

# Preparatory Committee for the 2026 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons

3 August 2023

Original: English

---

## First session

Vienna, 31 July–11 August 2023

### **Nuclear safety and security serving the development of nuclear energy and its applications**

#### **Working paper submitted by France**

1. In accordance with article IV of the Treaty on the Non-Proliferation of Nuclear Weapons, all States have an inalienable right to use nuclear energy for peaceful purposes, opening up access to low-carbon energy and applications working to achieve the Sustainable Development Goals, such as economic growth and good health and well-being.
2. Nuclear accidents have highlighted the need for higher safety standards for the safe and responsible use of nuclear energy, in order to provide sustainable nuclear energy which can meet future energy and non-energy needs. Such events have led the international community to tighten nuclear safety requirements with the aim of preventing accidents and limiting their radiological consequences for populations and the environment.
3. In the industrial sector, the accident in Goiânia, Brazil, in 1987 raised awareness among the international community about the need to regulate the use of radioactive sources.
4. In the medical sector, in France alone some 20 accidents, which go back some time, can be considered particularly serious, such as those in the area of radiotherapy in Grenoble in 2003, Lyon in 2004 and Tours in 2004, as well as in Épinal between 2001 and 2006 and Toulouse in 2006 and 2007. They were the result of the late detection of errors and indicate major organizational problems, in particular, failure to observe basic quality management rules.
5. Such accidents are likely to reduce public confidence, and yet this confidence is essential in order to establish and enhance acceptance of this technology by the public over the long term. Given the growing need for nuclear energy, public confidence in the validity of using this energy to meet the challenges of climate change and achieve our objectives thus remains a priority which requires the energy to be used in a safe, responsible and transparent manner.



## **I. An international legal environment conducive to enhancing cooperation among States**

6. Nuclear energy and nuclear applications in industry and medicine are developed within an international nuclear safety and security framework which is based on a series of international legal instruments. These instruments include not only legally binding conventions<sup>1</sup> but also non-binding codes of conduct and recommendations.<sup>2</sup>

7. The implementation of these legal instruments by States helps facilitate and regulate the deployment of nuclear technologies, in particular, via international cooperation.

8. International cooperation is encouraged by regular meetings to assess the implementation of the various legal instruments. These international meetings provide opportunities, among other things, to strengthen:

(a) The sharing of best practices, thus helping to continually improve nuclear safety and security regimes and the vigilance of States and agencies in the face of nuclear risks;

(b) The harmonization of safety procedures, while guaranteeing the sovereignty of States in these areas;

(c) The sharing of the fundamentals of national safety and security regimes by explaining in a national report the operational implementation of the provisions set out by the relevant instrument.

For nuclear industry operators, the harmonization of safety procedures can have definite benefits for the large-scale deployment of nuclear technologies. It is, for example, in this vein that the International Atomic Energy Agency launched the Nuclear Harmonization and Standardization Initiative and the European Union began the partnership on small modular reactors (SMR Pre-Partnership), both of which aim to promote dialogue among regulators, among industry operators and between regulators and industry operators. Furthermore, with a view to assessing the safety of these new technologies, in 2021 the Committee on the Safety of Nuclear Installations of the Organisation for Economic Co-operation and Development's Nuclear Energy Agency created an expert group to identify and prioritize the shortcomings in current scientific knowledge and recommendations for overcoming them.

## **II. Transparency and dialogue, essential factors for public confidence**

9. Public confidence in nuclear technologies is built in particular on the transparency of the decision-making process and the involvement of actors. The constant dialogue among State and civil society representatives on safety and security issues is part of an inclusive approach encouraging technical and scientific knowledge-sharing in order to assess the issues and risks associated with the use of

---

<sup>1</sup> In particular, the Convention on Nuclear Safety, the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, the Convention on the Early Notification of a Nuclear Accident, the Convention on Assistance in the case of a Nuclear Accident or Radiological Emergency, the International Convention for the Suppression of Acts of Nuclear Terrorism, and the Amendment to the Convention on the Physical Protection of Nuclear Material.

<sup>2</sup> In particular, the Code of Conduct on the Safety and Security of Radioactive Sources, the Code of Conduct on the Safety of Research Reactors, and the Nuclear Security Recommendations on Physical Protection of Nuclear Material and Nuclear Facilities.

nuclear energy, and maintaining vigilance among actors on highly sensitive but fundamental issues for the responsible use of this energy. Many international conferences also follow this approach of State transparency with regard to populations. As for nuclear security, this dialogue must highlight the importance of intrinsically sensitive data remaining confidential.

### **III. Technical cooperation**

10. Technical cooperation is essential for States to more widely share the benefits of nuclear applications and to concretely implement States' inalienable right to use nuclear energy for peaceful purposes. In that respect, health care, and in particular radiotherapy, is an important theme for facilitating access to advanced technologies to detect and treat cancer. The IAEA Rays of Hope initiative is working fully to this end.

11. However, capacity-building among the States concerned and increased use of these techniques are not without risk. In particular, it requires strong regulatory frameworks and highly specialized skills. It is thus by creating national regulations and developing in-depth skills and national expertise in the area of nuclear medicine that States can, in the long term, draw on all the benefits of technical cooperation under good safety and security conditions.

### **IV. Safety and security guidelines to encourage trade in radioactive sources**

12. The guidelines on the import and export of radioactive sources are a useful addition to the Code of Conduct on the Safety and Security of Radioactive Sources, by facilitating the trade of these sources under appropriate safety conditions. In particular, they ensure the harmonization of regulatory controls among countries.

### **V. Safety and security cultures, essential components in the responsible use of nuclear technologies**

13. The goals of protecting people and the environment, as well as maintaining a country's energy supply and nuclear applications, which underpin nuclear safety provisions, could not be achieved without considering nuclear security issues.

14. In the current environment, the physical protection of nuclear installations and the preservation of their physical integrity remain the top priorities, alongside the threat of nuclear or radiological terrorism, which must be taken into account now more than ever.

15. In particular, the vulnerability of information systems and internal threats are two components of nuclear security which, with the widespread use of digital tools, significantly increase risks, including with regard to the safety functions of nuclear installations and radioactive sources. In the face of these threats, the organizational strategies and technological provisions implemented to protect information systems, mitigate internal threats and ultimately ensure that installations run smoothly and play their full role must be supplemented by sharing nuclear safety and security cultures.

16. In this regard, the safety and security cultures must highlight that nuclear safety and security are a matter for everyone within organizations, for the good of everyone.

17. This is reflected in:

- Permanent vigilance from each actor to serve the group, and constant attention regarding the operation of an installation and on-site organization
- The implementation of measures understood by all parties and adapted to organizations' daily routines
- Working conditions conducive to exchanging information and sharing feedback among actors based on confidence and goodwill, ethics and fairness, which give meaning and ensure the detection and reporting of information
- A priority to ensure scientific knowledge is maintained and developed for the benefit of future generations
- Effective cooperation between State services and organizations

## **VI. Conclusion**

18. In conclusion, nuclear safety and security are public goods which we must develop and promote to provide populations with legitimate and fair access to nuclear technologies in order to facilitate access to health care, electricity production and economic development, as well as the fight against climate change.

19. While nuclear safety and security cultures are primarily developing within a national framework, to fully mature they require exchanges enabled by international cooperation and facilitated by existing legal instruments, whether binding or not.

20. Finally, the development and sharing of safety and security cultures are fundamental for enhancing public confidence in this energy, in turn enabling public support for increased use of these technologies and various applications in all their diversity, benefiting the entire global population.

---