

### 3 THE PREVENTION OF MALICIOUS ACTS

Nuclear security, as defined by the Nuclear Transparency and Security Act of 13 June 2006, comprises nuclear safety, radiation protection, the prevention of and fight against malicious acts, as well as civil protection actions in the event of an accident.

The purpose of this sheet is to address the issue of the security of civil nuclear installations and activities and the corresponding responsibilities of the State. In the rest of this document, the word security is used solely to signify protection against malicious acts.

Security aims to prevent, detect and deal with the various threats, which are also liable to adapt to the countermeasures put in place to block them. These threats consist either in misappropriating and stealing nuclear materials<sup>1</sup> or radioactive sources, in order to launch a terrorist attack or build weapons of mass destruction or dirty bombs, or to sabotage installations, the result of which could be to trigger a radiological accident.

In terms of security, the State determines the threats to be considered, defines the regulations, their implementation and their enforcement, and lays down the conditions for the use of the public security forces.

It should be noted that internationally, and in particular with regard to drafting of the new IAEA standards, there is a strong desire for integrated handling of safety and security measures, to ensure that the measures taken in one field do not compromise those taken in the other.

#### THE THREAT OF THEFT OR MISAPPROPRIATION OF NUCLEAR MATERIALS

The goal is to prevent an individual or terrorist group from obtaining nuclear materials with a view to building weapons of mass destruction.

Legislation was passed to ward off this threat and to guarantee that France meets its international commitments, particularly with regard to the non-proliferation treaty: a system of licensing and declaration obliges the 650 licensees in possession of certain materials, to take technical steps for the physical protection, supervision and accounting of their nuclear materials.

The Defence and Security High Official (HFDS) at the Ministry for Energy, which is the administrative authority in charge of this system, in fact relies to a large extent on the Institute for Radiation Protection and Nuclear Safety (IRSN) for national accounting of nuclear materials and supervision of their transportation. Furthermore, about fifty IRSN staff

members take part in the regulatory activities stipulated in Article L.1333-4 of the Defence Code. IRSN thus takes part in about 170 inspections per year and issues about 450 technical opinions to the relevant HFDS.

EURATOM and IAEA also regulate nuclear materials.

In order to improve the effectiveness of the inspections and avoid redundancy between safety and security in the regulation of nuclear materials, greater synergy could be sought between ASN and the HFDS at the Ministry for Energy.

#### THE THREAT OF SABOTAGE IN NUCLEAR INSTALLATIONS

Owing to the potential risk involved in the presence of radioactive materials, nuclear installation design includes safety analyses to envisage all plausible scenarios that could lead to accident situations and to prove that steps have been taken to deal with them. These steps must also be effective, or adapted if the initiating event were due to a malicious act.

Malicious acts are therefore considered to be initiators of accident situations for which the possible developments and necessary countermeasures are examined using the same rules as for accidents resulting from another cause (earthquake, fire and so on).

The malicious acts safety analyses carried out by the nuclear licensees are examined by the advisory committees of experts set up by the HFDS at the Ministry for Energy, supported by ASN, with subsequent production of an opinion.

The way in which the issues related to the sabotage of nuclear installations are handled could be improved: the regulations are not precise enough, because the authorisation decree makes no specific mention of the sabotage threat. This means that there are still no actual implementation procedures for the requirements of decree 2007-1557 of 2 November 2007 relating in particular to basic nuclear installations, which state that any preliminary safety analysis report must present on the one hand an inventory of the risks of all origins that could be faced by the installation and on the other the steps taken to prevent these risks and mitigate the consequences of any accidents. This is an important area for work by ASN, together with the HFDS at the Ministry for Energy, with the aim of ensuring consistency between the measures concerning both security and safety.

ASN considers that although nuclear installations are adequately protected, it would be preferable, as in most nuclear countries, if nuclear security and nuclear safety were regulated within a single framework, in order to promote effectiveness and consistency. In the same way as its foreign

1. The nuclear materials used in the construction of nuclear weapons are defined in Article R.1333-1 of the Defence code.



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counterparts, ASN is prepared to take on this responsibility. Improved interfacing between the requirements, or even a single authorisation addressing both safety and security concerns, would be a means of improving consistency between provisions in these two fields.

### RADIOACTIVE SOURCE SECURITY

Radioactive sources are extensively used in the industrial, medical and research fields. Their use is subject to regulations prepared by ASN and incorporated into the Public Health Code. Application of these regulations is checked by ASN radiation protection inspectors.

Although the radiation protection requirements on the whole contribute to the prevention of malicious acts, they are not however sufficient to guarantee a high level of security for the most dangerous sources.

Tighter regulation of the most dangerous sealed radioactive sources was also strongly encouraged by IAEA, which published a Code of Conduct on the Safety and Security of Radioactive Sources (approved by the Board of Governors on 8 September 2003) along with guidance for the import and export of radioactive sources (published in 2005). The G8 supported this approach, in particular at the Evian summit (June 2003) and France gave IAEA confirmation that it was working towards implementation of the guidelines laid out

in the Code of Conduct (undertaking by the Governor for France on 7 January 2004). The current provisions of the Public Health Code enable France to meet the obligations stipulated in the Code of Conduct, except with respect to security, given that France has designated no State authority with competence for source security.

ASN proposed itself to the Government as the competent authority for the security of radioactive sources, provided that it received the necessary resources and would be able to apply its own rules for guaranteeing public information transparency. Through an integrated approach to security, safety and radiation protection, this would allow the creation of an efficient and rigorous system for ensuring the security of radioactive sources.

### CONCLUSION

To improve the effectiveness and consistency of the action taken by the State, ASN believes that integrated regulation of nuclear safety and nuclear security by a single authority would be preferable, as is the case in most nuclear countries. For nuclear security as a whole, an organisation could be set up involving the government in charge of regulating and defining the threats to be considered, an administrative authority, ASN, preparing the regulations and exercising supervision, and a single expert assessment organisation, IRSN.