded approach** to regulation.

- Some radiation exposures are such that there are no realistic steps that can be taken to control either the source or the magnitude of the exposure. Such sources and exposures are said to be excluded from regulatory control.
- Some radiation sources have such a low level of risk that they can be exempted from regulatory control.
- In some cases, regulatory control over certain radioactive sources or radioactive material is no longer necessary; the process of removing regulatory control is called clearance.

Applying a graded approach does not compromise safety and is an important consideration in all regulatory activities. What the graded approach means is that we use our resources, which are often limited, in a manner that takes account of the associated risks. The greater the risk, the greater percentage of our resources we should devote to regulating that activity. Consequently, we apply a smaller percentage of our resources to those activities where the risks are lower or minimal.



When applied correctly, these concepts of **exclusion, exemption and clearance** can free up resources that would otherwise be used for low risk activities. This can lead to an overall safer regulatory environment where managing high risk activities is prioritized.

EXCLUSION

“the deliberate excluding of a particular type of exposure from the scope of an instrument of regulatory control on the grounds that it is not considered amenable to control through the regulatory instrument in question.” Examples include potassium-40 in the body and cosmic radiation at the earth’s surface.

EXEMPTION

“the determination by a regulatory body that a source or practice need not be subject to some or all aspects of regulatory control on the basis that the exposure and the potential exposure due to the source or practice are too small to warrant the application of those aspects or that this is the optimum option for protection irrespective of the actual level of the doses or risks.”

CLEARANCE

“the removal of regulatory control by the regulatory body from radioactive material or radioactive objects within notified or authorized facilities and activities.”

What do the IAEA Safety Standards say?

In 2014, the IAEA has published the *General Safety Requirements Part 3: Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards*. This is often referred to simply as the BSS. The BSS is jointly sponsored by eight international organizations with responsibilities in various areas of radiation protection.

The requirements in the BSS take account of the most recent scientific evidence relating to exposure due to radiation. The BSS is used by many States as the basis for their national regulations dealing with radiation protection and safety.

The IAEA Safety Guide: *Application of the Concepts of Exclusion, Exemption and Clearance (RS-G-1.7)* provides detailed guidance on how

these three concepts can be applied as part of the graded approach to regulation.

The BSS provides tables of values of total activity and activity concentrations for several radionuclides that can be used as the basis for exemption and clearance of materials in justified practices without further consideration. The approach to exempting radiation generators and other equipment on the basis of type approval is also documented in the BSS.

In addition to the IAEA, the BSS is jointly sponsored by the European Commission, the Food and Agriculture Organization of the United Nations, the International Labour Organization, the Nuclear Energy Agency of the Organisation for Economic Co-operation and Development, the Pan American Health Organization, the United Nations Environment Programme and the World Health Organization.



Challenges



Some of the values for exemption and clearance in GSR Part 3 are valid only for solid material. Currently there are no similar values for liquids or for gases, nor for surface contaminated items. The IAEA is currently working to develop such guidance to support Member States.

The concepts of exemption and clearance apply only to planned exposure situations, often referred to as practices. The individual dose criterion is 10 μSv in a year, or up to 1 mSv/y from situations that may occur, but only occasionally.

A case by case exemption is applied for bulk materials containing radionuclides of natural origin, using an individual dose criterion of the order of 1 mSv in a year.

When contaminated items are either exempted or cleared, they are by definition in free circulation. It is therefore important that the criteria for applying exemption

Regulatory bodies need to apply the graded approach to their own activities and also in relation to the requirements they place on operators and licensees.



and clearance are consistent with the requirements in the IAEA Transport Regulations so that these items can be freely transported and traded.

How does the IAEA support Member States?



The IAEA supports its Member States in the implementation of all aspects of the Safety Standards through the organization of national and regional workshops and other training events. Online webinars are also regularly organized.

