

## PRINCIPLES AND STAKEHOLDERS IN THE REGULATION OF NUCLEAR SAFETY AND RADIATION PROTECTION

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On behalf of the State, the Nuclear Safety Authority regulates nuclear safety and radiation protection, in order to protect workers, patients, the public and the environment from the risks related to nuclear activities. It also contributes towards informing the citizens.

The fundamental aim of nuclear safety and radiation protection is to protect individuals, society and the environment, by establishing and maintaining effective defences against radiological risks in nuclear installations (Safety Fundamentals”, International Atomic Energy Agency, Safety series N° 110, 1993, www.aiea.org).

This aim takes the form of a number of operational objectives:

- in operating conditions, exposure to ionising radiations as a result of nuclear activities must be kept below the specified limits and at a level that is as low as reasonably achievable;
- preventive measures must be taken against accidents in nuclear installations;
- should an accident occur, steps must be taken to mitigate its consequences.

## 1 FUNDAMENTAL PRINCIPLES

Nuclear activities must be carried out in compliance with fundamental principles, some of which are contained in constitutional, legislative or regulatory texts.

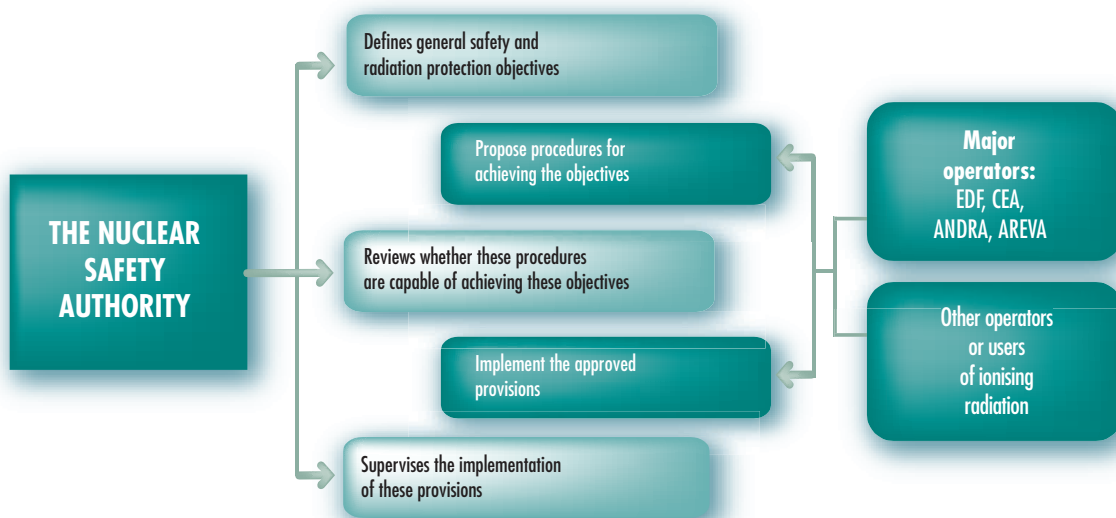
### 1 | 1 An international principle: the responsibility of the licensee

The responsibility principle states that the responsibility for activities entailing a risk lies with those who carry out these activities. This principle is defined in Article 9 of the Convention on Nuclear Safety in these terms: “Each Contracting Party shall ensure that prime responsibility for the safety of a nuclear installation rests with the holder of the relevant licence and shall take the appropriate steps

to ensure that each licence holder meets its responsibility”.

It more specifically applies to the following activities:

- licensees are responsible for the safety of basic nuclear installations (BNIs);
- consignors are responsible for the transport of radioactive materials;
- users of ionising radiations are responsible for the radiation protection of the public;
- suppliers are responsible for the recovery of radioactive sources;
- employers are responsible for the radiation protection of workers;
- the prescribing doctor and practitioner of the procedure are responsible for the radiation protection of patients;



Responsibility of licensees and responsibility of ASN

- polluters are responsible for any harm they may cause to the environment;
- producers of radioactive materials are responsible for waste disposal.

## 1 | 2 Constitutional principles

The Environment Charter, which supplements the preamble to the Constitution by virtue of constitution Act 2005-205 of 1 March 2005, in particular lays out the “polluter-pays”, precaution and participation principles.

### 1 | 2 | 1 “Polluter-pays” principle

Article 4 states that “All persons must contribute to repairing the damage they cause to the environment.” This polluter-pays principle introduced into the Environment Code is an application of the responsibility principle in that it ensures that the polluter responsible or potentially responsible for the environmental damage resulting from its activity bears the cost of pollution prevention and mitigation measures. This principle in particular entails the taxing of basic nuclear installations (BNIs) (the “BNI” tax), of radioactive waste producers (additional tax on radioactive waste) and of installations classified on environmental protection grounds (ICPE) (fraction of the general tax on polluting activities – TGAP).

### 1 | 2 | 2 Precautionary principle

Article 5 states that “When a particular damage, albeit uncertain in the light of current scientific knowledge, could seriously and irreversibly affect the environment, the public authorities shall employ the principle of precaution in their particular areas of competence to ensure that risk assessments are made and provisional, proportionate measures are taken to prevent the damage occurring”.

With regard to the biological effects of ionising radiations at low doses and low dose rates, the precaution principle adopts a linear dose-effect relationship without threshold. This point is clarified in chapter 1 of this report.

## 1 | 2 | 3 Public participation principle

Article 7 states that “In the conditions and limits laid down by law, everyone shall be entitled to access environment-related information in the possession of the public authorities and to take part in public decisions having an impact on the environment”.

In the nuclear field, public debates and public inquiries, in particular those linked to decisions regarding the creation or decommissioning of nuclear installations, allow the participation of local residents in the drafting of decisions by the public authorities. The consultation of regional authorities with respect to certain decisions and the creation of local information committees (CLI) are further illustrations of this participation principle. The right to information concerns all the fields of activity of ASN, which saw the scope of its powers enhanced by the TSN Act. It therefore contributes to informing the public about nuclear safety and radiation protection (role presented in chapter 6):

- informing the public about events occurring in BNIs or during the transport of radioactive materials, about discharges or releases from BNIs;
- informing workers about their individual radiological exposure;
- informing patients about the medical procedure, in particular its radiological aspect;
- public information.

## 1 | 3 Principles enshrined in the Public Health Code

Radiation protection follows the three principles specified in Article L. 1333-1 of the Public Health Code: justification, optimisation and limitation. These principles are developed further in chapter 3.

## 2 THE STAKEHOLDERS

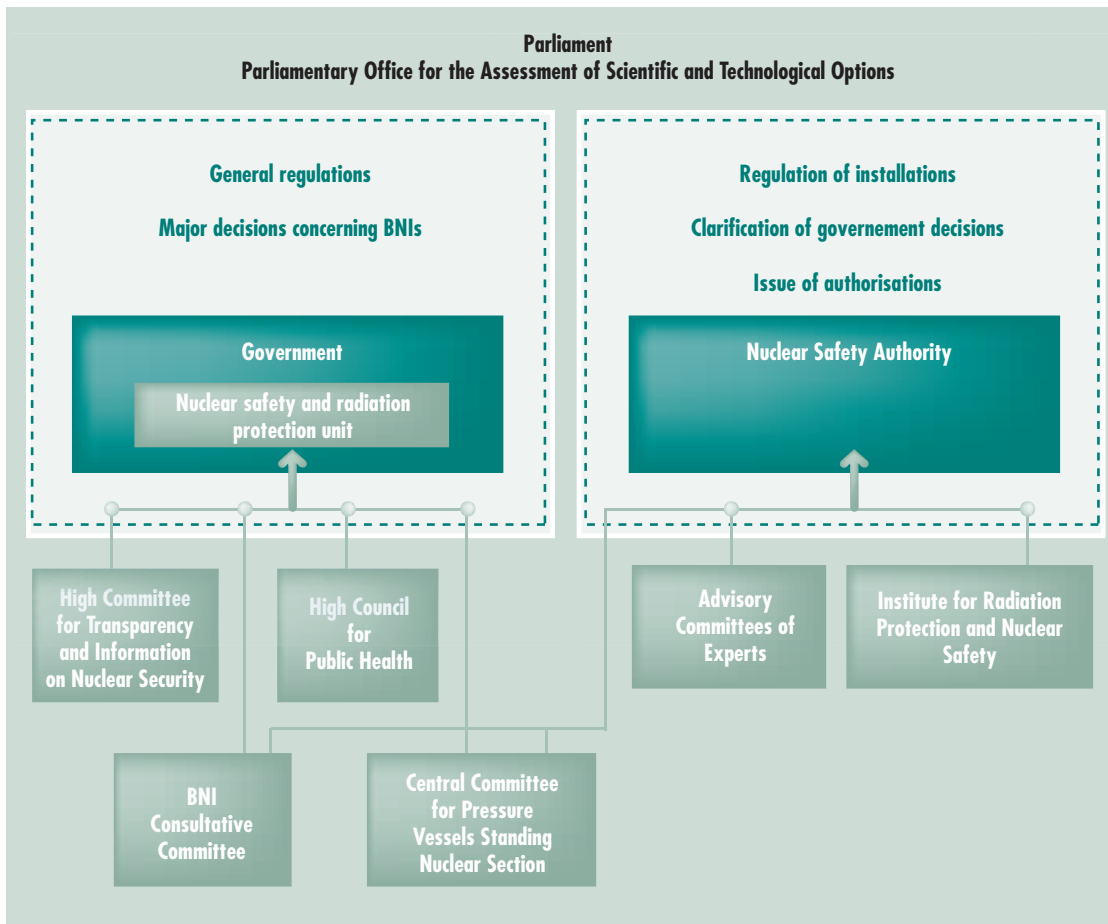
The Convention on Nuclear Safety, which has been ratified by France, lays down a framework for the regulation of nuclear safety and radiation protection. It in particular stipulates that “Each Contracting Party shall establish and maintain a legislative and regulatory framework to govern the safety of nuclear installations” (Article 7). Each State that is a party to the Convention on Nuclear Safety shall “establish or designate a regulatory body entrusted with the implementation of the legislative and regulatory framework referred to in Article 7, and provided with adequate authority, competence and financial and human resources to fulfil its assigned responsibilities” (Article 8).

In France, the regulation of nuclear safety and radiation is primarily the responsibility of three parties: Parliament, the Government and ASN. Article 4 of Act 2006-686 of 13 June 2006 concerning transparency and security in the nuclear field (TSN Act) lists the respective duties of the Government and ASN.

### 2|1 Parliament

Parliament’s role in the field of nuclear safety and radiation protection is in particular to pass Acts. Two major Acts were therefore voted in by Parliament in 2006 in the field of nuclear safety and radiation protection: the above-mentioned TSN Act and Programme Act 2006-739 of 28 June 2006 relative to the sustainable management of radioactive materials and waste. This latter act is in part codified in the Environment Code.

Like the other independent administrative authorities, ASN reports regularly on its activities to Parliament. ASN in particular presents Parliament with its annual *report on the state of nuclear safety and radiation protection in France*.



Regulating nuclear safety and radiation protection in France

## The Parliamentary Office for the Evaluation of Scientific and Technical Choices

Created by Act 83-609 of 8 July 1983, the Parliamentary Office for the Evaluation of Scientific and Technological Choices (OPECST) is a parliamentary delegation consisting of 18 members of the National Assembly and 18 members of the Senate, the composition of which is proportional to the political groups in each parliamentary house.

The role of the Parliamentary Office is to inform Parliament of the consequences of the scientific or technological choices made, in particular so that it can make its decision in full possession of the facts. The Parliamentary Office is assisted by a Scientific Council comprising 24 members, with the composition of the Council reflecting the diversity of scientific and technical disciplines.

In the field of nuclear safety, the Parliamentary Office has since it was created focused on the administrative organisation of safety and radiation protection, the arrangements made by the licensees in this field, the structures adopted in other countries and the adequacy of the resources given to ASN for the performance of its regulatory duties. Other studies concerned the management of radioactive waste and the lifetime of nuclear reactors, or socio-political issues such as the dissemination and perception of information about nuclear matters.

The Office's reports are produced ahead of an Act being voted, in order to prepare the legislative decision, or subsequently, to monitor implementation of the voted text. The Office's first report on radioactive waste, prepared by Mr. Christian Bataille and adopted in December 1990, was drawn on extensively by the 30 December 1991 Act on research into radioactive waste management. Similarly, the report by Mr. Christian Bataille and Mr. Claude Birraux entitled "Looking after the long term, an Act in 2006 on the sustainable management of radioactive waste", adopted by the Parliamentary Office on 15 March 2005, was also a significant source of inspiration for the 28 June 2006 programme Act on the sustainable management of radioactive materials and waste.

The members of the Parliamentary Office for the Evaluation of Scientific and Technological Choices also played an important role in drafting the 13 June 2006 Act on nuclear transparency and security. In particular, the rapporteurs for the bill in the Senate, Messrs Henri Revol and Bruno Sido, were also members of the Parliamentary Office for the Evaluation of Scientific and Technological Choices. Other members of the National Assembly, who were members, such as Messrs Christian Bataille, Claude Birraux, Jean Dionis du Séjour, Claude Gatignol, Jean-Yves Le Déaut, played a significant part in the debate on the bill in the National Assembly, with several of their amendments being adopted.

After its recommendations were transcribed into the 2006 Acts on the sustainable management of radioactive materials and waste and nuclear transparency and security, the Parliamentary Office was closely involved in supervising the implementation of these two Acts.

## 2 | 2 The Government

The Government, headed by the Prime Minister, exercises regulatory powers. The Government is therefore in charge of laying down the general technical regulations concerning nuclear safety and radiation protection. The 13 June 2006 Act also gives it responsibility for taking major decisions concerning BNIs. In so doing, it may rely on proposals or opinions from ASN.

It also has access to consultative bodies such as the High Committee for Transparency and Information on Nuclear Security, and the High Council for Public Health.

The government is responsible for civil protection in the event of an emergency.

### 2 | 2 | 1 The Ministers responsible for nuclear safety and radiation protection

The Ministers responsible for nuclear safety, as mentioned in the TSN Act of 13 June 2006, are the Minister for Ecology, Energy, Sustainable Development and Spatial Planning and the Minister for the Economy, Industry and Employment. They define the general regulations applicable to basic nuclear installations, if necessary on the basis of a proposal from ASN. They take the few major individual decisions required concerning:

- the design, construction, operation, final shutdown and decommissioning of BNIs;
- the final shutdown, maintenance and surveillance of radioactive waste disposal facilities;
- the construction and operation of pressure vessels specifically designed for these installations.

On the advice of ASN, if an installation presents serious risks, the above-mentioned ministers may pronounce suspension of its operation.

Furthermore, the Minister for Health is also responsible for radiation protection. He or she determines the general regulations, based on proposals from ASN when applicable, concerning radiation protection. The regulations covering the radiation protection of workers are the responsibility of the Minister in charge of Labour (Minister for Labour, Labour Relations, the Family and Solidarity).

Finally, the ministers responsible for nuclear safety and radiation protection jointly approve the ASN internal regulations. They also each approve ASN regulatory decisions of a technical nature within their respective spheres of competence.

### 2|2|2 The nuclear safety and radiation protection unit

Under the authority of the Ministers responsible for nuclear safety and radiation protection and within the General Directorate for Risk Prevention at the Ministry for Ecology, Energy, Sustainable Development and Spatial Planning, the Nuclear Safety and Radiation Protection Mission (MSNR), jointly with ASN, proposes Government policy on nuclear safety and radiation protection, except for defence-related activities and installations and the radiation protection of workers against ionising radiations.

### 2|2|3 The *préfets*

The *préfets*<sup>1</sup> are the guarantors of public order in the *département* under their responsibility. They play a major

role in particular in the event of a crisis and are responsible for preventive measures concerning the population.

For the procedures described in chapter 3, and after obtaining the opinions of his departments and that of one or more inquiry commissioners, following a public inquiry, the *préfet* also submits his standpoint to the authority in charge of reviewing the licensing request. At the request of ASN, he refers to the departmental council for the environment and for health and technological risks, which submits its opinion concerning water intake, discharges and other detrimental effects from basic nuclear installations, as well as the addition, within the perimeter of a basic nuclear installation, of equipment requiring licensing under the regulations concerning installations classified on environmental protection grounds or water protection regulations.

ASN regional representatives, who are also regional directors of industry, research and the environment, under the authority of the region *préfets*, are independent of the latter with regard to nuclear safety and radiation protection.

### 2|2|4 Consultative bodies

#### *The BNI Consultative Committee (CCINB)*

The BNI Consultative Committee (CCINB), set up by decree 2007-1557 of 2 November 2007 concerning basic nuclear installations and the regulation of the nuclear safety aspects of radioactive material transport, must be consulted by the Ministers responsible for nuclear safety whenever an application is made for the creation, modification or final shutdown of a BNI and with regard to the general regulations applicable to each of these installations.

Table 1: CCINB meetings in 2008

<b>22 February</b>	<ul style="list-style-type: none"> <li>• Draft decree authorising the ISOTRON France SAS company to create a basic nuclear installation called Gammatec on the Marcoule site in Chusclan (Gard).</li> <li>• Draft decree authorising EDF to complete the final shutdown and proceed with the complete decommissioning of BNI 45, called Unit 1 in the Bugey nuclear power plant in the <i>commune</i><sup>2</sup> of Saint-Vulbas (Ain <i>département</i>).</li> </ul>
<b>4 June</b>	<ul style="list-style-type: none"> <li>• Draft decree authorising CNRS to carry out final shutdown and decommissioning of BNI 106, called the Electromagnetic Radiation Laboratory (LURE), located in the <i>communes</i> of Orsay and Bures-sur-Yvette (Essonne <i>département</i>).</li> <li>• Draft ASN decision concerning the procedures for implementing Articles 18 and 27 of decree 2007-1557 of 2 November 2007 concerning BNIs and regulation of transport of radioactive materials with respect to nuclear safety.</li> </ul>
<b>6 October</b>	<ul style="list-style-type: none"> <li>• Draft decree authorising the Commissariat à l'énergie atomique to carry out final shutdown and decommissioning of BNI 32, known as the Plutonium Technology Unit and located in the <i>commune</i> of Saint-Paul-Hez-Durance (Bouches-du-Rhône <i>département</i>).</li> <li>• Draft decree authorising the Commissariat à l'énergie atomique to carry out final shutdown and decommissioning of BNI 54, known as the Chemical purification laboratory and located in the <i>commune</i> of Saint-Paul-Hez-Durance (Bouches-du-Rhône <i>département</i>).</li> <li>• Draft internal regulations for the CCINB.</li> </ul>

1. In a *département*, representative of the State appointed by the President.

2. Smallest administrative subdivision administered by a mayor and a municipal council.

## The other stakeholders

National Authority for Health (HAS)  
[www.has.fr](http://www.has.fr)

Health Monitoring Institute (InVS)  
[www.invs.sante.fr](http://www.invs.sante.fr)

French Health Product Safety Agency (AFSSAPS)  
[www.afssaps.sante.fr](http://www.afssaps.sante.fr)

National Cancer Institute (INCa)  
[www.inca.fr](http://www.inca.fr)

French Agency for Food Safety (AFSSA)  
[www.afssa.fr](http://www.afssa.fr)

French Agency for Environmental and Occupational Health Safety (AFSSET)  
[www.afsset.fr](http://www.afsset.fr)

The members of the CCINB were appointed for five years by order of 3 April 2008 from the ministers responsible for nuclear safety. It is chaired by Mrs Marie-Eve Aubin, Chair of the honorary section of the *Conseil d'État*<sup>3</sup>.

The secretariat for the CCINB is provided by the MSNR, jointly with ASN.

In 2008, the Committee held 3 sessions, during which 7 draft texts were examined (table 1).

### *The High Council for Public Health*

The French High Public Health Council (CSHPF), a scientific and technical consultative body, under the authority of the Minister for Health, was replaced in the first quarter of 2007, by the High Council for Public Health (HCSP), created by Act 2004-806 of 9 August 2004 concerning public health policy. The ASN Chairman is a member of the board of experts (10 qualified persons and ex officio members including the ASN Chairman) which governs this new assembly, consisting of four specialised commissions:

- the “health safety” specialised commission (30 qualified persons);
- the “chronic diseases and incapacity” specialised commission (20 qualified persons);
- the “prevention and determining factors in health” specialised commission (30 qualified persons);
- the “assessment, strategy and outlook” specialised commission (15 qualified persons).

As applicable, some of the opinions and recommendations issued by the new advisory committees for radiation protection could be presented to the HCSP.

### *High Committee for Transparency and Information on Nuclear Security*

The TSN Act created a High Committee for Transparency and Information on Nuclear Security (HCTISN), an information, discussion and debating body dealing with the risks inherent in nuclear activities and the impact of these activities on human health, the environment and nuclear safety.

The High Committee can issue an opinion on any question in these fields, as well as on controls and the relevant information. It can also deal with any issue concerning the accessibility of nuclear safety information and propose any measures such as to guarantee or improve nuclear transparency.

The High Committee can be called on by the Ministers in charge of nuclear safety, by the chairmen of the competent commissions of the National Assembly and the Senate, by the Chairman of the Parliamentary Office for the Evaluation of Scientific and Technological Choices, by the chairmen of the local information committees or by the licensees of BNIs, on all questions concerning information about nuclear safety and its regulation.

It replaced the French High Council for Nuclear Safety and Information (CSSIN) which was set up in 1973. Its

3. France's highest administrative court.

role was similar but less extensive and it was endowed with more modest means. The HCTISN's activities in 2008 are described in chapter 6.

### 2 | 3 The Nuclear Safety Authority (ASN)

The TSN Act created an independent administrative authority, ASN, responsible for regulating nuclear safety and radiation protection. ASN prepares draft regulatory texts on behalf of the Government and clarifies the regulations through technical decisions. It issues certain individual authorisations and proposes others to the Government. The nuclear safety and radiation protection inspectors at ASN carry out regulation and monitoring of nuclear activities. Finally, ASN contributes to informing the citizens.

From a technical viewpoint, ASN relies on the expertise provided by the Institute for Radiation Protection and Nuclear Safety (IRSN) and Advisory Committees of experts.

### 2 | 3 | 1 Role and duties

#### Regulations

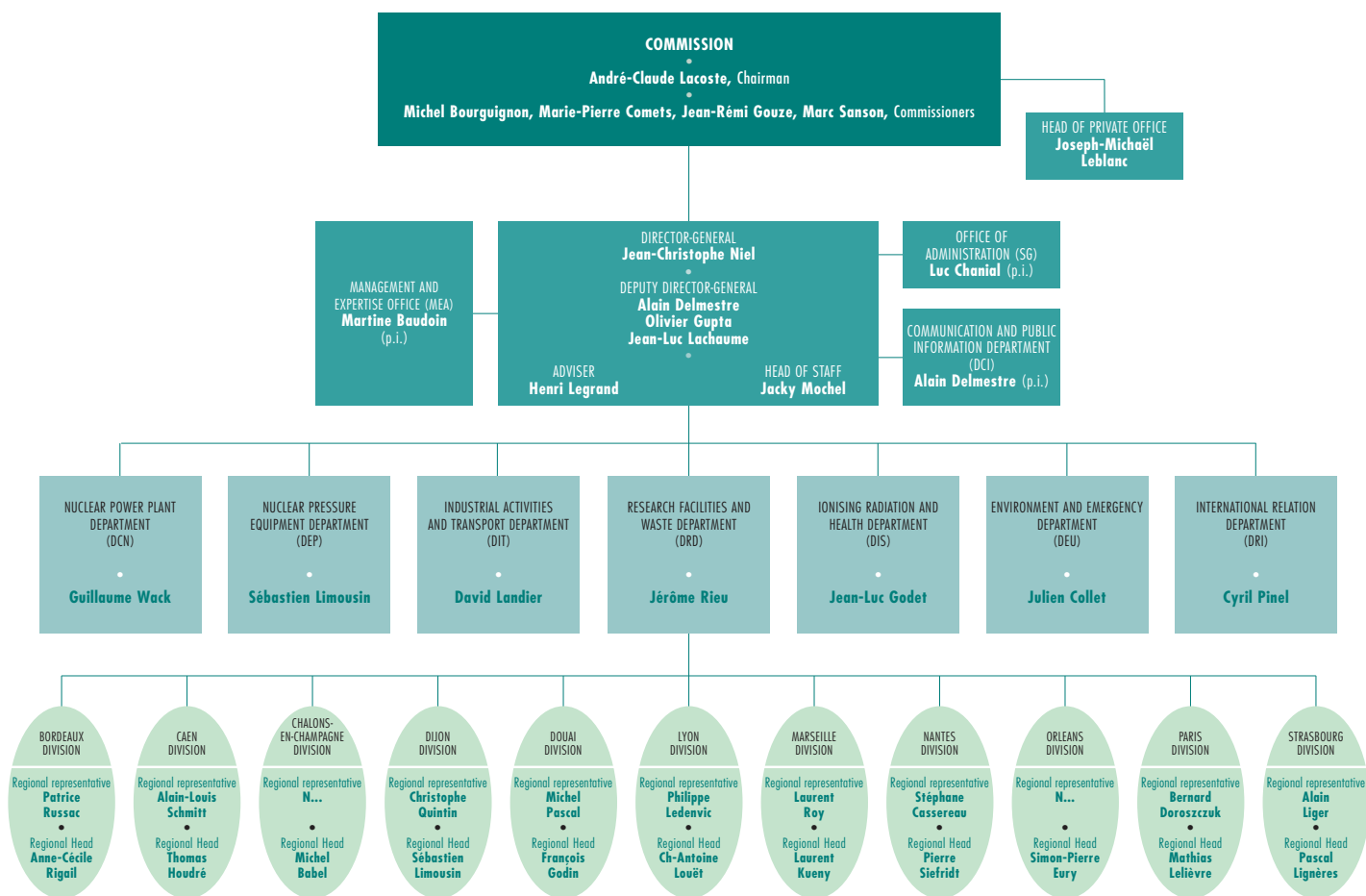
ASN is consulted on draft decrees and ministerial orders of a regulatory nature and dealing with nuclear safety.

It can take regulatory decisions of a technical nature to complete the implementing procedures for decrees and orders adopted in the nuclear safety or radiation protection field, except for those relating to occupational medicine. Decisions relative to nuclear safety are subject to the approval of the ministers tasked with nuclear safety and decisions relative to radiation protection are subject to the approval of the ministers tasked with radiation protection.

Approval orders and approved decisions are published in the Official Gazette (*Journal officiel*).

#### Authorisation

ASN reviews BNI authorisation or decommissioning decree applications and makes proposals to the Government



ASN organisation chart as at 31 December 2008



concerning the decrees to be issued in these fields. It defines the requirements applicable to these installations with regard to the prevention of risks, pollution and detrimental effects. It authorises commissioning of these installations and pronounces delicensing following decommissioning.

Some of these ASN decisions require approval by the ministers responsible for nuclear safety.

ASN also issues the licenses for small-scale nuclear facilities, provided for by the Public Health Code.

### *Controls*

ASN controls compliance with the nuclear safety and radiation protection general rules and special requirements applicable to BNIs, the construction and use of pressure vessels specifically designed for these installations, transports of radioactive materials and the activities mentioned in Article L. 1333-1 of the Public Health Code and the persons mentioned in Article L. 1333-10 of the same code.

ASN organises a permanent radiation protection watch throughout the national territory.

From among its own staff, it appoints nuclear safety inspectors, radiation protection inspectors and officers in charge of verifying compliance with pressure vessel requirements. It issues the required approvals to the

organisations participating in the verifications and nuclear safety or radiation protection watch.

### *Information*

ASN participates in informing the public in its areas of competence.

### *Support in emergency situations*

ASN is associated with the management of radiological emergencies resulting from events liable to compromise human health and the environment by exposure to ionising radiations and occurring in France or liable to affect the French territory. It provides the competent authorities with its technical assistance in drawing up measures within the emergency response plans, which take account of the risks arising from nuclear activities.

When such an emergency situation occurs, it assists the Government for all matters within its competence. It sends the competent authorities its recommendations on the measures to be taken at the medical and health levels or regarding civil security. It informs the public of the safety state of the installation that caused the emergency situation, when the latter is subject to its surveillance, and of the possible releases into the environment and their risks for personal health and the environment.

### *Investigation*

In the event of an incident or accident involving a nuclear activity, ASN may conduct a technical inquiry along



The members of the ASN Executive Committee (from left to right): J. Mochel, J.-L. Lachaume, O. Gupta, J.-C. Niel, H. Legrand, A. Delmestre



The management committee (from left to right): G. Wack, D. Landier, A. Delmestre, J. Collet, C. Pinel, M. Baudoin, J.L. Godet, J. Rieu, L. Chanial, S. Limousin

similar lines to those applicable to “accident and investigation” boards called on to deal with transport accidents.

## 2 | 3 | 2 Organisation

ASN is run by a Commission and consists of central services, regional representatives and regional divisions, placed under the authority of the Director General, himself assisted by three deputies, an adviser and a Head of Staff.

### *ASN Commission*

The Commission comprises five Commissioners holding the post on a full-time basis. These appointments are permanent and have a non-renewable mandate of 6 years.

The Commission defines ASN strategy and is more particularly involved in setting up regulatory policies and external relations both nationally and internationally. It thus adopted a multi-year strategic plan (PSP) for 2007-2009 along with general policy memoranda.

Pursuant to the TSN Act, the Commission submits ASN’s opinions to the Government and takes the main ASN decisions. Both opinions and decisions are published on the ASN website ([www.asn.fr](http://www.asn.fr)).

The Commission adopts the ASN internal regulations which lay down its organisation and working rules, as well as its ethical guidelines. The internal regulations lay down the conditions and limits concerning the delegation of powers to the Chairman by the Commissioners, and those concerning delegation by the Chairman of his power of signature to the officers in the various ASN departments.

In 2008, the ASN Commission met 53 times. It issued 24 opinions and took 39 decisions. They are listed in appendix B. The complete text, along with that of the internal regulations, can be consulted on the website ([www.asn.fr](http://www.asn.fr)).

### *ASN central services*

The ASN central services consist of an Office of Administration, a Management and Expertise Office and a number of departments. The eight departments are organised according to various themes:

- three functional departments: the Communication and Public Information Department (DCI), the Environment and Emergency Department (DEU) and the International Relations Department (DRI);
- five operational departments: the Nuclear Power Plants Department (DCN), the Industrial Activities and Transport Department (DIT), the Research Facilities and Waste Department (DRD), the Nuclear Pressure

## ASN regional representatives and Division heads



From left to right: P. Siefert, L. Kueny, S. Limousin, P. Lignères, T. Houdré, M. Lelièvre, M. Babel, A.-C. Rigail, A.-L. Schmitt, C. Quintin.



From left to right: S.-P. Eury, T. Houdré, M. Lelièvre, C.-A. Louët, F. Godin, B. Doroszczuk. Ne figurent pas sur les photos : P. Russac, M. Pascal, P. Ledenvic, L. Roy, S. Cassereau, A. Liger

Equipment Department (DEP) and the Ionising Radiation and Health Department (DIS).

The role of the departments is the national management of the activities for which they are responsible. They take part in drafting the general regulations and coordinate the actions of the ASN divisions.

### *The regional representatives and ASN divisions*

The ASN regional divisions operate under the authority of the regional representatives, appointed by the ASN Chairman. The Director of the local DRIRE for the area in which the division concerned is located acts as the regional representative. He is seconded to the ASN for the performance of this duty. This secondment process was made possible by a decree of 21 September 2007 and a secondment agreement with the Ministry for the Economy, Finance and Employment, signed on 28 November 2007. Delegation of the power of signature by the Director-General gives them the authority to take decisions at a local level.

The divisions carry out most of the direct inspections on the BNIs, on radioactive material transport and on small-scale nuclear activities, investigate most of the authorisation applications filed by the nuclear activity licensees within their regions.

In emergency situations, the divisions assist the préfet of the *département*<sup>3</sup>, who is in charge of protecting the population, and supervise the operations carried out to safeguard the installation on the site, if it is accessible or does not entail a hazard. To ensure preparedness for these situations, they take part in drawing up the emergency plans drafted by the *préfets* and in periodic emergency exercises.

Finally, the regional representatives represent ASN in the regions. With the support of the divisions, they contribute

to ASN's public information duty. They also take part in meetings of the local information committees and maintain regular contacts with local media, elected officials, environmental protection associations, licensees and the local administrative partners (*préfets*, ARH, DRASS, and so on).

## 2 | 3 | 3 Operation

### *Human resources*

As at 31 December 2008, the ASN total workforce stood at 436 people.

This workforce can be broken down as follows:

- 342 tenured or contract staff;
- 94 staff seconded from public establishments (Assistance publique - Hôpitaux de Paris, CEA, IRSN).

On 31 December 2008, the average age of the ASN staff was 41 years and 4 months, and 62% (270) are younger than 45. This well-balanced age pyramid enables ASN to carry out active regulation of nuclear safety and radiation protection, avoiding the pitfalls of habits and routine, while stimulating use of the tutor system with the younger members and the transmission of know-how.

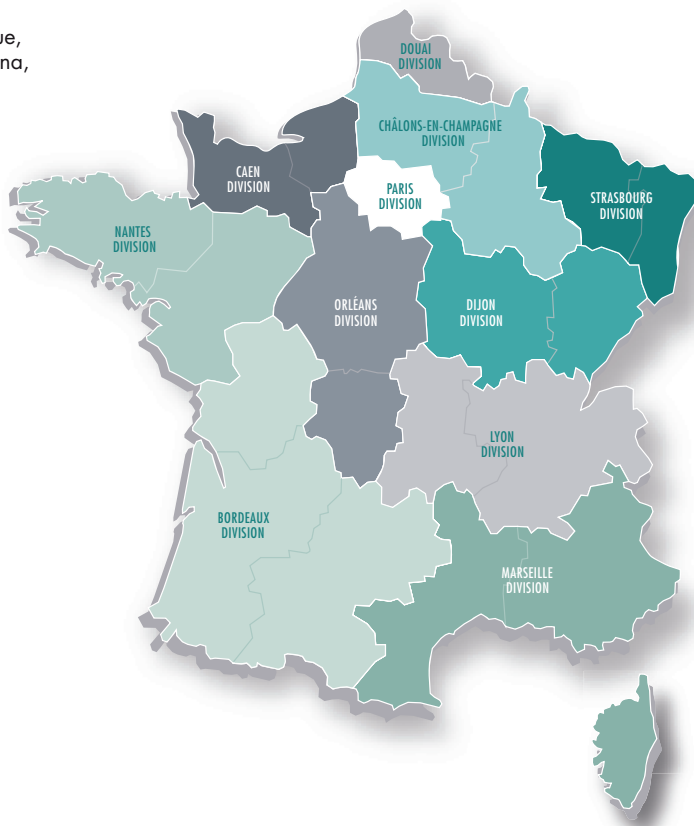
### *Financial resources*

Since 2000, all the personnel and operating resources involved in the performance of the duties entrusted to ASN have been covered by the State's general budget.

The ASN budget in 2008 amounted to 43 million euros. ASN also receives services from the Ministry for the Economy, Industry and Employment (MIEIE) and from the DRIRE network under the terms of special agreements. The ASN regional divisions are located in the premises of the DRIREs. For 2008, ASN's total budget was about 15 million euros.

The Paris division operates in Martinique, Guadeloupe, La Réunion, French Guyana, Saint-Pierre et Miquelon and Mayotte.

The Caen and Orléans divisions operate in the Brittany and Ile-de-France regions respectively for BNI supervisions only.



### Geographical competence of the regional divisions

In 2009, ASN’s budget is included in action 3 “Regulation of nuclear safety and radiation protection” of programme 181 “Prevention of risks and mitigation of pollution” of the “Ecology and sustainable development” mission.

As stipulated in the TSN Act, ASN also relies on IRSN for technical expertise, backed up whenever necessary by research. In its Article 16, the Act states that ASN is consulted by the Government on the corresponding share of the State subsidy to IRSN. This share of the IRSN subsidy, which amounted to 69 million euros in 2008, is included in programme 189 “Research in the field of risks and pollution” of the “Research and higher education” mission.

Table 2: ASN workforce on 31 December 2008

Central services	193
Regional divisions	239
<b>TOTAL</b>	<b>432</b>

#### Basic Nuclear Installation tax

Article 16 of the TSN Act also states that the ASN Chairman is responsible, on behalf of the State, for issuing payment authorisation for and settling the tax on BNIs created by Article 43 of the 2000 Finance Act (Act 99-1172 of 30 December 1999). The revenue from this tax amounted to 365 million in 2008. It is paid into the State’s general budget.

The revenue from the tax amounted to 213 million euros in 2003, 346 million euros in 2004, 347 million euros in 2005, 358.7 million euros in 2006 and 365 million euros in 2007.

#### Additional taxes on radioactive waste

Programme Act 2006-739 of 28 June 2006 concerning the sustainable management of radioactive materials and waste created three additional taxes for nuclear reactors and spent nuclear fuel reprocessing plants supplementing the BNI tax, known as the “research”, “support” and “technological dissemination” taxes respectively. They are allocated to financing economic growth, on the one hand, and to financing ANDRA research into underground disposal and interim storage, on the other.

Table 3: Summary of ASN budget for 2008

Ministry responsible	Programme / Action (2009)	Destination	2008 Budget Act	2009 Budget Act
MEEDDAT	181 : risk prevention Action 9 "Regulation of nuclear safety and radiation protection"	Personnel (including secondment), operating and intervention costs	43 M€	48.4 M€
MBCPPF	218 : implementation and oversight of economic and financial policy Action 5: assistance and support operations	Operation of central sites (Paris and Fontenay-aux-Roses)	6.2 M€ <sup>(1)</sup>	6.2 M€ <sup>(1)</sup>
MEEDDAT	217: implementation and oversight of ecology, energy, sustainable development and spatial planning policies Actions 16, 3 and 4 (personnel, real estate and operations "support" costs)	Cost of 11 ASN regional divisions (personnel and operations "support" costs)	9.5 M€ <sup>(2)</sup>	9.5 M€ <sup>(2)</sup>
MEEDDAT	189: research into the field of risks and pollution Sub-action 3-3: ASN technical support	ASN technical support activities	69.4 M€	78.1 M€ <sup>(3)</sup>

(1) Source: 2006 annual performance project

(2) Source: 2007 annual performance report

(3) Source: 2009 budget bill

Table 4: breakdown of contributions

Licensee	Amount for 2008 in million euros	
	BNI tax	Additional taxes
EDF	326	107.5
AREVA	19	7
CEA	7.5	22
ANDRA	6.6	
OTHERS	6	1.5
<b>TOTAL</b>	<b>365.1</b>	<b>138</b>

For 2008, the revenue from these new taxes amounted to 138 million euros.

The breakdown of contributions is shown in table 4.

### Skills management

Competence is one of the four key values of ASN. The tutor system, along with initial and continuous training, whether general, linked to nuclear techniques or communication, are key elements in professionalism.

Management of ASN personnel skills is in particular based on a formalised curriculum of technical training. For each

member of staff, this curriculum is a means of implementing a detailed and regularly updated training reference system. For example, an inspector must follow a series of predetermined training modules before being qualified to carry out inspections. This involves technical training, but also training in legal aspects and communication. In 2008, 2893 days of technical training were given to ASN staff during 72 different training courses. The financial cost of the courses, provided by organisations other than ASN, amounted to 350 k€

Since 1997, ASN has followed a programme of qualification of its inspectors, based on recognition of their

### Follow up to the IRRS review hosted by ASN in 2006

The International Atomic Energy Agency (IAEA) drafts and publishes international safety standards for nuclear installations, the transport of radioactive materials, the management of radioactive waste and protection against ionising radiations. IAEA also handles their distribution and application. In so doing, it offers nuclear safety authorities a service to assess application of its standards, taking the form of IRRS (Integrated Regulatory Review Service) reviews. These reviews aim to audit the nuclear safety authorities with regard to nuclear safety, radiation protection and the safe transport of radioactive materials with respect to the standards it publishes.

At its request and in order to ensure constant progress, ASN hosted an IRRS review team in November 2006. This review was the first of the “full scope” type, in other words, taking in all the nuclear safety and radiation protection fields covered by the IRRS reviews. In asking for this first IRRS full-scope review, ASN had three objectives in mind.

1. To submit to an external peer review to ensure that its organisation and practices are in conformity with international standards and improve the pertinence of its actions and effectiveness.
2. To present a certain number of its practices to its peers, in particular those practices that it considers go further than IAEA’s recommendations.
3. To encourage the larger safety authorities also to ask for an IRRS review.

In 2007 and 2008, several IRRS reviews were carried out, including one supervised by the ASN Chairman. Others are scheduled for 2009 and 2010. This approach should lead to a valuable comparison of the safety authorities and thus upwards harmonisation of organisations and regulatory practices.

The IRRS review was conducted by a team of experts from nuclear safety authorities of other countries, coordinated by IAEA. It assessed ASN’s organisation and practices both nationally and regionally, in an open and frank context. Auditors accompanied ASN inspectors in their field visits, whether inspections, technical meetings or emergency management exercises.

The IRRS review was the subject of a report published in full on the website [www.asn.fr](http://www.asn.fr). It identified 40 good practices, 49 suggestions (deviations from the IAEA guidelines) and 35 recommendations (deviations from IAEA standards).

In a large number of areas such as inspection, preparedness for emergencies, information of the public, or its international role, ASN ranks among the best international practices. ASN will aim to perpetuate all the good practices identified by this review.

On the basis of the areas for improvement identified, ASN is implementing an action plan in order to guarantee full conformity of its practices and its organisation with the best international standards. Most of this plan was implemented in 2007 and 2008. Some illustrations:

- ASN’s role in supervising management of the fund dedicated to the decommissioning of nuclear installations and to radioactive waste was clarified and reinforced;
- the practical measures for implementing the new means of enforcement and sanction provided for in the TSN Act (decisions to shut down installations, formal notices, penalties, etc.) are in place;
- a new BNI regulatory system has been implemented;
- regulatory modifications have been made to improve the radiation protection of workers and patients.

A follow-up review will be organised by IAEA in March 2009, to assess the progress made in implementing this action plan. This review will also be an opportunity for ASN and the foreign experts to discuss issues regarding safety authority independence and the regulation of radiotherapy.

The report from this follow-up review will be made public in full on the ASN website ([www.asn.fr](http://www.asn.fr)).

technical competence. An accreditation committee was set up in 1997 to advise the Director-General on the entire qualification system. It in particular reviews the training curriculum and the qualification reference systems applicable to the various ASN departments, and carries out hearings of inspectors as part of the confirmation process.

Chaired by Mr. Yves Lecointe until November 2008 and then by Mr Philippe Saint Raymond, the Accreditation Committee is made up half of senior inspectors belonging to ASN and half of persons with competence in the field of nuclear safety regulation, assessment and teaching, and regulation of classified installations. Its scope of competence will be extended to radiation protection.

The Accreditation Committee met once in 2008 and proposed the confirmation of six BNI inspectors.

On 31 December 2008, 39 ASN nuclear safety inspectors were senior inspectors, or about 24% of all the nuclear safety inspectors.

#### *Internal communication and information systems*

The ASN Intranet, Oasis, is the main source of ASN internal information, carrying all the documents and information needed by the staff on a day to day basis, plus news and the daily press review. Furthermore, the action taken in recent years for internal communication also continued in 2008 through:

- presentation of each *Contrôle* magazine topic to the staff in the ASN departments and exchanges with the Executive Committee, prior to presentation of the magazine to the media;
- organisation of introductory sessions for new ASN recruits in January, May and October;
- regular visits by the management committee to each of the entities making up ASN (Office of Administration, departments, divisions).

Oasis is also the interface for the ASN information system: about ten professional sector applications accessible to all ASN staff organise, harmonise and capitalise on information concerning the main processes within ASN.

#### *Quality management system*

To guarantee and improve the quality and effectiveness of its actions, ASN defined and implemented a quality management system inspired by the ISO and IAEA international standards and based on:

- action plans setting ASN targets and annual priorities, adjusted during the course of the year by exchanges between entities (discussions, periodic meetings, internal memos, etc.);
- organisation notes and procedures, gradually structured and compiled to form an organisation manual, defining

the ASN internal rules for the correct performance of each of its duties and roles;

- internal audits and inspections by the General Mining Council and context, activity and performance indicators, for monitoring and improving the quality and effectiveness of the actions taken by ASN;
- listening to the needs of all parties involved (the public, elected officials, associations, media, trade unions, industry) within the context of procedures stipulated by the regulations (public enquiry) or less formal frameworks (opinion polls, hearings, internal consultations, etc.).

## 2 | 3 | 4 Technical support organisations

ASN benefits from the expertise of technical support organisations when preparing its decisions. The Institute for Radiation Protection and Nuclear Safety (IRSN, [www.irsn.fr](http://www.irsn.fr)) is the main one. For a number of years now, ASN has also been following a policy of technical support diversification, both nationally and internationally.

#### *Institute for Radiation Protection and Nuclear Safety*

IRSN, created by Act 2001-398 of 9 May 2001 and by decree 2002-254 of 22 February 2002, was set up as an independent public industrial and commercial establishment, as part of the national reorganisation of nuclear safety and radiation protection regulation, in order to bring together public expertise and research resources in these fields. IRSN reports to the Ministers for the Environment, Health, Research, Industry and Defence.

The Institute conducts and implements research programmes in order to build its public expertise on the very latest national and international scientific knowledge in the fields of nuclear and radiological risks. It is tasked with providing technical support for the public authorities with competence for safety, radiation protection and security, in both the civil and defence sectors. Finally, the decree that created it gives it certain public service duties, in particular monitoring of the environment and of populations exposed to ionising radiations. To perform these duties, IRSN manages national databases (national nuclear material accounting, national inventory of radioactive sources, file of worker exposure to ionising radiations, etc.), and contributes to information of the public concerning the risks linked to ionising radiations.

#### *IRSN budget*

In accordance with the constitutional bylaw on budget acts (LOLF), the State's general budget subsidy granted to IRSN is contained in action 3, "Evaluation and prevention of nuclear risks" of programme 189 "Research in the field of risks and pollution" of the "Research and higher education" government mission.

The State subsidy to IRSN in 2008 voted under the Budget Act amounted to 235 million euros. The share of this budget corresponding to ASN support work amounted to €69 million.

Pursuant to Article 16 of the TSN Act, ASN was consulted by the Government regarding the State's subsidy to IRSN in respect of the Institute's technical support for ASN in 2009. The opinion was issued on 19 November 2008. It considers that the planned increase in the State subsidy to IRSN for the support it provides to ASN is in line with the identified requirements, but underlines the need for ASN to be more closely involved by IRSN in determining its priorities, in distributing this subsidy and in the operational and financial oversight of its actions. The opinion also stresses the fact that IRSN's ability to perform its operational duties must not in any way be compromised by the cleanup and decommissioning operations on installations that have been shut down, particularly Phébus.

Pursuant to the same article, an agreement was signed by ASN and IRSN to define the working methods and principles governing the technical support provided to ASN by the Institute. This agreement is clarified on a yearly basis by a protocol identifying the actions to be performed by IRSN to support ASN.

#### *The ASN's other technical support organisations*

To diversify its sources of expertise and take advantage of other specific skills, ASN also has its own credit allocation, amounting to 640,000 euros in 2008.

A significant part of this budget is devoted to producing an inventory of exposure of the population to radon in the home.

ASN continued its cooperation with:

- the Robin des bois association: study of phosphogypsum deposits and ashes from coal-fired power plants;
- the Nuclear Protection Evaluation Centre (CEPN): Core health project;
- the Bureau Veritas: definition of check-points and criteria for radiation protection appraisal of X-ray generators used in the industrial, veterinary and research sectors;
- the pluralistic experts group for the Limousin mines (GEP Limousin) which supports the public authorities with regard to issues concerning rehabilitation of uranium mining sites.

## 2 | 3 | 5 Advisory Committees of experts

When preparing its decisions, ASN relies on opinions and recommendations from Advisory Committees of experts and the Standing Nuclear Section of the Central Committee for Pressure Vessels.

In accordance with the internal regulations, four Advisory Committees of experts (GPE) were created to work with the ASN Director-General by decision of the ASN Chairman on 9 March 2007. They analyse the safety-related technical problems raised by the construction, commissioning, operation and shutdown of nuclear facilities and their auxiliaries and the transport of radioactive materials.

The GPEs are consulted by the ASN Director-General concerning the safety and radiation protection of installations and activities within their particular field of competence. They in particular review the preliminary, provisional and final safety cases for each of the BNIs. They are in possession of reports presenting the results of the analyses conducted by IRSN and issue an opinion plus recommendations.

Each GPE may call on any person recognised for his or her particular competence. It may hold a hearing of licensee representatives. Participation by foreign experts can help diversify the approach to problems and take greater advantage of experience acquired internationally.

With the goal of improving nuclear safety and radiation protection transparency, ASN intends to publish the documents relating to the meetings of these GPEs (ASN referral of a particular subject to the GPE, GPE opinion, ASN stance). This publication applies to documents relating to GPE meetings subsequent to 1 October 2008 and publication will actually take place once ASN has adopted a stance on the subject.

The Advisory Committees of experts comprise experts nominated for their individual competence. They come from university and associative backgrounds, as well as from the licensees concerned by the subjects being dealt with.

#### *The Advisory Committee for reactors*

The Advisory Committee for reactors is chaired by Mr Pierre Govaerts. It consists of experts nominated for their competence in the field of nuclear reactors.

In 2008, the Advisory Committee for reactors (GPR) held 15 meetings.

#### *Advisory Committee for laboratories and plants*

The Advisory Committee for laboratories and plants is chaired by Mr Pierre Chevalier. It comprises experts nominated for their competence in the field of laboratories and plants in which radioactive materials are used. In 2008, the Advisory Committee for laboratories and plants held 5 meetings.



Table 5: Meetings of the “Advisory Committee for Nuclear Reactors” in 2008

Topic	Date
PWR - Review of operational feedback from experience with French and foreign PWR reactors during the 2003-2005 period	17 January
Conclusions of the four-party working group meeting on sump clogging	24 January
In-house meeting	20 March
PWR – Review of Électricité de France maintenance policy	27 March
PWR – Review of PWR safety management in a competitive context	24 April
PWR – Review of GALICE fuel management	12 June
Review of the preliminary safety case for the Jules Horowitz reactor (RJH)	24 January 19 June 25 June 26 June
Preparation of the 2nd four-party working group meeting / “New reactors design”	18 September
CABRI – Restart of the modified installation	9 September – site visit 2 October 22 October 23 October
Meeting of the four-party working group from 8 to 10 October, with a visit to the EPR construction site in Flamanville on the 8th	8 -10 October
Results of the periodic safety review for the 3rd ten yearly outages of the 900 MWe reactors	20 November
Review of the risks associated with severe accidents in PWRs in operation (7th meeting)	27 November

### *The Advisory Committee for waste*

The Advisory Committee for waste is chaired by Mr Pierre Bérest. It comprises experts nominated for their competence in the nuclear, geological and mining fields.

In 2008, the Advisory Committee for waste held one meeting.

### *The Advisory Committee for transport*

The Advisory Committee for Transport is chaired by Mr Jacques Aguilar. It comprises experts nominated for their competence in the field of transport, in particular

representatives from the French committee for certification of companies in training and monitoring of personnel working with ionising radiations.

In 2008, the Advisory Committee for transport held one meeting.

### *The Standing Nuclear Section of the CCAP*

The Central Committee for Pressure Vessels (CCAP), created by Article 26 of decree 99-1046 of 13 December 1999 concerning pressure vessels, is a consultative organisation reporting to the Minister for Industry.

Table 6: Meetings of the “Advisory Committee for laboratories and plants” in 2008

Topic	Date
In-house meeting	12 March
Visit to Urenco in Manchester	29 April
BNI 80-La Hague (COGEMA) – Review of decommissioning conditions for BNI 80 in the UP2-400 plant	14 May – site visit 21 May
Pierrelatte – Review of the provisional safety analysis report for the centrifugation uranium enrichment plant (Georges Besse II)	28 May – site visit 11 June
ICEDA (EDF) – Review of the revised preliminary safety analysis report	19 November

Table 7: Meeting of the “Advisory Committee for waste” in 2008

Topic	Date
In-house meeting	18 November

Table 8: Meeting of the “Advisory Committee for transport” in 2008

Topic	Date
Conformity of the TN112 package model loaded with spent fuel, with the requirements applicable to type B packages loaded with fissile material	4 June

Table 9: Meetings of the Standing Nuclear Section of the CCAP in 2008

Topic	Date
Application of Article 13 of the order of 10/11/1999 to the steam generators partition plate Request for exemption from the order of 10/11/99 concerning the operational surveillance of the main primary system and the main secondary systems of a PWR Chemical cleaning of the 1300 MWe reactor steam generators	29 April
Steam vessels other than those on-board ships	Consultation by letter
Implementation guide for the order of 12/12/05 concerning nuclear pressure vessels	11 September
Implementation guide for the order of 12/12/05 concerning nuclear pressure vessels Nuclear pressure vessel conformity evaluation guide	4 December

It comprises members of the various administrations concerned, persons chosen for their particular competence and representatives of the manufacturers and users of pressure vessels and of the technical and professional organisations concerned. It is chaired by Mr. Rémi Guillet.

It may be called on by the Director for Regional Action, Quality and Industrial Safety (DARQSI) and by ASN for all questions concerning application of laws and regulations to pressure vessels. Accident reports are also forwarded to it.



A delegation from the Advisory Committee for reactors in Flamanville with its German, American and Japanese counterparts – October 2008

For particular regulation of the more important pressure vessels in nuclear installations, it has a Standing Nuclear Section (SPN), the role of which is to issue recommendations on application of pressure vessel regulations to the main nuclear pressure vessels. This Standing Nuclear Section works as an Advisory Committee of experts in dealing with nuclear pressure vessel issues.

In 2008, it held three meetings and sent out a letter to consult its members.

### *The Advisory Committees for radiation protection*

The shutdown and replacement of the French High Public Health Council in April 2007 and consequently the closure of the radiation protection section and commission for the use of ionising radiation sources associated with it, led ASN to create two new Advisory Committees of experts to deal with radiation protection issues.

Thus, the Advisory Committee for medical exposure (GPMED), chaired by Mr Yves COQUIN, covers radiation protection of health professionals, the public and patients, for medical applications of ionising radiations, including forensic medicine. The Advisory Committee for radiation protection (GPRAD), chaired by Mr Jean-Paul SAMAIN, covers the radiation protection of workers (other than health professionals) and the radiation protection of the



The Advisory Committee for reactors welcomes its German, American and Japanese counterparts to ASN (Paris) – October 2008

public, for industrial and research applications using ionising radiations, as well as for radiation from NORM.

These new Advisory Committees, set up in June 2008, held two meetings each, in October and December 2008.

The Advisory Committees on radiation protection will be issuing opinions and recommendations:

- on technical subjects concerning the conditions and procedures for the use of ionising radiations;
- on the protection of individuals exposed to ionising radiations.
- on changes to international, community and national regulations;
- on policy concerning radiological emergencies.

Table 10: Meetings of the “Advisory Committee for medical exposure” in 2008

Topic	Date
Inception meeting	23 June
Calibration of mini-beams used in stereotactic radiotherapy, BSS/IAEA project	7 October
Interventional radiology, radiological reference levels and ASN draft decisions concerning small-scale nuclear activities subject to notification	9 December

Table 11: Meetings of the “Advisory Committee for radiation protection” in 2008

Topic	Date
Inception meeting	23 June
Discussions on internal working and on the draft revision of the IAEA basic safety standards	8 October
Review of guidelines adopted for preparation of draft regulatory texts (ion detectors, activities subject to notification, extension of source lifetimes)	2 December

### 3 OUTLOOK

The regulation of nuclear safety and radiation protection concerns all State structures:

- Parliament, in particular the OPECST, for definition of the main long-term options;
- the Government, in particular the Ministers responsible for nuclear safety and radiation protection, who are given general regulatory powers and deal with individual questions concerning the creation of a BNI;
- ASN, which contributes to drafting technical regulations and to monitoring and regulation of activities;
- the consultative bodies, which provide an outside view of the important decisions concerning nuclear safety and radiation protection;
- the *préfets*, who are in charge of protecting the population.

In 2008, which was ASN's second full year as an independent administrative Authority, the various arrangements provided for by the 13 June 2006 Act on nuclear transparency and security continued to be put into place. For ASN, this year was an opportunity to look more closely at its stance on important subjects relating to regulation, procedures and information about nuclear activities.

With a view to achieving constant progress, ASN is taking action to improve the quality of its decision-making processes:

- the action plan drawn up to address the various comments made after the IRRS audit in November 2006, is being implemented. A safety audit by a team of foreign nuclear safety authority counterparts will be carried out in March 2009;

- in addition to the Advisory Committees of experts in the field of nuclear installations, ASN has set up two additional Advisory Committees to examine opinions in the radiation protection and medical fields.
- as part of its 2007-2009 strategic plan, ASN defined priority fields and topics for the year 2009, which will be particularly closely monitored. At the same time, ASN has already begun to look at a new strategic plan for the period 2010-2012.

While retaining its independence, ASN's actions involve close ties with government entities in charge of subjects linked to nuclear safety and radiation protection. The continued construction of ASN's independence involves greater links with Parliament and greater budgetary autonomy. With this in mind, this report will be presented to the Parliamentary Office for the Evaluation of Scientific and Technological Choices. Ties have also been forged with other Parliamentary organisations.

As in 2008, ASN's 2009 credits will be included under action 9 "regulation of nuclear safety and radiation protection" of programme 181 "Protection of the environment and prevention of risks" run by the Ministry for Ecology, Energy, Sustainable Development and Spatial Planning. ASN also has access to resources within three other programmes. These resources enable ASN to perform most of its duties. However, ASN considers that a simpler system could be put into place giving greater visibility and flexibility in financing the regulation of nuclear safety and radiation protection.