THE PRINCIPLES AND STAKEHOLDERS IN NUCLEAR SAFETY REGULATION, RADIATION PROTECTION AND PROTECTION OF THE ENVIRONMENT

CHAPTER 2

Nuclear safety and radiation protection comprise the measures that allow nuclear activities to be carried out under normal conditions, that prevent accidents – whether involuntary or the result of malicious intent – and that limit the effects of radiation for workers, for the general public and for the environment. Their common aim is to protect people and property against hazards, nuisances or inconveniences of whatever nature arising from nuclear activities and from exposure to natural radiation.

Nuclear safety and radiation protection obey principles and approaches that have been put in place progressively and continually enriched by a process of feedback. The basic guiding principles are advocated internationally by the International Atomic Energy Agency (IAEA). In France, they are included in the Constitution or enacted in law, as well as now figuring in a European directive.

The regulation of civil nuclear safety and radiation protection in France is the task of the ASN, an independent administrative authority, working with other bodies of State, within Parliament, the Government and the *Préfectures*[1], and relying on technical expertise provided, notably, by the French Institute for Radiation Protection and Nuclear Safety (IRSN).

Acting on behalf of the State, ASN regulates nuclear safety and radiation protection in order to protect workers, health care recipients, the public and the environment from risks arising from nuclear activities. It also contributes to informing the citizens.

1 THE PRINCIPLES OF NUCLEAR SAFETY, RADIATION PROTECTION AND PROTECTION OF THE ENVIRONMENT

1|1 Fundamental principles

Nuclear activities must be carried out in compliance with the principles that underlie the legislative texts.

The IAEA's Safety Standards (see chapter 7, point 2|2) establish ten fundamental safety principles which are applied internationally under the Convention on Nuclear Safety (CNS) (see chapter 7, point 4|1) and which establish an international framework for regulation of nuclear safety and radiation protection, at the European community level, via two directives establishing a community framework for the safety of nuclear installations and the responsible and safe management of spent fuel and radioactive waste. In France this is done via the Environment Charter, appended to the Constitution, and via laws and regulations.

1|1|1 Principle of the prime responsibility of licensees

This principle, defined in Article 9 of the CNS, stipulates that prime responsibility for the safety of nuclear activities entailing risk rests with those undertaking or carrying out such activities.

It applies directly to all nuclear activities.

UNDERSTAND

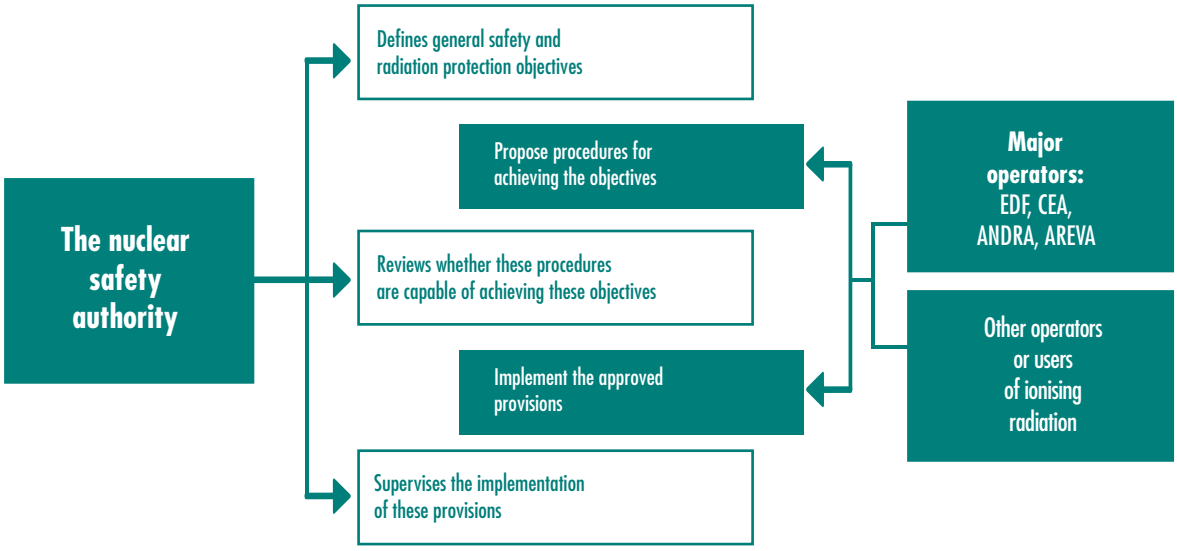
The fundamental safety principles

The IAEA establishes the following 10 principles in its publication "SF-1":

1. *The prime responsibility for safety must rest with the person or organisation responsible for facilities and activities that give rise to radiation risks.*
2. *An effective legal and governmental framework for safety, including an independent regulatory body, must be established and sustained.*
3. *Effective leadership and management for safety must be established and sustained in organisations concerned with, and facilities and activities that give rise to, radiation risks.*
4. *Facilities and activities that give rise to radiation risks must yield an overall benefit.*
5. *Protection must be optimised to provide the highest level of safety that can reasonably be achieved.*
6. *Measures for controlling radiation risks must ensure that no individual bears an unacceptable risk of harm.*
7. *People and the environment, both present and future, must be protected against radiation risks.*
8. *All practical efforts must be made to prevent and mitigate nuclear or radiation accidents.*
9. *Arrangements must be made for emergency preparedness and response for nuclear or radiation incidents.*
10. *Protective actions to reduce existing or unregulated radiation risks must be justified and optimised.*

1. Office of the *Préfet*

Responsibility of licensees and responsibility of ASN



UNDERSTAND

BNI tax, additional waste taxes, additional disposal tax and contribution to IRSN

The ASN Chairman is required by the TSN Act, now codified in books I and V of the Environment Code, to assess and order payment of the BNI tax, introduced under Article 43 of the 2000 Budget Act (Act 99-1172 of 30th December 1999). The revenue from this tax amounted to € 580.7 million in 2011. The proceeds go to the central state budget.

In addition, the "Waste" Act creates three further taxes levied on nuclear reactors and spent nuclear fuel reprocessing plants, known as the "research", "support" and "technological dissemination" taxes. They are allocated to the financing of economic growth and of ANDRA's research into underground disposal and storage. The revenue from these new taxes amounted to € 179.5 million in 2011.

Article 2 of Act 2009-1673 of 30th December 2009 also created an additional tax on ultimate disposal facilities. This tax is paid to the local communes[2] and inter-commune public cooperation establishments around the disposal facility. The revenue from this tax amounted to € 2.4 million in 2011.

Finally, article 96 of Act 2010-1658 of 29th December 2010 creates an annual contribution on behalf of the IRSN to be paid by BNI licensees. This contribution is in particular designed to finance the review of the safety cases submitted by the BNI licensees. The revenue from this contribution amounted to € 33.4 million in 2011.

Table 1: breakdown of licensee contributions

Licensee	Amount for 2011 (millions of euros)		
	BNI tax	Additional waste and disposal taxes	Contribution on behalf of IRSN
EDF	543.6	138.8	24.3
AREVA	16.3	8.9	2.5
CEA	6.6	29.5	5.1
ANDRA	6.5	*	0.2
OTHERS	7.7	2.3	1.3
TOTAL	**580.7**	**179.5***	**33.4**

* The €2.4 million revenue from the disposal tax for 2011 was collected in January 2012.

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

1|1|2 "Polluter-pays" principle

The "polluter-pays" principle, spelling out the operator's prime responsibility, ensures that the costs of measures to prevent or reduce pollution are borne by those responsible for environmental damage. This principle is defined in Article 4 of the Environment Charter in these terms: *"An individual must contribute to reparation of the environmental damage he or she has caused"*.

This principle entails the taxation of Basic Nuclear Installations (BNI) ("BNI" tax and contribution to the IRSN), the taxation of radioactive waste producers (additional waste taxes), of disposal facilities (additional "disposal" tax) and of installations classified on environmental protection grounds (ICPE) (fraction of the general tax on polluting activities – TGAP).

1|1|3 Precautionary principle

The precautionary principle, defined in Article 5 of the Environment Charter, states that: *"the absence of certainty, in the light of current scientific and technical knowledge, must not delay the adoption of effective and proportionate measures to prevent a risk of serious and irreversible damage to the environment"*.

Application of this principle results, for example, in assuming a linear no-threshold dose-effect relationship where the biological effects of exposure to low doses of ionising radiation are concerned. This point is clarified in chapter 1 of this report.

1|1|4 Public participation principle

This principle allows public participation in the making of decisions by public authorities. It is defined in Article 7 of the Environment Charter as follows: "Within the conditions and limits defined by law, all individuals are entitled to access environmental information in the possession of the public authorities and to take part in the making of public decisions affecting the environment".

In the nuclear field, this principle entails the organisation of national public debates, which are mandatory prior to the construction of a nuclear power plant for example, as well as public enquiries, especially when examining the creation or decommissioning of nuclear facilities, as well as consultations and public access to information, which are mandatory for all matters liable to lead to a significant increase in water intakes or discharges in the environment of a nuclear facility.

Chapter 6 of this report describes application of the right of access to information over the full range of ASN's activities.

1|1|5 The principle of justification

The principle of justification, given expression in Article L. 1333-1 of the Public Health Code (CSP), states that: A nuclear activity or an intervention can only be undertaken or carried out if its health, social, economic or scientific benefits so justify, given the risks inherent in the human exposure to ionising radiation that it is likely to entail".

Depending on the type of activity, justification decisions are made at various levels of authority: they are the responsibility of Parliament for questions of general interest, of the Government for the creation or decommissioning of a BNI, and of ASN where transport operations or sources of radiation are concerned.

Assessment of the expected benefit of a nuclear activity and the corresponding health drawbacks may lead to prohibition of an activity for which the benefit would not seem to outweigh the health risk. For existing activities, justification may be reassessed if the state of know-how and technology so warrants.

1|1|6 The principle of optimisation

The principle of optimisation, formulated in Article L. 1333-1 of the Public Health Code, states that: *"Human exposure to ionising radiation as a result of a nuclear activity or medical procedure must be kept as low as reasonably achievable, given current technology, economic and social factors and, where applicable, the intended medical purpose."*

This principle, referred to as the ALARA principle, leads for example: to a reduction in discharge licenses of the quantities of radionuclides present in the radioactive effluents from nuclear installations; to requiring surveillance of exposure at the workstation in order to reduce it to the strict minimum; and to ensuring that medical exposure as a result of diagnostic procedures remains close to the pre-determined reference levels.

1|1|7 The principle of limitation

The principle of limitation, expressed in Article L. 1333-1 of the Public Health Code, states that: *"Exposure of an individual to ionising radiation as a result of a nuclear activity may not increase the sum of the doses received beyond the limits set by regulations, except when the individual is exposed for medical or biomedical research purposes"*.

The exposure of the general population or of workers as a result of nuclear activities is subject to strict limits. These comprise significant safety margins to prevent the appearance of deterministic effects. They are also far below the doses at which probabilistic effects begin to be observed.

Exceeding these limits leads to an abnormal situation and one which may give rise to administrative or legal sanction.

In the case of medical exposure, no strict dose limit is set, provided that this voluntary exposure is justified by the expected health benefits to the person exposed.

1|1|8 The principle of prevention

The prevention principle, defined in article 3 of the Environment Charter, requires the implementation of rules and actions designed to anticipate any environmental damage, which must take account of the *"best techniques available at an economically acceptable cost"*.

In the nuclear field, this principle underlies the concept of defence in depth, presented below.

1|2 Some aspects of the safety approach

The safety principles and approaches presented below were gradually implemented and incorporate experience feedback from accidents. Absolute safety can never be guaranteed and despite all the precautions taken in the design, construction and operation of nuclear facilities, an accident can never be completely ruled out. The willingness to move forward and to create a continuous improvement approach is thus essential if the risks are to be reduced.

1|2|1 Safety management

Safety management means fostering a safety culture within risk management organisations.

Safety culture is defined by the International Nuclear Safety Advisory Group (INSAG), an international nuclear safety consultative group reporting to the General Director of the IAEA, as: *"that assembly of characteristics and attitudes in organisations and individuals which establishes that, as an overriding priority, nuclear plant safety issues receive the attention warranted by their significance"*.

Safety culture therefore determines the ways in which an organisation and individuals perform their duties and accept responsibility, with safety in mind. It is one of the key fundamentals in maintaining and improving safety. It commits organisations and individuals to paying particular and appropriate attention to safety. At the individual level it is given expression by a rigorous and cautious approach and a questioning attitude making it possible to both obey rules and take initiative. In operational terms, the concept underpins decisions and actions relating to activities.

1|2|2 The "Defence in Depth" concept

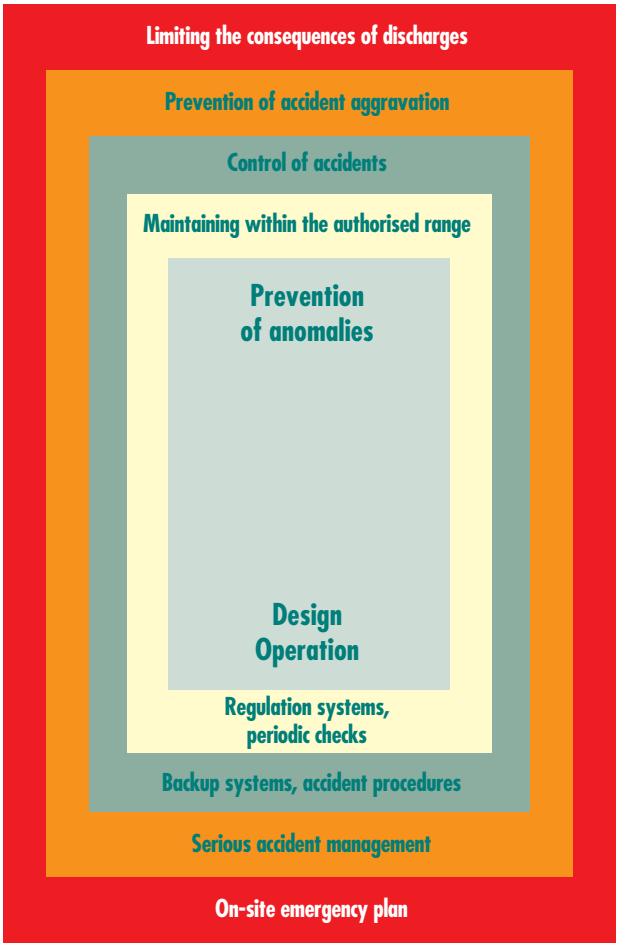
The main means of preventing accidents or of mitigating their consequences is the "Defence in Depth" concept. This is implemented in terms of successive and independent levels of protection: should one level of protection, or barrier, fail, the next comes into play.

An important element for the independence of the levels of defence is the use of different technologies (diversified systems).

The design of nuclear installations is based on a defence in depth approach. Five levels of protection are defined for nuclear reactors:

Level 1: Prevention of abnormal operation and failures
This is achieved by opting for robust and conservative installation design that includes safety margins and allows installations to withstand their own failures as well as the consequences of externally initiated events. It implies conducting the most exhaustive study possible of normal operating conditions to determine the severest stresses to which the systems will be subjected. It is then possible to produce an initial design basis of the facility, incorporating safety margins.

The five levels in "Defence in Depth"



Level 2: Keeping the installation within authorised limits
Regulation and governing systems must be designed to keep the installation within an operating range that is far from the safety limits. For example, if the temperature in a system increases, a cooling system starts up before the temperature reaches the authorised limit. Monitoring of the condition and correct operation of systems forms part of this level of defence.

Level 3: Control of accidents without core meltdown
The aim here is to postulate that certain accidents, chosen for their "envelope" characteristics (the most penalising in a given family) can happen, and to design and size backup systems to withstand those conditions.

Such accidents are generally studied with conservative hypotheses, that is to say the various parameters governing this accident are assumed to be the least favourable. The single-failure criterion is also applied, in other words, in the accident situation, we also postulate the failure of any given component. This means that systems that come into play in the event of an accident (emergency shutdown, safety injection, etc.) must have at least two redundant channels.

Level 4: Control of accidents with core meltdown
These accidents have been considered since the Three Mile Island accident (1979) and are now taken into account in the design of

new reactors such as the EPR. The aim is to preclude such accidents or to design systems that can withstand them. The study of these accidents will be reassessed in the light of experience feedback from the Fukushima accident.

Level 5: Mitigation of the radiological consequences of significant releases
This requires implementation of the emergency plan measures, including measures to protect the general public: shelter, taking of stable iodine tablets to saturate the thyroid and avoid fixation of radioactive iodine carried by the radioactive plume, evacuation, restrictions on consumption of water and of agricultural products, etc.

1|2|3 Interposing of barriers

To limit releases several superposed barriers are placed between the radioactive substances and the environment. Barriers must be designed to have a high degree of reliability and must be monitored to detect any weaknesses or failures. There are three such barriers for pressurised water reactors: the fuel cladding, the boundary of the reactor primary system, and the containment vessel (see chapter 12).

1|2|4 Deterministic and probabilistic approaches

Postulating the occurrence of a limited number of design accidents is an approach termed deterministic. This is a principle which is simple to apply and which allows design of installations with good safety margins, making use of the so-called "envelope" cases. It does not, however, lead to a very realistic view of the most probable scenarios and does not rank risks satisfactorily, since it focuses attention on accidents studied with very conservative assumptions.

The deterministic approach therefore needs to be completed with an approach that takes better account of accident scenarios in terms of their probability: the probabilistic approach, used in "probabilistic safety assessments" (PSA).

A PSA consists in taking each "initiator" event leading to activation of a safety system (defence in depth level 3) and building of an event tree, defined by failures (or successes) of reactor control procedure actions. The probability of each sequence is then calculated based on statistics on the reliability of systems and on the rate of success of actions (including data on "human reliability"). Similar sequences of events that correspond to the same "initiator" are grouped into families, making it possible to determine the contribution of each family to the probability of reactor core meltdown.

PSAs cover a wider range of accidents than the deterministic studies and make it possible to verify and possibly complete deterministic design. They are, however, limited by the uncertainties in reliability data and the approximations used in modelling installations. They are therefore to be used as a complement to deterministic studies and not as a substitute for them.

1|2|5 Operating experience feedback

Experience feedback contributes to defence in depth. It consists in implementing a reliable system for detecting any anomalies which can occur, such as equipment failures or procedural errors. This system should allow early detection of any abnormal operation and draw the relevant conclusions (especially in terms of organisation) such as to prevent these anomalies happening again. Operating experience feedback encompasses events, incidents and accidents occurring both in France and abroad, whenever relevant to enhancing nuclear safety or radiation protection.

2 THE STAKEHOLDERS

The organisation of the regulation of nuclear safety and radiation protection in France complies with the CNS, of which Article 7 requires that *"Each Contracting Party shall establish and maintain a legislative and regulatory framework to govern the safety of nuclear installations"* and of which Article 8 requires that each Party *"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"*. These requirements are confirmed by the European Directive of 25 June 2009 on nuclear safety.

In France, the regulation of nuclear safety and radiation protection is primarily the responsibility of three parties: Parliament, the Government and ASN. Their respective competences are defined by the TSN Act, now codified in books I and V of the Environment Code, by ordinance 2012-6 of 5th January 2012.

2|1 Parliament

Parliament's principal role in the field of nuclear safety and radiation protection is to make laws. Two major Acts were

passed in 2006: The TSN Act, of 13th June 2006, on transparency and security in the nuclear field; and the Programme Act, of 28th June 2006, on the sustainable management of radioactive materials and waste.

In the same way as the other independent administrative authorities, and by virtue of the TSN Act, 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.

The French Office for the Evaluation of Scientific and Technical Choices

The mission of the French Office for the Evaluation of Scientific and Technical Choices (OPECST) is to inform Parliament as to the consequences of scientific or technological choices, in order to ensure that parliamentary decisions are fully informed. To this end, the OPECST gathers information, implements study programmes and conducts evaluations.

In the field of nuclear safety, the OPECST has, since its creation, focused on the administrative organisation of nuclear safety and radiation protection, the measures taken by licensees in this field, the structures adopted in other countries and the adequacy of the resources allocated to ASN to meet its responsibilities. It is, notably, before the OPECST that ASN reports on its activities.

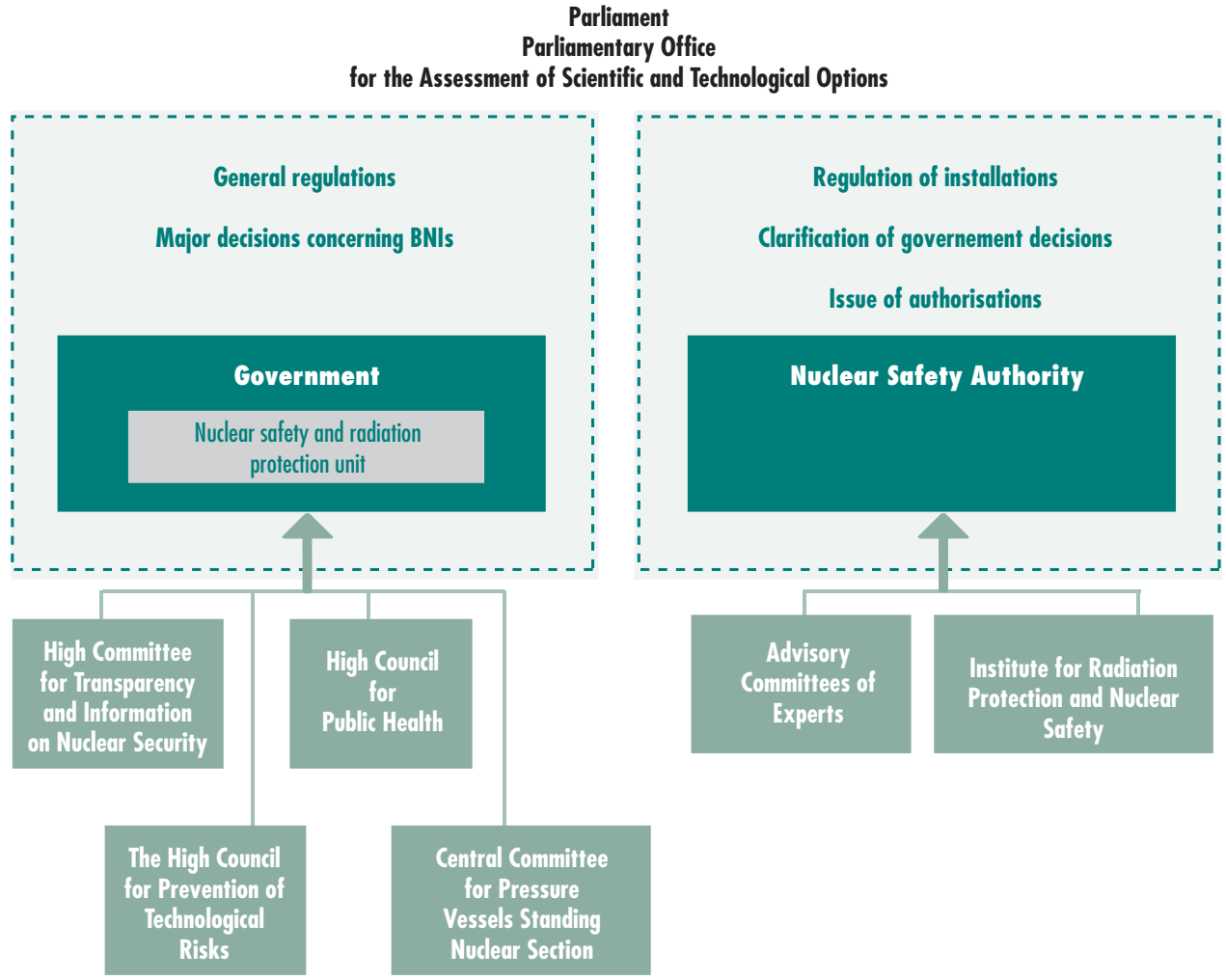
Following the Fukushima accident, the OPECST carried out a mission in 2011 on nuclear security and the future of nuclear energy, which led to the drafting of a report and recommendations.

2|2 The Government

The Government exercises regulatory powers. It is therefore in charge of laying down the general regulations concerning nuclear safety and radiation protection. The TSN Act also tasks it with making major decisions concerning BNIs, for which it relies on proposals or opinions from ASN. The Government can also call on consultative bodies such as the High Committee for Transparency and Information on Nuclear Safety (HCTISN).

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

Regulation of nuclear safety and radiation protection in France



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

On the advice of ASN and, as applicable, following a proposal by it, the ministers responsible for nuclear safety define the general regulations applicable to BNIs and take major individual decisions concerning:
– the design, construction, operation, final shutdown and decommissioning of BNIs;
– the final shutdown, maintenance and surveillance of radioactive waste disposal facilities;
– the manufacturing and the operation of pressure vessels (ESP) specifically designed for these installations.

The minister responsible for radiation protection also defines the general regulations applicable to radiation protection, on the basis of ASN proposals as and when applicable.

The regulation of worker radiation protection is the responsibility of the Minister for labour.

Finally, the ministers responsible for nuclear safety and for radiation protection approve the ASN internal regulations by means of a Government order. Each of them also approves ASN technical regulatory decisions and certain individual decisions (setting BNI discharge limits, delicensing a BNI, etc.) affecting their own particular field.

The Nuclear Safety and Radiation Protection Mission

Under the authority of the ministers responsible for nuclear safety and for radiation protection, the Nuclear Safety and Radiation Protection Mission (MSNR), jointly with ASN, is tasked with proposing Government policy on nuclear safety and radiation protection, except for defence-related activities and installations and the radiation protection of workers against ionising radiation.

2|2|2 The *Préfets*

The *préfets*[3] are the State's representatives in the *départements*[4]. They are the guarantors of public order and play a particularly important role in the event of an emergency, in that they are responsible for measures to protect the general public.

The *préfet* intervenes during the various procedures presented in chapter 3.

He in particular issues his opinion on authorisation applications and, at the request of ASN, calls on the Departmental Council for the Environment and Health and Technological Risks, to obtain its opinion on water intake, effluent discharges and other detrimental effects of BNIs.

2|3 ASN

The TSN Act created an independent administrative nuclear safety authority (ASN) to monitor and regulate nuclear safety and radiation protection. ASN's remit comprises regulation, authorisation and monitoring as well as providing support to the public authorities for management of emergencies and contributing to informing the general public.

The ASN executive committee on 1st January 2012: (from left to right)
A. Delmestre, J-L. Lachaume, J-C. Niel, S. Mourlon, H. Legrand and P. Lignères

ASN is made up of a commission and of various departments.

From a technical point of view, ASN relies on the expertise with which it is provided, notably by the IRSN and by Advisory Committees of Experts (GPEs).

2|3|1 Role and duties

Regulation

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. These decisions are subject to approval by the ministers responsible for nuclear safety and for radiation protection.

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

Authorisation

ASN reviews BNI authorisation or decommissioning applications, issues opinions and makes proposals to the Government 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 completion of decommissioning.

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

ASN also issues the licenses provided for in the Public Health Code (CSP) concerning small-scale nuclear activities and issues authorisations or approvals for radioactive material transport operations.

3. In a *département*, representative of the State appointed by the President
4. Administrative region headed by a *Préfet*

ASN's decisions and opinions are published in its *Official Bulletin* on its website (*www.asn.fr*).

Controls

ASN checks compliance with the general rules and specific requirements concerning nuclear safety and radiation protection applicable to BNIs, the design, manufacturing and use of pressure equipment designed specifically for these installations, the transport of radioactive substances and the activities mentioned in Article L. 1333-1 of the Public Health Code (CSP) 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 equipment requirements. It issues the required approvals to the organisations participating in the verifications and nuclear safety or radiation protection watch.

Chapter 4 of this report presents ASN actions in this field.

Emergency situations

ASN takes part in managing radiological emergency situations. It provides technical assistance to the competent authorities for drafting of emergency response plans, taking account of the risks resulting from nuclear activities.

When an emergency situation of this nature occurs, ASN verifies the steps taken by the licensee to make the facility safe. It assists the Government with all matters within its field of competence and submits its recommendations on the medical or health measures or civil security steps to be taken. It informs the general public of the situation, of any releases into the environment and their consequences. It acts as the competent authority within the framework of international conventions, by notifying international organisations and foreign countries of the accident.

Chapter 5 of this report presents ASN actions in this field.

Investigation in the event of an accident

In the event of an incident or accident involving a nuclear activity, ASN may conduct a technical inquiry along similar lines to those applicable to "accident and investigation" boards called on to deal with transport accidents.

Information

ASN participates in informing the public in its areas of competence and in the nuclear safety and radiation protection level of activities and facilities under its monitoring and supervision. Chapter 6 of this report presents ASN actions in this field.

Research monitoring

The quality of ASN's decisions relies primarily on robust technical expertise which, in turn, requires the best and most up-to-date knowledge.

Consequently, ASN attaches great importance to the availability of the knowledge required to underpin the expertise it may need to call upon in the medium and long term. It is therefore important for the authority to identify the areas of research leading to acquisition of such knowledge, working with those involved in nuclear safety and radiation protection research and with its counterpart organisations in other countries.

The scientific committee at a meeting on 28th November 2011. (From left to right) Michel Spiro, Bernard Boullis, Vincent Favaudon, Jean-Claude Lehmann, Ashok Thadani and Victor Teschendorff

In 2010, ASN set up a Scientific Committee to examine its proposed orientations concerning the research work to be conducted or taken further in the fields of nuclear safety and radiation protection. The Scientific Committee comprises six members appointed for their expertise in the research field. Under the Chairmanship of Ashok Thadani, former research director of the United States Nuclear Regulatory Commission (NRC), the Scientific Committee met twice in 2011. It examined the following subjects:
– organisational and human factors
– radiobiology;
– the ageing of PWR metal components;
– nuclear fuel research facilities;
– non-destructive examinations.

The Fukushima nuclear accident also highlighted the need for more research in the field of nuclear safety. In 2011, ASN took part in the steering committee for the call for proposals issued by the French national research agency (ANR) for the nuclear safety part of the "investing in the future" programme.

2|3|2 Organisation

ASN is run by a Commission and comprises central services and regional divisions.

ASN Commission

The Commission comprises five Commissioners holding the post on a full-time basis. These are permanent appointments with a 6-year non-renewable mandate.

The Commission defines ASN strategy. More specifically, it is involved in developing overall policy, i.e. the doctrines and principles that underpin ASN's main missions of regulation, inspection, transparency, management of emergency situations and

international relations. The Commission also develops the Multi-Year Strategic Plan (PSP).

Pursuant to the TSN Act, the Commission submits ASN's opinions to the Government and takes the main ASN decisions. It decides on the public position to be adopted on the main issues within ASN's sphere of competence. The Commission adopts the ASN internal regulations which lay down its organisation and working rules, as well as its ethical guidelines. The Commission's decisions and opinions are published in ASN's Official Bulletin.

In 2011, the ASN Commission met 85 times. It issued 34 opinions and took 50 decisions.

ASN Central Services

The ASN central services comprise an Executive Committee, an Office of Administration, a Management and Expertise Office and eight departments covering specific themes.

Under the authority of the ASN Director-General, the Executive Committee organises and manages the departments on a day to day basis. It ensures that the orientations determined by the Commission are followed and that ASN's actions are effective. It oversees and coordinates the various entities.

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 Nuclear Power Plant Department (DCN) is responsible for regulating and inspecting the safety of the NPPs in operation, as well as the safety of future power generating reactor projects. It contributes to development of regulation/inspection strategies and ASN actions on subjects such as the safety consequences of deregulation of the electricity market, facility ageing, the extension of reactor service life, evaluation of NPP safety performance, and harmonisation of nuclear safety in Europe.

  The DCN comprises five branches: "Reassessment – Equipment – Hazard", "Operation", "Core – Studies", "Radiation Protection – Environment and labour Inspections" and "Regulations and New Installations".

– The Nuclear Pressure Equipment Department (DEP) is responsible for monitoring of safety of pressure equipment installed in BNIs. It is primarily tasked with developing regulations on the design, manufacture and operation of nuclear pressure equipment and for monitoring application of these regulations by manufacturers and their sub-contractors, and by nuclear operators. The DEP also considers applications from approved organisations wishing to carry out regulation inspections on nuclear pressure equipment.

  The DEP comprises three Branches: "Design – "Manufacturing", "In-service Monitoring" and "Relations with Divisions – Operations".

– The Transport and Radiation Sources Department (DTS) is responsible for monitoring of activities relating to sources of ionising radiation in the non-medical sectors and for transport of radioactive materials. It contributes to the development of technical regulations, to monitoring of their application and to management of authorisation procedures (installations and equipment emitting ionising radiation in non-medical sectors, suppliers of medical and non-medical sources, accreditation of packaging and of relevant organisations). It is preparing to take charge of regulating radioactive source security.

  The DTS comprises three Branches: "Transport Management", "Radiation Protection and Sources", and "Source Security".

– The Waste, Research Facilities and Fuel Cycle Department (DRC) is responsible for monitoring nuclear fuel cycle facilities, research facilities, nuclear installations being decommissioned, contaminated sites and radioactive waste management. It takes part in monitoring and inspecting the Bure underground research laboratory and the research facilities covered by international conventions, such as CERN or ITER.

  The DRC comprises three Branches: "Waste and Contaminated Sites", "Fuel Cycle" and "Research and Decommissioning Facilities".

– The Ionising Radiation and Health Department (DIS) is responsible for regulating the use of ionising radiation in the health sector. Working with IRSN and relevant health agencies, the prime responsibility of the DIS is to organise a scientific, health and medical watch on the effects of ionising radiation on health, to contribute to drafting of regulations in the fields of radiation protection and medical uses of ionising radiation, and to contribute to management of the health aspects of radiological incidents and accidents.

  The DIS comprises two Branches: "Exposure in the Medical Sector" and "Exposure of Workers and the Public".

– The Environment and Emergency Department (DEU) is responsible for monitoring of environmental protection and management of emergency situations. It establishes the policy on nationwide radiological monitoring and on provision of information to the public as well as helping to ensure that discharges from BNIs are as low as reasonably achievable, in particular by establishing general regulations. The DEU also contributes to defining the organisational framework of public authorities and nuclear operators where management of emergency situations is concerned and establishes ASN regulatory policy.

  The DEU comprises three Branches: "Safety and Preparedness for Emergencies", "Environment and Prevention of Nuisances" and "Development of Regulations".

– The International Relations Department (DRI) is in charge of ASN's bilateral and multilateral international relations. It develops exchanges with ASN's counterpart organisations in other countries to provide information about and explain French practices and to provide the countries concerned with useful information on the safety of French nuclear installations close to their borders. The DRI coordinates ASN representation within international bodies such as the European Union, the IAEA or the Nuclear Energy Agency (NEA).

– The Communication and Public Information Department (DCI) develops and implements ASN's policy on communication and information regarding nuclear safety and radiation protection. It coordinates communication and information actions targeting different audiences, with a focus on handling requests for documentation, making ASN's position known and explaining regulations.

  The DCI comprises two Branches: "Public Information" and "Publications and Multimedia".

– The Office of Administration (SG) helps to provide ASN with the adequate, appropriate and long-term resources the Authority requires to operate. It is responsible for management of human resources, including with regard to skills, and ensures that social dialogue is developed. It is also responsible for ASN real estate policy and its logistical and material resources. It is in charge of ASN budget policy and ensures optimised use of its financial resources. Finally, it provides legal expertise for ASN as a whole.

  The SG comprises four Branches: "Human Resources", "Budget – Finance", "Logistics – Real Estate", and "Legal Affairs".

– The Management and Expertise Office (MEA) provides ASN with IT resources and a high level of expertise. It ensures that ASN's actions are coherent, by means of a quality approach and by overseeing coordination of the workforce.

  The MEA comprises two Branches: "IT and Telephones" and "Expertise and Research".

ASN divisions

The eleven ASN regional divisions carry out their activities under the authority of regional representatives. It is the directors of the Regional Departments for Environment, Development and Housing (DREAL) for the areas in which the divisions are located who, acting as delegates, assume this responsibility. The directors are seconded to ASN in respect of these duties and are not under the authority of the *préfets* where their nuclear safety and radiation protection duties are concerned. 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 operations and on small-scale nuclear activities, and review most of the authorisation applications filed with ASN by the nuclear activity licensees within their regions.

In emergency situations, the divisions assist the *préfet* of the *département*, who is in charge of protecting the general public, and supervise the operations carried out to safeguard the facility on the site. To ensure preparedness for these situations, they take part in drawing up the emergency plans drafted by the *préfets* and in periodic emergency exercises.

The divisions contribute to ASN's public information duty. They for example take part in the meetings of the local information committees (CLIs) and maintain regular relations with the local media, elected officials, associations, licensees and local administrations.

ASN's divisions are presented in chapter 8 of this report.

2|3|3 Operation

Human resources

The total ASN workforce on 31st December 2011 stood at 456, with 244 people working in the central services and 212 in the regional divisions.

This workforce can be further broken down as follows:
– 373 tenured or contract staff;
– 83 staff seconded from public establishments (Assistance publique - Hôpitaux de Paris, CEA, IRSN, ANDRA, SDIS).

In order to launch the process of experience feedback from the Fukushima accident, the ASN workforce will be boosted by 22 staff seconded from IRSN.

On 31st December 2011, the average age of the ASN staff was 44.

A balanced age pyramid and a policy of diversity in recruitment (and thus of experience), gives ASN the qualified and complementary human resources it needs to meet its responsibilities. In addition, training and integration of the youngest staff members and transmission of know-how guarantee the required level of expertise.

So that its staff are at all times competent, ASN must be able to offer them a varied career path, related to their needs, in particular acknowledging their experience.

Skills management

Competence is one of the four key values of ASN. The tutor system, initial and continuous training, whether general, linked to nuclear techniques, the field of communication, or legal matters, as well as day-to-day practices, are essential aspects of the professionalism of ASN staff.

Management of the skills of ASN personnel is based primarily on training tailored for each staff member from a detailed and regularly updated core training corpus. This involves technical training, but also training in legal aspects and communication. In 2011, nearly 4,100 days of training were provided to ASN staff through 245 sessions forming part of 153 different courses. The financial cost of the courses, provided by organisations other than ASN, amounted to €520,000.

Since 1997, ASN has followed a programme of qualification of its inspectors, based on recognition of their technical competence. An Accreditation Committee was set up in 1997 to advise the Director-General on the entire qualification system. In particular, the Committee reviews the applicable training curriculum and the qualification reference systems and conducts interviews with inspectors as part of a confirmation process.

Chaired by Mr Philippe Saint Raymond, the Accreditation Committee comprises senior ASN inspectors and persons qualified in inspection, human resources, appraisal and teaching in the field of nuclear safety and inspection of classified installations. Its competence was confirmed in 2009 for the radiation protection field.

The Accreditation Committee met three times in 2011 and proposed the confirmation of 9 inspectors. As at 31st December

2011, 54 ASN nuclear safety or radiation protection inspectors are senior inspectors, or about 16% of the total number of ASN inspectors.

Financial resources

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

The ASN's budget amounted to €68 million in 2011. It comprises €39 million in ASN payroll credits and €29 million in operating credits for the ASN central services and the eleven regional divisions.

€76.5 million in credits were also devoted to the technical appraisal work performed by IRSN on behalf of ASN. It must be remembered that, as stipulated in the TSN Act, ASN relies on IRSN expertise. The credits financing IRSN actions on behalf of ASN come from a State subsidy, topped up since 2011 by an annual contribution from the BNI licensees. ASN is consulted by the Government concerning the corresponding part of the State subsidy to IRSN and the amount of the annual contribution owed by the BNI licensees.

In total, the State's 2011 budget for transparency and the regulation of nuclear safety and radiation protection in France, amounted to €148 million: €68 million for the ASN budget, €76.5 million for IRSN technical support to ASN, €3.5 million for other IRSN missions and €0.15 million for the working of the HCTISN.

As shown in the following table, these credits are split between five programmes (181, 217, 333, 218 and 190) to which must be added the annual contribution to the IRSN. This complex budget structure obscures the overall picture of the cost of regulation and inspection, as well as leading to difficulties in preparing, arbitrating and implementing budgets.

In order to initiate the process of experience feedback from the Fukushima accident, the 2012 budget for transparency and the regulation of nuclear safety and radiation protection is increased by €22.5 million: €7.5 million for the ASN credits, €7.5 million for IRSN technical support to ASN and €7.5 million for other IRSN missions.

ASN management tools

The strategy-based approache

The Multi-year Strategic Plan (PSP), prepared by the ASN Commission, outlines ASN's strategy for a three year period. It is presented annually in an operational orientation document that sets the year's priorities for ASN and also contains annual action plans, followed up periodically, for each of the component entities.

This three-level plan is an essential element of ASN's development, organisation and management.

Quality management system

To guarantee and improve the quality and effectiveness of its actions, ASN defines and implements a quality management system inspired by the ISO and IAEA international standards. This system is based on:
– an organisation manual containing organisation notes and procedures, defining the rules to be applied for each task;
– internal and external audits to check rigorous application of the system's requirements;
– listening to the stakeholders;
– performance indicators for monitoring the effectiveness of action taken;
– a periodic review of the system, to foster continuous improvement.

In 2006, in line with its continuous progress approach, ASN received an Integrated Regulatory Review Service (IRRS) peer review mission, to ensure that its organisation and practices comply with international IAEA standards. This "full scope" mission addressed all of the fields covered by the IRRS nuclear safety and radiation protection missions.

An IRRS follow up mission was organised in 2009. The participating international experts considered that ASN had responded satisfactorily to 90% of the recommendations and suggestions made in 2006. In a number of areas such as inspection, preparedness for emergencies, public information or ASN's international role, they were once again of the opinion that ASN's actions ranked amongst the some areas for improvement, notably in terms of skills management.

ASN took advantage of the conclusions of this mission to reinforce the conformity of its practices and its organisation with the best international standards. The next IRRS mission will be received in 2014.

The reports can be viewed on the ASN website.

Internal communication

Internal communication is a feature of ASN's multi-year strategy, one key aspect of which, for the period 2010-2012, is the development and full use of skills. It also supports the implementation of ASN's annual priorities laid out in the operational orientation document.

In 2011, ASN thus gave pride of place to ASN staff in the various media at their disposal, whether the intranet, the in-house magazine *Transparence*, which is also sent out to certain outside audiences, or the ASN activity report. One area for work was to develop exchanges with the agents through interviews in order to discuss their careers and the ongoing projects, to involve them to a greater extent in the preparation of media or the running of the intranet and to adopt a more direct and lively tone, in particular through the development of the in-house "web TV".

Internal communication also accompanied the year's major projects, including experience feedback from the Fukushima accident and the complementary safety assessments, the CODIRPA post-accident situation seminar, dose optimisation in medical imaging or, in the field of human resources, elections to the professional representative bodies, monitoring of the work of the ASN human resources committee, and the relocation of the regional divisions.

The in-house communication media are presented in chapter 6.

Table 2: credits allocated to transparency and the regulation of nuclear safety and radiation protection in France, in 2011 and 2012:

Mission	Programme manager	Programme	Action	Nature	2011 Budget Act (M€)	2012 Budget Act (M€)
Ministerial mission Ecology, sustainable development and spatial planning	**Laurent Michel** Director General for the prevention of risks at the ministry for ecology, sustainable development, transport and housing	**181 :** Risk Prevention	**Action 9** Regulation of nuclear safety and radiation protection	Staff costs (including seconded staff)	38.80	39.60
				Operating and intervention spending	13.10	18.50
				TOTAL	**51.90**	**58.10**
			Action 1 prevention of technological risks and pollution	Operation of the High Committee for Transparency and Information on Nuclear Security (HCTISN)	0.15	0.15
	Jean-François Monteils General Secretary of the ministry for ecology, sustainable development, transport and housing	**217:** Implementation and oversight of policy for ecology, energy, sustainable development and the sea	-	Operation of ASN's 11 regional divisions	9.77 (1)	10.08 (1)
Ministerial mission Oversight of government actions	**Serge Lasvignes** General Secretary of the Government	**333 :** Resources shared by decentralised administrations	-			1.15
Interministerial mission Management of public finances and human resources	**Dominique Lamiot** General Secretary of the ministries for economics and finance	**218 :** Implementation and oversight of economic and financial policies	-	Operation of the ASN central services (Paris and Fontenay-aux-Roses)	6.27 (2)	6.27 (2)
				SUB-TOTAL	**68.09**	**75.75**
Interministerial mission Research and higher education	**Régine Bréhier** Director of research and innovation at the ministry for ecology, sustainable development, transport and housing	**190 :** research in the fields of energy and sustainable development and spatial planning	**Sub-action 11-2 (area 3):** The French Institute for Radiation Protection and Nuclear Safety (IRSN)	IRSN technical support activities for ASN	46.40	46.40
2010 annual contribution on behalf of IRSN instituted by article 96 of budget amendment Act 2010-1658 of 29th December 2010					33.38 (3)	48.38 (3)
				SUB-TOTAL	**79.78**	**94.78**
				TOTAL	**147.87**	**170.53**

(1) Source: 2011 Budget Bill and 2012 Budget Bill (PAP of programme 181).
(2) Source: 2006 Budget Bill (after deduction of transfer made under 2008 Budget Bill).
(3) The share of the contribution actually allocated to ASN technical support was €30 million in 2011 and will be €37.6 million in 2012.

2|4 Consultative bodies

2|4|1 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. It can be called on by the Government, Parliament, the local information committees or the licensees of nuclear facilities, with regard to all questions relating to information about nuclear safety and its regulation and monitoring.

The HCTISN's activities in 2011 are described in chapter 6.

2|4|2 The High Council for Public Health

The High Council for Public Health (HCSP), created by Act 2004-806 of 9th August 2004 concerning public health policy,

is a scientific and technical consultative body reporting to the minister responsible for health.

The HCSP contributes to defining the multi-year public health objectives, reviews the attainment of national public health objectives and contributes to the annual monitoring process. Together with the health agencies, it provides the public authorities with the expertise necessary for managing health risks and for defining and evaluating prevention and health safety policies and strategies. It also anticipates future developments and provides advice on public health issues.

2|4|3 The High Council for Prevention of Technological Risks

As part of the process to overhaul the technological risks consultation process, the Government issued a decree on 27th July 2010, abolishing the BNI Consultative Committee (CCINB) which had been created by decree on 2nd November 2007 and which was consulted on texts relating to the regulation of basic nuclear installations and the more important individual decisions regarding these facilities.

Henceforth, consultation will take place before the High Council for Prevention of Technological Risks (CSPRT), created by Order 2010-418 of 27th April 2010. Alongside representatives of the State, the Council will be made up of licensees, qualified personalities and representatives of environmental associations. The CSPRT, which takes over from the high council for classified facilities, will see the scope of its remit extended to pipelines transporting gas, hydrocarbons and chemicals, as well as covering BNIs.

The CSRPT must be called on by the Government for an opinion on ministerial BNI orders. It can also be called on by ASN for individual BNI-related decisions.

Where individual decisions regarding BNIs are concerned, ASN wished to preserve the process of collaboration which existed with the CCINB. To this end, on 13th April 2010, the ASN Commission adopted Decision 2010-DC-0179 instituting a procedure for hearing of BNI operators and CLIs who wish to participate, before the adoption of certain opinions or decisions relating to BNIs. In 2011, EDF and the local information committee thus applied for a hearing before the ASN Commission regarding the decommissioning of Brennilis.

At the current stage, ASN has decided to introduce hearings by its Commission in all cases where hearings before the CCINB were previously possible, and under similar arrangements. However, this decision includes the possibility of extending the hearing procedure to other ASN decisions or opinions, particularly in the light of appraisal of this initial implementation.

2|4|4 The Central Committee for Pressure Equipment

The Central Committee for Pressure Equipment (CCAP), created by Article 26 of decree 99-1046 of 13th December 1999 concerning pressure equipment, is a consultative organisation reporting to the minister responsible for industry.

It comprises members of the various administrations concerned, persons chosen for their particular competence and representatives of the manufacturers and users of pressure equipment and of the technical and professional organisations concerned. It is chaired by Mr Pierre Palat, who is also Vice-Chair of the Advisory Committee for Nuclear Pressure Equipment (GP ESPN), (see point 2|5|2).

It must be referred to by the Government and by ASN for all questions affecting the legislative and regulatory aspects of nuclear pressure equipment (both ministerial orders and individual decisions concerning BNIs). Accident reports are also forwarded to it.

2|5 Technical support organisations

ASN benefits from the expertise of technical support organisations when preparing its decisions. The French Institute for Radiation Protection and Nuclear Safety (IRSN, www.irsn.fr) is the main such organisation. ASN has been making efforts to diversify its experts for several years.

2|5|1 IRSN

IRSN, created by Act 2001-398 of 9th May 2001 and by decree 2002-254 of 22nd 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 capacity 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.

IRSN also has certain public service responsibilities, in particular monitoring of the environment and of populations exposed to ionising radiation.

IRSN manages national databases (national nuclear material accounting, national inventory of radioactive sources, file for monitoring worker exposure to ionising radiation, etc.), and contributes to information of the public concerning the risks linked to ionising radiation.

IRSN workforce

As at 31st December 2011, the IRSN's overall workforce stood at 1,700, about 400 of whom are devoted to ASN technical support.

In order to initiate experience feedback from the Fukushima accident, the IRSN workforce was boosted by an extra 44 staff, 22 of whom are seconded to ASN.

IRSN budget

In 2011, IRSN's total budget amounted to €315 million, of which €76.5 million were devoted to providing ASN with technical support.

IRSN credits for ASN technical support are covered in part (€46.5 million) by a subsidy from the State's general budget allocated to IRSN and included in action 11 "Research in the field of risks" of programme 190 "Research in the fields of energy and sustainable development and spatial planning", of the interministerial "Research and higher education" mission. The rest (€30 million) is covered by a contribution from the nuclear licensees. This contribution was put into place by the budget amendment act of 29th December 2010.

An agreement was signed by ASN and IRSN to define the 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.

In order to initiate the process of experience feedback from the Fukushima accident, the 2012 amount of the contribution has been increased by €15 million: €7.5 million for IRSN technical support to ASN and €7.5 million for other IRSN missions.

2|5|2 Advisory Committees of experts

In preparing its decisions, ASN calls on the opinions and recommendations of seven Advisory Committees of Experts (GPE), with expert knowledge in the areas of waste, nuclear pressure equipment, medical exposure, non-medical radiation protection, reactors, transport, and laboratories and plants.

ASN consults the GPEs in preparing its main decisions. In particular, they review the preliminary, provisional and final safety analysis reports for each of the BNIs. They can also be consulted about changes in regulations or doctrine.

For each of the subjects covered, the GPEs examine the reports produced by IRSN, by a special working group or by one of the ASN departments. They issue an opinion backed up by recommendations.

The GPEs comprise experts nominated for their individual competence. They come from various backgrounds; universities, associations, appraisal and research organisations. They can also be licensees of nuclear facilities or come from other sectors (industrial, medical, etc.). Participation by foreign experts can help diversify the approach to problems and take advantage of experience acquired internationally.

In line with its policy of transparency in the area of nuclear safety and radiation protection, ASN has been making its position statements and documents concerning GPE meetings available to the public since 2009.

In 2011, the ASN budget allocated to the GPEs was around €250,000.

The Advisory Committee for waste (GPD)

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

It held three meetings and visited two facilities in 2011.

The Advisory Committee for nuclear pressure equipment (GPESPN)

Since 2009, the GPESPN has replaced the Standing Nuclear Section (SPN) of the CCAP. The GPESPN is chaired by Mr Philippe Merle and comprises experts appointed for their competence in the field of pressure equipment.

It held four meetings in 2011.

The Advisory Committee for medical exposure (GPMED)

Chaired by Mr Yves Coquin, the GPMED comprises experts appointed for their competence in the field of radiation protection of health professionals, the general public and patients and for medical applications of ionising radiation.

It held two meetings in 2011.

The Advisory Committee for radiation protection (non-medical) (GPRAD)

Chaired by Mr Jean-Paul Samain, the GPRAD comprises experts appointed for their competence in the field of radiation protection of workers (other than health professionals) and radiation protection of the general public, for industrial and research applications of ionising radiation, as well as for natural ionising radiation.

It held three meetings in 2011.

A "Zoning" working group was also set up within the GPMED and the GPRAD. This working group is tasked with proposing recommendations on the delineation of and access to regulated zones defined pursuant to the labour code.

In 2011, this group met seven times and visited four nuclear and medical facilities. One highlight of the Zoning working group investigative programme was a national symposium organised on radiological zoning at the University of Caen, with the aim of collating experience feedback from stakeholders in the field and ultimately to contribute to the work done by the GPMED and GPRAD.

The Advisory Committee for reactors (GPR)

The Advisory Committee for reactors is chaired by Mr Pierre Govaerts and comprises experts appointed for their competence in the field of reactors.

It held eighteen meetings and visited three facilities in 2011.

The Advisory Committee for transport (GPT)

Chaired by Mr Jacques Aguilar, the GPT comprises experts appointed for their competence in the area of transport.

It held two meetings in 2011.

The Advisory Committee for laboratories and plants (GPU)

The Advisory Committee for laboratories and plants is chaired by Mr Philippe Saint Raymond. It comprises experts appointed for their competence in the field of laboratories and plants in which radioactive materials are used.

It held eight meetings and visited three facilities in 2011.

2|5|3 The ASN's other technical support organisations

To diversify its expertise and to benefit from other specific skills, ASN also has its own budget allowance, amounting to €0.65 million in 2011.

A significant part of this budget is allocated to subjects concerning exposure of the general public to radon in the home, as well as to the work of the Steering Committee for managing the post-nuclear accident phase (CODIRPA).

In 2011, ASN continued or initiated collaboration with:
– the Building Industry Scientific and Technical Centre (CSTB): help with radon standardisation, preparation of efficiency indicators for remediation technologies, assistance to those working in the field;
– French national institute for the study of industrial environments and risks (INERIS): Appraisal of the methodology developed by EDF to assess risks linked to emissions of chemical substances from nuclear power plants;
– the Bureau Veritas, jointly with the mechanical industries technical centre (CETIM): review of design and construction rules for mechanical equipment in nuclear power plants in order to check their ability to comply with certain essential safety requirements;
– the Nuclear Protection Evaluation Centre (CEPN): support for post-nuclear accident work, review of training programmes for radioprotection of patients;
– SYMLOG: methodological support for information and participation of the general public according to the terms of the Aarhus convention.

The ASN 2012 budget increase will enable the credits allocated by ASN to these diverse appraisals to be doubled and will allow complete analysis of the experience feedback from the Fukushima accident.

2|6 Other stakeholders

As part of its mission to protect the general population from the health risks of ionising radiation, the ASN cooperates closely with other competent institutional stakeholders addressing health issues.

2|6|1 French National Authority for Health

The French National Authority for Health (HAS), a body created by the French Government in 2004, is tasked primarily with maintaining an equitable health system and with improving patient care.

The Authority and its activities are presented on its website: *www.has-sante.fr.* An ASN-HAS convention was signed on 4th December 2008.

2|6|2 The French Health Product Safety Agency (AFSSAPS)

The main mission of the French Health Product Safety Agency (AFSSAPS), created in 1998, is to assess the risks and benefits associated with the use of health products.

The Agency and its activities are presented on its website: *www.afssaps.fr.* An ASN-AFSSAPS convention was signed on 15th July 2009.

2|6|3 The French Health Monitoring Institute (InVS)

The French Health Monitoring Institute (InVS), a public body created in 1998, is tasked primarily with monitoring and issuing of warnings in all areas of public health.

The Institute and its activities are presented on its website: *www.invs.sante.fr.* An ASN-InVS convention was signed on 7th September 2009.

2|6|4 French National Cancer Institute

The French National Cancer Institute (INCa), created in 2004, is primarily responsible for coordinating activities in the fight against cancer.

The Institute and its activities are presented on its website: *www.e-cancer.fr*

Table 3: advisory Committee meetings and visits in 2011

Committee	Main agenda	Date
GPR	Review of operating experience feedback from French and foreign PWRs for the period 2006 to 2008	13 January
GPR	Review of operating experience feedback from French and foreign PWRs for the period 2006 to 2008 (completion of review).	20 January
GPMED	Project to modify the annexes of the order concerning the diagnostic reference levels (DRL) in radiology and nuclear medicine	1 February
GPR	In-house meeting – Preparation for the quadripartite meeting	24 February
GPU	UP2-400 - La Hague (COGEMA) visit – review of decommissioning conditions for BNIs 33, 38 and 47	16 March
GPU	UP2-400 - La Hague (COGEMA) meeting – review of decommissioning conditions for BNIs 33, 38 and 47	23 March
GPR	Site visit to Flamanville 3	29 March
GPRAD	- Draft guide on exiting the emergency phase and initiating the post-nuclear accident phase - Revision of draft order of 30/12/2004	1 April
GPR	Flamanville 3 information meeting	7 April
GPMED	- Review of the draft referral concerning radiation protection during the use of injectable medical devices emitting ionising radiation. - Referral concerning the revision of the 30th December 2004 order concerning the individual medical monitoring card and individual dosimetry information for workers exposed to ionising radiation.	24 May
GPR	ATMEA 1™ reactor – safety options 1st session	26 May
GPRAD	- Draft guide on exiting the emergency phase and initiating the post-nuclear accident phase - Revision of draft order of 30/12/2004	7 June
GPR	EPR – I&C and in-house meeting	16 June
GPD	In-house meeting	21 June
GPR	Experience feedback on fuel for the period between 2003 and 2009	23 June
GPT	Conformity of the TN883 package model loaded with bituminised spent fuel, with the requirements applicable to type B packages loaded with fissile material	28 June
GPR	ATMEA 1™ reactor – safety options 2nd session	30 June
GPR GPU	Methodology of the complementary safety assessments for BNIs following the Fukushima accident	6 July
GPESPN	Operations to repair the vessel head intended for the Flamanville 3 EPR reactor	14 September
GPESPN	ATMEA 1™ – Review of design options for nuclear pressure equipment on the main primary system and the main secondary systems	14 September
GPU GPR GPD	Visit to the JET for ITER	19 September
GPR	Periodic safety review of the EOLE-MINERVE research reactors (BNI 42 and 95)	28 September
GPT	Conformity of TN843 package model	29 September
GPR	ATMEA 1™ reactor – safety options 3rd session	6 October
GPR	ATMEA 1™ reactor – safety options 4th session	14 October
GPR	ATMEA 1™ reactor – safety options 5th and last session	28 October
GPR GPU	Complementary safety assessments (CSAs) for BNIs following the Fukushima accident	8-10 November
GPESPN	Mechanical properties of materials of certain components intended for the Flamanville 3 EPR and the replacement steam generators	23 November
GPESPN	Use of steam generators manufactured in the 90s to replace the SGs at Paluel 2 in 2015	23 November
GPU GPR GPD	Review of the ITER BNI creation authorisation application file (1st session)	30 November
GPU GPR GPD	Visit to the ITER construction site at Cadarache	15 November
GPRAD	Draft order concerning the certification of outside contractors	1 December
GPU GPR GPD	Review of the ITER BNI creation authorisation application file (2nd session)	7 December
GPU	Safety and radiation protection management review of AREVA nuclear facilities	14 December

3 OUTLOOK

2011, ASN's fifth full year as an independent administrative authority, was marked by the nuclear accident at Fukushima.

Over and above the initial steps taken in 2011 (complementary safety assessments, targeted inspections, work on harmonisation of the international safety standards, etc.), detailed experience feedback from this accident must be analysed in detail. Detailed analysis of experience feedback from the Fukushima accident will take at least ten years.

To be able to carry out this feedback analysis, while continuing to perform its regular and demanding work on the regulation and monitoring of French civil nuclear facilities, ASN has requested additional resources. In its opinion 2011-AV-0135 of 9th November 2011, ASN duly noted the budgetary effort made by the Government at a time of economic crisis, but remains deeply concerned by the inadequacy of these measures in the light of the scale of the high-priority, long-term nuclear safety issues that France must address following the accident at the Fukushima nuclear power plant: this is for example the case of the addition of only 22 staff seconded from personnel recruited by IRSN.

ASN stresses that fact that these additional staff must be part of an increase in its permanent workforce rather than a temporary secondment. It points out that in the current context, only internal redeployments enable it to deal immediately with high-priority urgent matters, inevitably leading to slower handling of other matters that are less urgent in terms of safety.

Furthermore, in a context marked by the Fukushima accident, the State must give a clear and unambiguous presentation of the overall efforts being devoted to the public policy of nuclear safety and radiation protection regulation in France. The current structure of the budget devoted to this role fails to give Parliament and the general public a full and clear view of the credits allocated to it by the State. The complexity of the structure concerning ASN has been underlined on various occasions, for example by Parliament and the French Court of Audit *(Cour des comptes)*.

ASN considers that thought must continue to be given to simplifying the budget structure and, in the light of the current pressures on public spending, must include a search for sources of funding from outside the budget, such as that received by IRSN through budget amendment act 2010-1658 of 29th December 2010.