



IRSN

INSTITUT
DE RADIOPROTECTION
ET DE SÛRETÉ NUCLÉAIRE

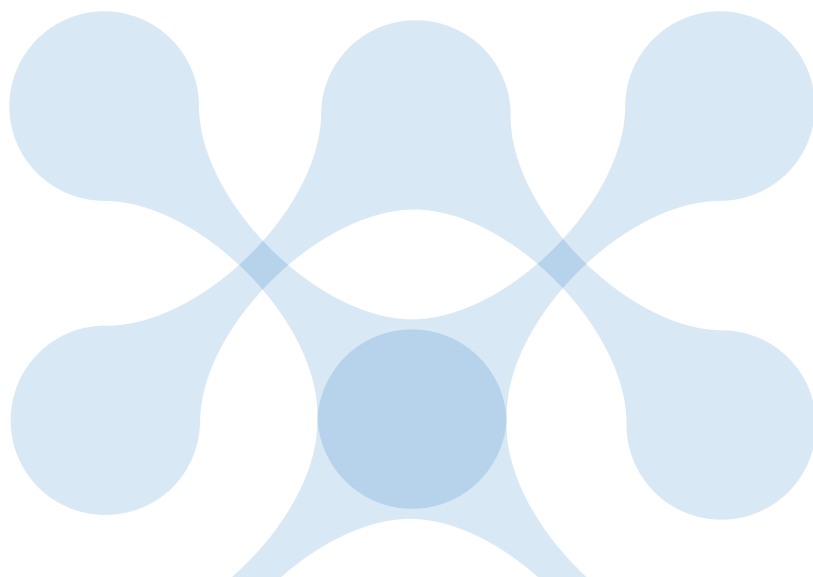
Enhancing Nuclear Safety



**Ambition
& Strategy
2030**



Editorial





Since its creation, IRSN has been contributing to protecting the public against the risks linked to the use of all forms of ionizing radiation and public awareness.

In an ever changing world, the sustainability and relevance of our action require constant adjustment to new challenges.

Our project is to enable the Institute, working in close conjunction with the public authorities, to adapt at all times so that nuclear safety and security, as well as human and environmental protection, are of the highest standard in a society that is pro-active in managing these risks.

In an innovative and digital world, the women and men from IRSN, in conjunction with their French or foreign counterparts, and interacting with the general public, will more than ever before devote their research skills, expertise and know-how to achieving excellence in their work.



Dominique Le Guludec
Acting Chairperson

.....
Jean-Christophe Niel
Director General

Introduction to IRSN

IRSN is the public body of research and expertise in the French nuclear safety and radiation protection system covering:

- Safety of nuclear plants, transportation, and waste,
- The protection of facilities and transportation against the risks of malicious acts and proliferation,
- The protection of human beings and the environment against ionizing radiation, with a specific focus on the monitoring of medical exposure,
- Management of nuclear and radiation emergencies.

By providing its independent expertise and by its help in decision-making for all stakeholders, the Institute contributes to public policies and enhances safety, security and radiation protection under normal and emergency response conditions.

Scientific knowledge is at the heart of its mission and underpins the quality of its expert assessments of the most complex topics. IRSN works with research bodies with a view to furthering this knowledge and gaining access to the latest state of the art.

The Institute seeks to dialogue with society and take account of its expectations. It provides information about the risks.

It also provides services and training.

IRSN is active at national, European and international level.

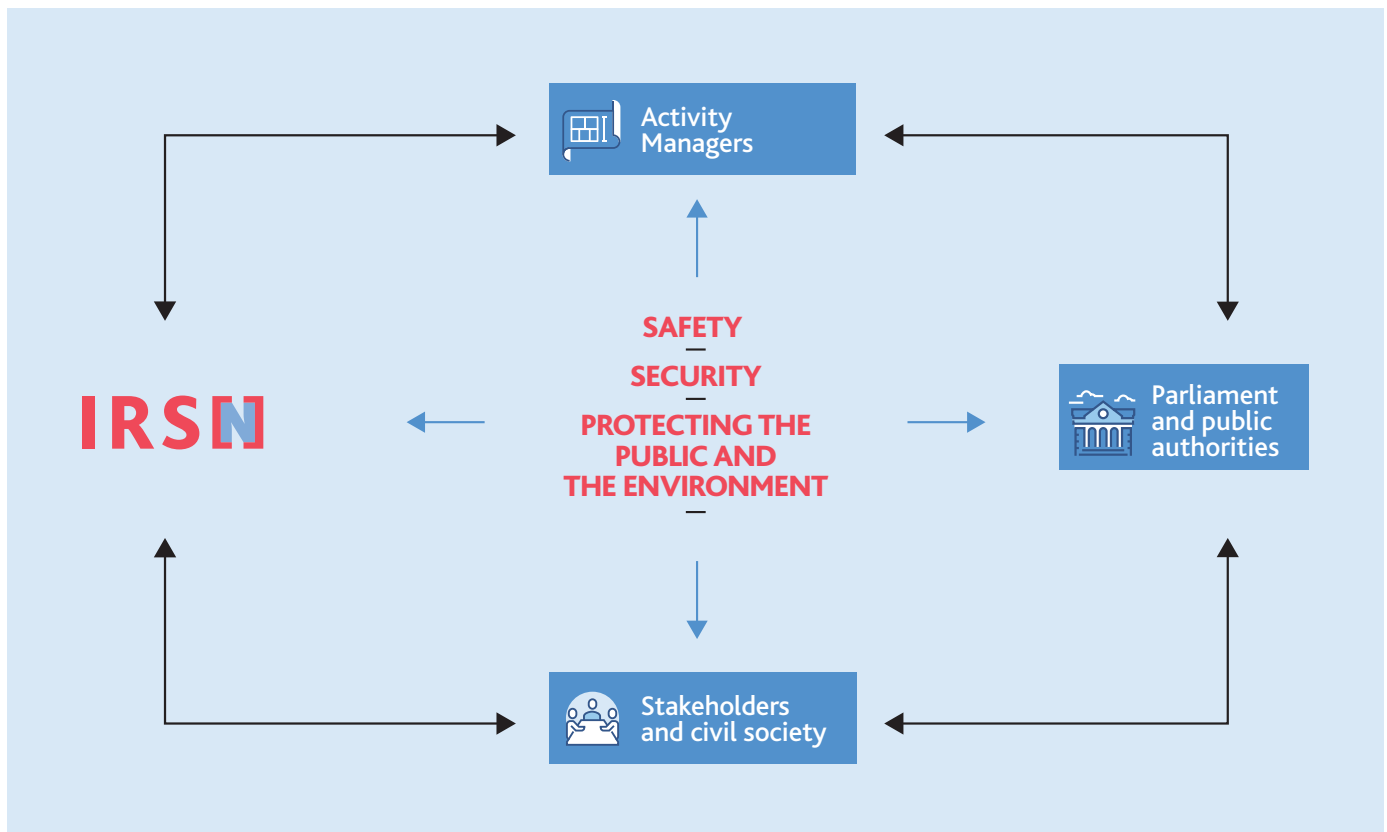
IRSN:
key figures (2016)

1,770
employees

287 M€
in expenditure,
broken down
as follows:

41.4%
for research

49% for technical
support and public
service missions



The objectives of the document

This document is borne out of IRSN's desire to identify, analyze and take account of the current and future challenges stemming from developments in the field of nuclear safety and security and protection against ionizing radiation. It sets out the strategic directions and the related goals for the years ahead.

The exogenous contextual aspects of the challenges that guided this reflection were analyzed in depth and gave rise to some fifteen meetings with in-house and external stakeholders during which these challenges were discussed and further clarified.

All of the content of this document was also shared with IRSN staff, so that it could be amended as part of a collective and jointly developed project.

Main challenges

As a national, European and international partner in the management of nuclear safety and radiation protection risks relating to industrial, health, defense or research activities, IRSN will have to address a large number of challenges in the years ahead.

There are primarily two types of challenges with significant implications for society:

- Safety, security, and protection against ionizing radiation, which must be ensured at the highest level,
- The public's growing need to understand and take part in decision-making on issues relating to health or environmental risks.

In the industrial sector, the main challenges are:

- Changes to the energy mix, in particular as a result of a reducing number of plants benefiting from an extended life-time, and an increasing number of plants in the decommissioning phase,
- Plants and the nuclear and radioactive waste transport, which are exposed to sustained and high-level threats, including cyber-attacks.
- The economic constraints of the Operators and industrial partners in the French nuclear sector may reduce the share of research and resources devoted to safety and security,
- Existing and future radioactive waste produced by the various activities that use ionizing radiation in the industrial, medical or research fields, and which must be managed safely over the long term,
- The Fukushima accident, which reminds us of the importance of emergency response management, both during the emergency and post-accident phase, and its possible cross-border implications,

- The impact of global warming on naturally-occurring hazards must be re-assessed to draw the necessary conclusions on the consequences for the sustainability of nuclear safety in the long term.

At the same time, the safety or security assessment process must take account of technical innovations and new ways of organizing work and work practices.

The impact of the development of our societies on the environment is a major and growing concern and, consequently, accurate knowledge of the consequences of activities involving radioactivity as well as their monitoring is essential.

The health sector is experiencing a period of significant change:

- In terms of diagnostics and treatments as a result of the increased use, for the benefit of patients, of imaging and non-invasive methods, as well as the use of new, high-performance equipment,
- In the field of research, thanks to new knowledge in biology and the development of robust calculation capabilities.

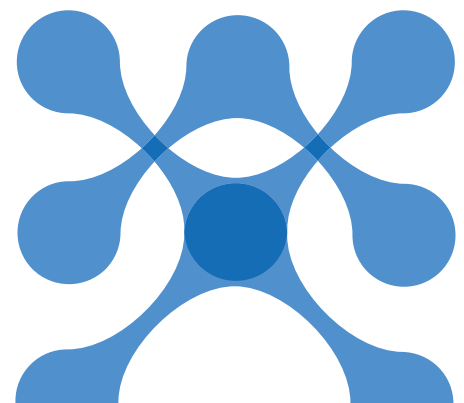
At the same time, this field is subject to budget cuts from the government. These two factors generate challenges, such as:

- Understanding and integrating the major developments in the field of biological and medical research into the research on the consequences of the use of ionizing radiation,
- The diagnostic and treatment tools that emit ionizing radiation are becoming increasingly accurate, powerful and complex and their uses, which are increasing, are becoming widespread,

Lastly, in terms of the functioning of organizations and companies, the organizational structures and work processes, as well as staff expectations, skills and tools are changing at a sustained and continuous pace, particularly as a result of the digital transformation. There is sharp focus on the sustainable and efficient running of public bodies in this new context.

As regards public expectations, the annual IRSN Barometer of how people in France perceive risks and safety confirms the growing need to have access to expert assessments and to address concerns and to hold public debates. This is a major challenge in a context in which:

- Ethical and transparency requirements are being stepped up and are becoming, in the same way as skills, essential to building trust,
- There is a growing demand to understand and learn about the risks and their management,
- The citizen's involvement in public decision-making is likely to increase along lines that are still to be further developed and experimented.



A fourfold ambition to respond to these challenges



- Steer and conduct research on nuclear and radiological risks in an international setting
- Prioritize expertise favoring informed decision-making
- Maintain high-level competency in the area of research, expertise and emergency response management
- Manage knowledge and use data within a digital environment



Excellence

- Continue to guarantee impartial expert assessments relating to overall risk management
- Be a recognized and trusted player
- To maintain the early warning role of IRSN
- Foster internal debate



Independence



Expectations

- Pro-actively identify the new challenges and address them
- Broaden its capacity to cover all kinds of emergencies
- Foster an innovative mindset and creativity
- Mobilize teams to address emerging issues



Sharing

- Develop partnerships with civil society for the common good
- Share priorities with the authorities in order to foster the efficiency of public action
- Strengthen European cooperation in the field of research, expertise and experience feedback
- Develop synergies within the Institute



A fourfold ambition and strategic goals



Excellence

For IRSN, excellence means permanently striving to achieve the highest level of quality in the Institute's activities and performances of its missions.

The quest for excellence is founded on the acquisition of knowledge, comparisons with other practices, competence and capacity building.

IRSN participates in national, European and international networks in order to make best use of the practices and work of our counterparts, and to put forward its priorities for the orientation of research programs.

The confrontation with other practices is necessary in order to guarantee the quality of our methods and knowledge; it includes scientific and technical controversy favoring an open technical debate. It is founded on IRSN's ability to question itself and this is considered as an essential quality expected from all staff at the Institute.

Competence building is based on continuous acquisition of knowledge and its practical application. To this end, IRSN draws on mentoring and tutoring, the schools within its internal University and development of knowledge management.

In order to achieve this goal, IRSN must:

- Steer and conduct research on nuclear and radiological risks in an international setting
- Make expert assessments a priority in order to improve decision-making
- Maintain high-level competency in the area of research, expertise and emergency response management
- Manage knowledge and use data within a digital environment



To this end

#1

IRSN promotes an integrated approach to risk assessment both in its expertise and its research.

#2

IRSN carries out its work with a European and international focus, with a desire to build on existing networks, such as ETSON, share its experience, methods and tools and disseminate the results of its work.

#3

IRSN develops ties with other bodies, including academic teams, in order to mobilize support for its priorities and enhance its skills.

#4

IRSN is dedicated to running scientific communities that contribute to enhancing knowledge of risks. Its active participation in official international agencies implements a strategy of exchange between researchers and experts from third party organizations worldwide.

#5

IRSN promotes its platforms within a national, European and international setting.

#6

IRSN is improving its efficiency by simplifying its governance and operating procedures and through dynamic, open-minded, people-centered human resource management.

#7

IRSN fosters the sharing of the challenges, objectives and results of its programs among researchers and experts. It promotes synergies between expert assessments and research through its organizational structure, programs and career paths.

#8

IRSN makes use of external expertise in order to underpin its positions.

#9

IRSN is modernizing the means to issue better and faster data and knowledge through the development of new digital tools.

#10

IRSN attaches the utmost importance to managing the risks arising from its own activities within the framework of a sustainable development approach.



Independence

The independence of IRSN means impartial scientific and technical opinions and an ability to investigate the challenges within its remit and within the framework of its governance structure.

IRSN conducts its expert assessments and research in conformity with its ethics charter, with full impartiality and on the basis of the scientific and technical state of the art, without bias, and without the conclusions of its expertise and research being influenced by any party whatsoever.

IRSN must interact with the various stakeholders and **show an overarching vision** and be self-critical when taking into consideration the relevant aspects relating to the performance of its expertise and research.

In order to achieve this goal, IRSN must:

- Continue to guarantee impartial expertise relating to overall risk management
- Be a recognized and trusted player
- Continue to play its early warning role
- Foster internal debate





To this end

#1

IRSN organizes itself in such a way that it makes use of the best and latest knowledge available, fosters new ideas and techniques and makes them accessible within the Institute.

#2

IRSN's approach includes confronting different scientific and technical viewpoints, hence fostering open debates on technical issues with all stakeholders, both inside and outside the Institute, and ensuring that it reflects these viewpoints.

#3

IRSN compares its concepts, methods and positions with those of its national and European counterparts and adapts them if necessary.

#4

IRSN promotes a level-headed approach to risks and looks at how it can take a balanced view of non-nuclear or radiological risks.

#5

IRSN's communication is founded on the impartiality of its technical and scientific risk assessments.

#6

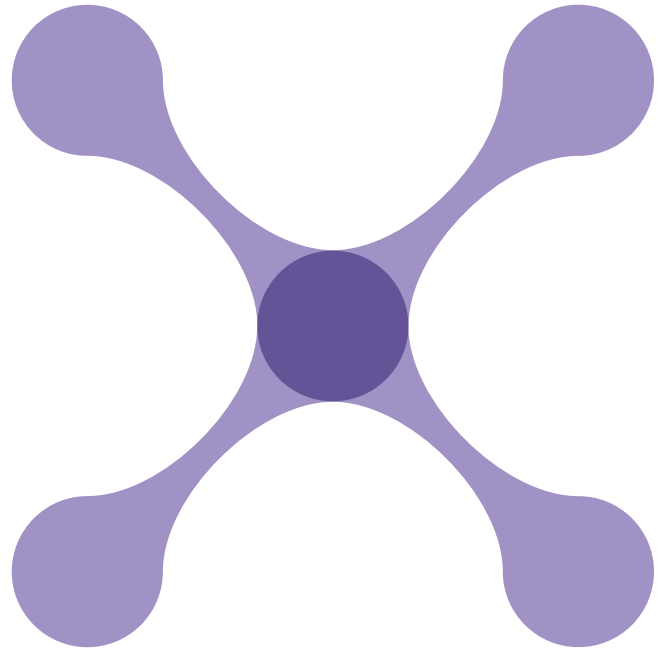
The researchers and experts from IRSN are potential spokespersons for the Institute within their fields of expertise; IRSN promotes the dissemination of the work they produce.

#7

If IRSN identifies a situation that could present safety, radiation protection or security risks, IRSN assesses it and reports back to the relevant stakeholders within a reasonable time frame.



Sharing



At IRSN, sharing means its ability to dialogue with all stakeholders on risk management and seeking to involve them in its work.

IRSN promotes an open, collaborative approach, allowing the sharing of knowledge, experience and approaches to risk management.

IRSN conducts its expertise and research with full transparency, using the best knowledge and drawing on its partnerships and networks of excellence; it maintains a constant open channel with the authorities, its partner counterparts and civil society.

IRSN uses this capacity for sharing to be able to make new proposals for better risks management in France, Europe and worldwide.

IRSN develops synergies and cooperation within the framework of its internal coordination and management.

In order to achieve this goal, IRSN must:

- Develop partnerships with civil society for the common good
- Share priorities with the authorities in order to foster the effectiveness of public action
- Strengthen European cooperation in the field of research, expertise and experience feedback
- Develop synergies inside its organization



To this end

#1

IRSN promotes its know-how and knowledge within the framework of its partnerships, teaching activities and service provision.

#2

IRSN adopts a pluralistic approach to risk management by fostering synergies inside and outside its organization.

#3

IRSN involves non-governmental experts and citizens in its work, including in the performance of its expertise and research activities.

#4

IRSN maintains permanent and constructive dialogue with the authorities and public administrations in order to be able to discuss the risk management challenges and priorities, including in the research field, and to make public action more effective.

#5

IRSN shares its experience, knowledge and expertise approaches in order to promote, in conjunction with its European and international partners, a harmonized approach to risk management in Europe and worldwide.

#6

IRSN is active in the academic world teaching, particularly in the academic field, in order to contribute to better understanding and management of risks.

#7

IRSN is pursuing its educational initiatives among young people.

#8

IRSN shares its needs for knowledge about risks and fosters collaborative work and partnerships within the framework of its research activities.

#9

IRSN oversees the development of a shared safety culture within its organization.

#10

IRSN is strengthening its ability to adapt internally in order to make sure that the teams and the tools easily adapt to future environment changes.



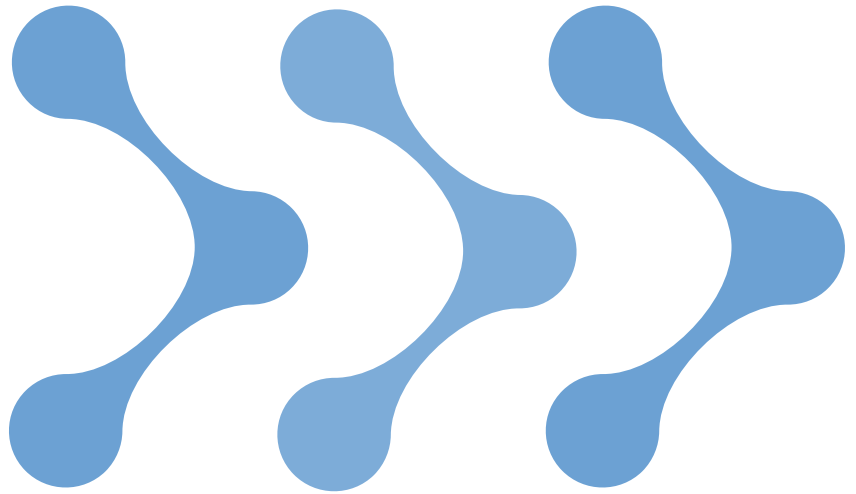
Expectations

In order to carry out its missions within a world of rapidly changing information systems, work processes and communication means and to meet the expectations of the public authorities and civil society, IRSN strives to act with foresight on a permanent basis and, to this end, develops its ability to innovate.

This foresight relates to emerging challenges, future technologies, new approaches to governance and risk assessment, as well as innovative working methods or new tools. As a public expert, it is responsible for identifying new risks or risks that are not sufficiently covered, in order to address them.

In order to achieve this goal, IRSN must:

- Pro-actively identify the new challenges and address them
- Broaden its capacity to cover all kinds of emergencies
- Foster an innovative mindset and creativity
- Mobilize teams to address emerging issues





To this end

#1

IRSN monitors risks, their root causes, their management and their perception by the public, and adapts its activities to take account of the related challenges.

#2

IRSN analyses real-life emergency situations and national and international emergency drills in order to better understand how they play out and their impacts on health and environment, and to determine the steps to be taken in conjunction with the various stakeholders.

#3

IRSN encourages its teams to take initiatives in order to foster innovation and foresight.

#4

IRSN is fully committed to the digital transformation of its internal and external activities in order to facilitate access to information and the processing of that information while ensuring that its information systems are secure.

#5

IRSN is innovating in order to make its governance more efficient and to foster collaborative work in the interests of simplification and flexibility.

#6

IRSN is focusing its research on challenges of the future and is developing its exploratory research.

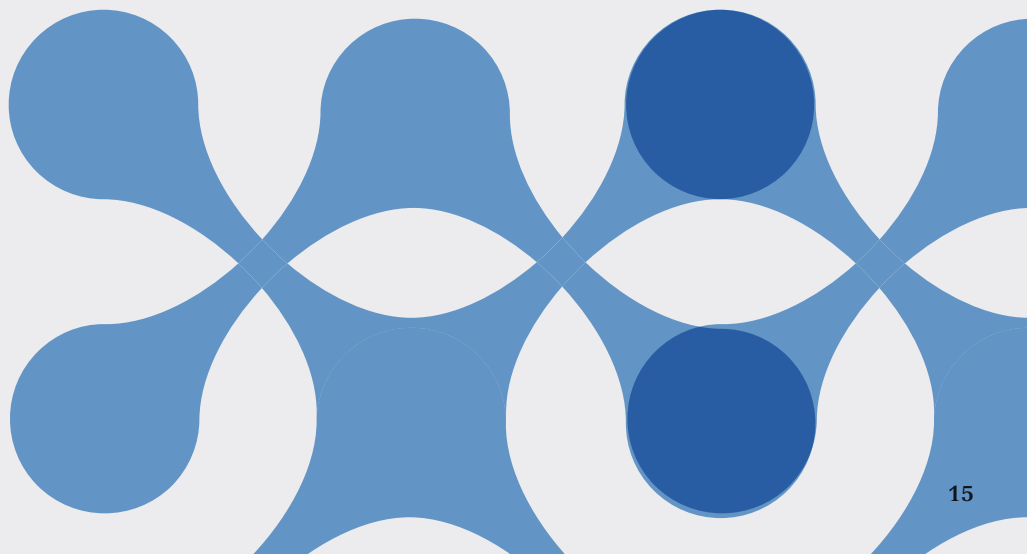
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Graphical design:

Agency *Heidi* - agence-heidi.fr

Printing:

FSC-certified Arcoprint paper, printed with ICL





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