

1 THE ASN'S INTERNATIONAL OBJECTIVES

The nuclear fleet supervised by the ASN is one of the largest and most diverse in the world. The ASN's therefore aims to ensure that its nuclear and radiation protection supervisory activities constitute an international reference.

The ASN's international duties were confirmed in decree 2002-255 of 22 February 2002, creating the Directorate General for Nuclear Safety and Radiation Protection, which in particular stipulates:

"Together with the departments of the Minister for Foreign Affairs, the Directorate General for Nuclear Safety and Radiation Protection shall, within its areas of competence, prepare and propose France's positions with a view to international and community debates".

The ASN's main international objectives are as follows:

- To develop information exchanges with its foreign counterparts concerning regulatory systems and practices, problems encountered in the field of nuclear safety and radiation protection, and the steps taken with a view to:
 - enhancing its approach;
 - improving its knowledge of how foreign nuclear safety and radiation protection authorities really work and learning lessons for its own operating methods;
 - and improving its position in technical discussions with the French operators, as its arguments would be strengthened by practical knowledge of conditions abroad.
- In the fields of nuclear safety and radiation protection, to make known and explain the French approach and French practices and provide information on the steps taken to resolve the problems encountered. This approach involves action in a number of areas:
 - to make known French positions on certain issues such as very low level waste, the creation of a radiation protection incident and accident classification scale, or the French policy of lowering the authorised limits for basic nuclear installation discharges;
 - to provide assistance to countries wishing to create or develop their nuclear safety authority, such as the states of the ex-USSR, and certain emerging countries;
 - when requested, to help foreign nuclear safety authorities required to issue permits for nuclear equipment of French origin or design.
- To inform the French public on what is happening abroad;
- To inform foreign States of events that have happened in France and provide the countries concerned with all useful information about French nuclear facilities located close to their borders;
- To help ensure that changes in European and international rules and practices are based on the best practices, in particular by taking part in the think-tanks set up by the international bodies and in the drafting of texts by these bodies describing nuclear safety and radiation protection principles and practices;
- To play an active role in the work being done to harmonise nuclear safety and radiation protection principles and standards and to define community law;
- To implement the undertakings of the French government concerning nuclear safety and radiation protection, in particular within the framework of international agreements.

These objectives are pursued within the framework of bilateral agreements, but also through ASN participation in the work coordinated by international bodies such as the International Atomic Energy Agency (IAEA), the Organisation for Economic Cooperation and Development (OECD) and the European Union, as well as that being done by the nuclear regulators' associations.

Congresses and conferences are also prime opportunities for exchanges, in which the ASN presents its approaches and its practices.

In order to meet these goals, the ASN calls on the expertise of technical support organisations whenever necessary. The Institute for Radiation Protection and Nuclear Safety is the leading organisation of this type.

2 INTERNATIONAL AGREEMENTS

In the aftermath of the Chernobyl accident (26 April 1986), the international community negotiated a number of conventions designed to prevent accidents linked to the use of nuclear power and mitigate their consequences should they occur. These conventions are based on the principle of a voluntary commitment on the part of the States, who retain sole responsibility for the installations placed under their jurisdiction.

Two conventions deal with the prevention of nuclear accidents (Convention on Nuclear Safety and Joint Convention on the Safety of Spent Fuel Management and the Safety of Radioactive Waste Management), while two others deal with management of their consequences (Convention on early notification of a nuclear accident and Convention on assistance in the case of a nuclear accident or radiological emergency). France is a contracting party to these four conventions. The IAEA (see point 3|1 below) is the depositary of these conventions and provides the relevant secretarial services.

2 | 1

The Convention on Nuclear Safety

The Convention on Nuclear Safety concerns civil nuclear power reactors. France signed it on 20 September 1994 (the first day on which it was open for signature at the IAEA's General Conference). The convention came into force on 24 October 1996. At the end of 2005, it had been ratified by 56 States (since March 2005, this includes all countries in possession of nuclear power reactors).

In ratifying the convention, the contracting parties agree to submit a report describing how they apply the fundamental principles of safety and good safety practices, which are the subject of the various articles of the convention. The reports from the contracting parties are examined during a review meeting at which each party may ask questions to the others.

The first two review meetings were held in April 1999 and April 2002. The third contracting party meeting was held at the IAEA headquarters in Vienna from 11 to 22 April 2005. As at the previous meetings, the ASN was in charge of coordinating the French national report and played an active role in the meeting.

This third meeting was a step forward in relation to the meetings of 1999 and 2002, as each party had learned the lessons of the first exercises. The contracting parties took advantage of prior experience to present the nuclear safety situation in their countries with greater openness and transparency. Among the most significant points were the call by several of the leading nuclear countries (including France) for IRRRT (Integrated Regulatory Review Team) missions to assess their safety reference system and regulatory practices (see point 3|1 and IRRRT sheet), the importance attributed to work on harmonising the regulatory approaches within WENRA and the desire to preserve safety levels in a context of economic deregulation.

Now that the Convention has been ratified by India, the 2008 meeting will for the first time see all countries operating nuclear power reactors compare their safety practices. Consideration is to be given to enhancing the independency and transparency of the nuclear safety authorities.

2 | 2

The Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management

The “Joint Convention”, as it is often called, is the counterpart of the Convention on Nuclear Safety for spent fuel and radioactive waste management facilities. France signed it on 29 September 1997 (the first day it was open for signature at the IAEA’s General Conference). The Joint Convention came into force on 18 June 2001. At the end of 2005, it had been ratified or approved by 34 States (Brazil, People’s Republic of China, India, Italy, the Russian Federation, as well as many countries in which radioactive waste originates from medical, industrial or research activities, have not yet adopted it).

One key activity by the ASN in 2005 was to coordinate preparation of the French report for the second review meeting, to be held in Vienna from 15 to 24 May 2006. Like the French reports for the Convention on Nuclear Safety, this report contains contributions from the various French government departments concerned, as well as the operators involved in spent fuel and radioactive waste management. As France had promised, this report also deals with spent fuel reprocessing activities.

The French and English versions of this report were sent to the IAEA, the Joint Convention depositary, in October 2005.

The Director General of the ASN will chair the second review meeting.

2 | 3

The Convention on early notification of a nuclear accident

The Convention on early notification of a nuclear accident came into force in October 1986, 6 months after the Chernobyl accident and at the end of 2005, it had been ratified by 92 States. The contracting parties agree to inform the international community as rapidly as possible of any accident leading to uncontrolled release into the environment of radioactive material likely to affect a neighbouring State. A system of communication between States is therefore coordinated by the IAEA and regular drills are held among the contracting parties. The ASN is the competent national authority for France.

2 | 4

Convention on assistance in the case of a nuclear accident or radiological emergency

The Convention on assistance in the case of a nuclear accident or radiological emergency came into force in February 1987 and at the end of 2005, it had been ratified by 89 States. Its purpose is to facilitate cooperation between countries if one of them were to be affected by an accident with radiological consequences. This Convention has already been used on several occasions for accidents due to abandoned radioactive sources. Within this context, France’s specialised services have already taken charge of treating irradiated victims. The ASN is the competent national authority for France.

Other conventions related to nuclear safety

Other international conventions, the scope of which does not fall within the remit of the ASN, may be linked to nuclear safety.

This is particularly the case with the Convention on the physical protection of nuclear material, the aim of which is to reinforce protection against malicious acts and the unlawful use of nuclear materials. This Convention, which came into force in February 1987, had by the end of August 2005 been ratified by 105 States, including France.

Additional information on these conventions may be obtained from the IAEA's website: www.nsiaea.org/conventions/.

3 MULTILATERAL RELATIONS

The International Atomic Energy Agency (IAEA)

The IAEA is an United Nations organisation, which comprises 137 Member States. With regard to the area of competence of the ASN, the activities of the IAEA primarily consist in:

- organising discussion groups at different levels and preparing texts known as "Safety Standards", describing safety principles and practices which can then be used by Member States as a basis for national regulations. Since the beginning of 1996, this activity has been supervised by the CSS (Commission on Safety Standards), comprising senior representatives of the regulatory authorities of twenty Member States, tasked with proposing standards to the Director General of the Agency. France is represented on this Commission by the Director General of the ASN, who has chaired the Commission since the beginning of 2005, and by one of his deputies. This commission co-ordinates the activities of four committees entrusted with supervising the drafting of documents in four areas: NUSSC (NUclear Safety Standards Committee) for reactor safety, RASSC (RAdiation Safety Standards Committee) for radiation protection, TRANSSC (TRANsport Safety Standards Committee) for the safe transport of radioactive materials and WASSC (WASte Safety Standards Committee) for safe radioactive waste management. France is represented on all these committees. It also takes part in the technical groups which draft these documents.

These "Safety Standards", approved by the CSS and published under the responsibility of the Director General of the IAEA, comprise three levels of documents: Safety Fundamentals, Safety Requirements and Safety Guides. At the end of 2005, 64 revised safety standards had been published, 4 others have been approved and another 37 standards are currently being drafted or revised;

- setting up "services" made available to Member States and designed to give them opinions on specific safety-related aspects. This category includes the following missions: OSART (Operational Safety Review Team), IRRRT (Integrated Regulatory Review Team), PROSPER (Peer Review of the effectiveness of experience feedback system), TRANSAS (TRANsport Safety Appraisal Service), RASSIA (Radiation Safety and Security Infrastructure Appraisal).

In 2005, an OSART mission took place in May at the Le Blayais plant. A preparatory OSART mission went to the Saint-Laurent-des-Eaux nuclear power plant in December. The reports on all the OSART missions conducted in France are available in their original language, English, on the ASN's website, www.asn.gouv.fr.



A.C. Lacoste (centre) chairs the 17th meeting of the CSS (Commission on Safety Standards) at IAEA headquarters in Vienna, from 6 to 8 June 2005.

In July, France asked for an IRRT mission which, in November 2006, will require the ASN to submit its nuclear safety and radiation protection reference system and regulatory practices to an external peer review.

-harmonisation of communication tools. The French proposal of a radiation protection events classification scale led to intense international debate aimed at improving the international nuclear events scale (INES).

In the past, the ASN played a central role in establishing the INES scale. It also played an active role in drafting the scale for classifying radioactive material transport incidents. France is one of the leading users of the INES scale when communicating about events occurring in its basic nuclear installations (BNI) and radioactive material transports.

Since 2002, the ASN has been looking to develop a communication tool for dealing with radiation protection incidents. The existing INES scale was felt to be insufficient for communications dealing with exposure to ionising radiation, as its radiation protection classification criterion did not refer to the radiological risk, which is the basis of the current regulations. France therefore rekindled the international debate with a view to adding a radiation protection criterion to the INES scale so as to link the radiation exposure dose received to the radiation protection incident or accident gravity index.

The French proposal led to trials in the Member States of the International Atomic Energy Agency (IAEA) of a new part of the INES scale concerning radiation protection incidents, which takes account of radioactive sources and shipments of radioactive materials. This new part, which includes the principle of the relationship between the radiological risk and the seriousness of the event, has been applicable in France since 1 January 2005 on an experimental basis. Initially, France limited application of this new scale to BNIs and to transport. Broader application to medical, industrial and research facilities will then be envisaged.

3 | 2

The OECD's Nuclear Energy Agency (NEA)

The NEA, set up in 1958, comprises all the OECD States, except for New Zealand and Poland, or 29 countries. Its main objective is to promote co-operation between the governments of Member States for the development of nuclear energy as a reliable and environmentally and economically acceptable energy source.

Within the NEA, the ASN takes part in the activities of the Committee on Nuclear Regulatory Activities (CNRA). During its two annual meetings, the CNRA in particular discussed the impact of experience feedback on regulatory actions and the preconditions for safety harmonisation work for new reactors.

The ASN also takes part in the work of the Radioactive Waste Management Committee (RWMC) which brings together the nuclear safety authorities and organisations responsible for waste management.

In the field of radiation protection, the ASN continued its participation in the Committee on Radiation Protection and Public Health (CRPPH).

3 | 3

The United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR)

The United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) was created in 1955. It examines all scientific data on radiation sources and the risks they represent for the environment and for health. The reports published by this scientific body, which constitute the international reference, cover subjects such as the hereditary effects of ionising radiation and the consequences of the Chernobyl accident.

This activity is supervised by the annual meeting of the national representations of the Member States, comprising high-level experts, and at which the ASN is represented.

3 | 4

The European Union

3 | 4 | 1

The European Commission's working groups

Regular contacts with the European Commission (Directorate General for Transport and Energy - DG/TREN in particular) are a means of reviewing progress and upcoming regulatory work in the field of radiation protection: in particular transposition of directives and the workings of the Euratom Treaty committees.

The ASN plays an active part in the work of the Euratom Treaty committees and expert groups:

- scientific and technical committee (STC);
- article 31 experts group (basic radiation protection standards);
- article 35 experts group (checking and monitoring radioactivity in the environment);
- article 36 experts group (information concerning supervision of radioactivity in the environment);
- article 37 experts group (notifications concerning radioactive effluent discharges).

The ASN also takes part in working groups coordinated by the European Commission and designed to compare certain safety practices in the Member States of the European Union:

- standing working group for the safe transport of radioactive materials;
- advisory committee for radioactive waste programme management;
- CONCERT (Concertation on European Regulatory Tasks) and NRWG (Nuclear Regulators' Working Group) groups, which should be merged into a new group called the ENREG (European Nuclear Regulators Expert Group).

3 | 4 | 2

The “Nuclear action plan”

On 30 January 2003, the European Commission adopted two proposed directives, one defining general principles of the safety of nuclear facilities, the other the management of spent fuel and radioactive waste. However, it was impossible for the Council of the European Union to adopt these two texts, commonly referred to as the “nuclear package” owing to the opposition by several Member States of the Union, who felt that texts such as resolutions or recommendations, which are not legally binding, would be preferable.

In June 2004, the Council of the European Union adopted conclusions finding that there was no consensus on this subject and it recommended continuing with the work aimed at achieving progress in nuclear safety harmonisation, similar to the work done by WENRA (see point 3|5|2 below). The Presidency of the Council therefore accepted and agreed to implement a plan of action proposed by the Council's Atomic Questions Group during its meeting of 27 October 2004.

The ASN believes a move towards harmonisation of nuclear safety principles and standards is required and thus plays an active part in the activities of the ad hoc group created for implementation of this European action plan. With a view to achieving greater efficiency, three sub-groups were set up, each of which is responsible for dealing with a particular topic: safety of nuclear installations (SG n° 1), safety of spent fuel and radioactive waste management (SG n° 2) and decommissioning fund (SG n° 3). France is represented in each of the sub-groups and the ASN more particularly participates in SG n° 1 and has the role of chairman and secretary of SG n° 2. The *ad hoc* group is required to submit a report by the end of 2006.

3 | 4 | 3

Assistance to the Eastern European Countries

a) the aim of the assistance programmes

The July 1992 G7 summit in Munich defined three priority areas for nuclear safety assistance to the countries of central and eastern Europe and the newly independent states which were formerly part of the Soviet Union:

- to contribute to improving the operating safety of existing reactors;
- to provide funding for short-term improvements to the least safe reactors;
- to improve safety supervision organisation, making a clear distinction between the responsibilities of the different entities concerned and reinforcing the role and scope of local nuclear safety authorities.

Assistance programmes were set up by the European Commission to achieve these goals. They constitute the nuclear part of the PHARE programme (which is more particularly aimed at the countries applying for membership of the Union) and the TACIS programme (intended for countries of the former Soviet Union).

The European Commission set up the Regulatory Assistance Management Group (RAMG), comprising the nuclear safety and radiation protection authorities from the countries of the European

Union, to advise it on assistance requests from the eastern European countries. The PHARE programmes are coming to an end for the ten countries which entered the European Union on 1 May 2004, but are continuing for the two candidates for whom entry is planned for 1 January 2007: Bulgaria and Romania.

b) ASN participation in the assistance programmes

The European Commission's PHARE and TACIS programmes

The nuclear part of these programmes covers the three areas of assistance defined by the G7, but the nuclear safety authorities of the European Union only participate directly in the last one, by providing their joint assistance to their counterparts in the eastern European countries.

The ASN is pilot for the TACIS programmes in Ukraine and Kazakhstan. In 2005, on behalf of the European Commission, it carried out two missions to assess the impact of the TACIS programmes on improvements to nuclear safety in Ukraine and to evaluate the assistance needs of the Ukrainian nuclear safety authorities. February 2005 saw the final meeting of the 5th regulatory assistance project in Ukraine (UK/RA/05) which lasted 15 months. The ASN also worked on preparing the 6th project, which will run until mid-2008.

The ASN is taking part in the 6th TACIS regulatory assistance programme for the Russian Federation (RF/RA/06) which should last until mid-2007. It in particular advises the Russian nuclear safety authority on how to revise nuclear regulations to bring them into conformity with the Federal law on the technical regulatory process.

Finally, 2005 saw the end of the 3rd PHARE project for assistance to Hungary (HU/RA/03) in which the ASN had taken part with respect to radiological emergency situations. The ASN also contributed to a PHARE project in Bulgaria to reduce the number of radioactive sources for which there was a risk of a lack of regulatory supervision.

Another area of cooperation with the Russian Federation is to help this country nuclear safety authority to construct the regulatory framework necessary to authorise the nuclear facilities that need to be built for elimination of the military plutonium declared as surplus to Russian defence needs.

These actions are supplemented by other international technical assistance programmes in accordance with the resolutions adopted by the G7 to improve nuclear safety in the eastern European countries, and which are financed by contributions from donor States and the European Union.

Other international technical assistance programmes

The ASN is a participant in the expert groups reporting to the EBRD (European Bank for Reconstruction and Development), responsible for managing multilateral funds to finance the following actions:

- decommissioning of nuclear reactors in Bulgaria (Kozloduy 1 to 4), Lithuania (Ignalina 1 & 2), Slovakia (Bohunice V1 1 & 2) and Ukraine (Chernobyl 1 & 3);
- installation of a new sarcophagus on Chernobyl unit 4, in which the April 1986 disaster occurred;
- dismantling of decommissioned Russian nuclear submarines and radiological clean-up of the Barents sea military bases.

Finally, with regard to nuclear safety, the ASN advises the French delegation to the Nuclear Safety and Security Group (NSSG) of the G8 (G7 + Russian Federation). It in particular took part in the meetings of this group in London in March and May 2005.

c) ASN's position

The ASN observes that significant progress has been achieved in the three priority areas defined by the G7:

- improvements have been made to in-service safety of reactors;
- some States (Bulgaria, Lithuania, Slovakia, Ukraine) have committed to final shutdown of the least safe reactors and have already shut some down in accordance with these commitments;
- the role and remit of the nuclear safety authorities have been reinforced and clarified in the European Union accession states. This is apparent in the reports presented by the eastern European countries during the Convention on Nuclear Safety review meeting in April 2005.

The safety authorities of the States which joined the Union on 1 May 2004 have therefore reached a level which should dispense with the need for further assistance.

However, in the states of the ex-USSR, this key objective will not be reached for some time, owing to the profound changes it implies: adaptation of the structures of the State itself, change in mentality to admit the independence of the nuclear safety authorities and thus underpin their credibility, reinforce their status and their means.

3 | 5

The Nuclear Regulators Associations

3 | 5 | 1

The International Nuclear Regulators' Association (INRA)

INRA, which comprises the nuclear safety authorities of Canada, France, Germany, Japan, Spain, Sweden, the United Kingdom and the United States, met twice in 2005 under the German chairmanship of Mr. Wolfgang Renneberg (Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit - BMU, Federal Ministry for the Environment, Protection of Nature and Nuclear Safety), in Bonn in June and in Munich in September.

Apart from presenting the main events in their respective countries, the INRA members discussed the safety consequences of installation ageing, the lessons to be learned from the third meeting of the contracting parties to the Convention on Nuclear Safety (see point 2|1 above), cooperation in the licensing process (for example licensing by the Finnish authority of the Franco-German designed EPR reactor) and the notion of the independence of the nuclear safety authority.

The INRA members appointed the Director General of the ASN chairman of the association for 2006.

3 | 5 | 2

The Western European Nuclear Regulators Association (WENRA)

The WENRA association was officially created in February 1999, the founder members being the heads of the nuclear safety authorities of Belgium, Finland, France, Germany, Italy, Netherlands, Spain, Sweden, Switzerland and the United Kingdom. The Director General of the ASN was nominated first Chairman for a period of two years and his term of office was extended in 2001 for a further period of two years. Following their March 2003 meeting, the WENRA members appointed Mrs Judith Melin (Sweden) as chairwoman. During this same meeting, they decided to admit to the association the regulators of the seven "nuclear" countries (operating at least one nuclear reactor to produce electricity) who were at that time applying for membership of the European Union: Bulgaria, Czech Republic, Hungary, Lithuania, Romania, Slovakia and Slovenia.

The objectives defined by the WENRA members when the association was created are:

- to provide the European Union with an independent capability for examining nuclear safety and regulations problems in the countries applying for membership of the European Union;
- to develop a common approach to nuclear safety and regulation, in particular within the European Union.

With regard to the first task, WENRA in October 2000 published a revised version of its report on safety in the seven nuclear countries applying for membership of the European Union. This report contributed to the position adopted by the Council of the European Union and the recommendations sent by the Commission to these countries to enable them to attain the high level of nuclear safety required prior to their acceptance into the Union.

With regard to the second task it set for itself (harmonisation of national approaches to safety), WENRA created two working groups:

- one (under the control of the British nuclear safety authority) for nuclear power plants (see chapter 12);
- the other (under the control of the ASN - until 2004 - and then the Czech safety authority) for management of spent fuel and radioactive waste, plus dismantling operations (see chapter 16).

In each of these fields, the groups began by defining the reference levels for each technical topic, based on the IAEA's most recent standards and on the most demanding approaches employed within the European Union (and therefore, for all practical purposes, in the world).

As an initial pilot study (the conclusions of which are available on the ASN's website) into harmonisation of nuclear reactor safety in the founding countries had demonstrated the relevance and effectiveness of the methodology adopted, a process to assess national practices in relation to these reference levels was then developed.

During its two annual plenary meetings, WENRA is kept informed of the progress of the groups work and determines future guidelines for the groups. Thus, in 2005, during their last meeting in Stockholm (7 - 9 December), in application of the commitments made during the previous meetings - particularly the previous meeting of 15-16 March at The Hague, Netherlands) the WENRA members were able to examine the conclusions of the working groups, presenting the results of the national practices assessment process. For nuclear power reactors, these results indicated that the harmonisation work under way for the past three years was well advanced, with numerous reference levels being defined. For spent fuel and radioactive waste management, this work is less well advanced and will be continued.

The next steps are as follows:

- the conclusions of the working groups will be made public during the course of a seminar to be held in Brussels on 9 February 2006;
- before the end of 2006, each member will present an action plan, that aims to bring its national practices into compliance with the defined reference levels for any technical area in which there are identified differences;
- national practices must be harmonised by 2010.

ASN's position

This work as a whole confirms WENRA's ability to carry out wide-ranging, bottom-up nuclear safety harmonisation work (directives, action plan, etc.).

INRA and WENRA, which were created at the initiative of the Director General of the ASN, also constitute unique and irreplaceable opportunities for free and informal discussions between nuclear safety authority heads.

3 | 5 | 3

The Association of nuclear regulators of countries operating French designed nuclear power plants (FRAREG)

The FRAREG (FRAmatome REGulators) association was created in May 2000 at the inaugural meeting held in Cape Town at the invitation of the South African nuclear safety authority. It comprises the nuclear safety authorities of Belgium, France, the People's Republic of China, South Africa and South Korea.

Its mandate is to facilitate transfer of experience gained from supervision of the reactors designed and/or built by the same supplier and to enable the nuclear safety authorities to compare the methods they use to handle generic problems and evaluate the level of safety of the Framatome type reactors they supervise.

The 4th meeting was held in Taejeon, South Korea on 21 and 22 June. This meeting was organised by the Korean Institute for Nuclear Safety (KINS), which is the technical support organisation for the Korean safety authority (Ministry Of Science and Technology - MOST). The debates in particular covered incident analysis and probabilistic safety studies. The Chinese nuclear safety authority was unable to take part in this meeting.



Participants at the 4th FRAREG meeting (Teajon, South Korea, 21 and 22 June 2005).

4 BILATERAL RELATIONS

The ASN works with many countries within the framework of bilateral agreements signed at various levels:

- governmental agreements (Belgium, Germany, Luxembourg, Switzerland);
- administrative arrangements between the ASN and its counterparts (about twenty).

4 | 1

Staff exchanges between the ASN and its foreign counterparts

One way for improving knowledge of the actual workings of foreign nuclear safety and radiation protection authorities (and learn lessons for operation of the ASN) is to develop the system of staff exchanges.

The nuclear safety and radiation protection authorities concerned so far have been those of Belgium, Canada, Germany, Japan, People's Republic of China, Spain, Switzerland, United Kingdom and United States.

Provision is made for several types of exchange:

- *very short-term actions (one to two days)* offering our counterparts cross-inspections and joint emergency exercises: they involve inviting foreign inspectors to take part in inspections or emergency exercises performed by inspectors from the country concerned.

In Germany for instance, joint inspections were organised in the hospital sector. The DSNRs of Orleans and Douai also maintain regular contacts with the nuclear installations inspectorate of the Lower Saxony region. A visit by three ASN inspectors was organised from 16 to 19 August 2005 to the KKK reactor operated by E.ON in Lower Saxony. The French inspectors collected information on the supervision procedures employed by the Lower Saxony safety authority and the fire protection and staff radiation protection measures implemented by the operator.

A team of Spanish radiation protection inspectors came to France from 14 to 17 June 2005 to visit the nuclear medicine, brachytherapy and radiotherapy departments at the Institut Bergonié Centre Régional de Lutte Contre Le Cancer (CRLCC) cancer unit in Bordeaux. In Spain, ASN teams took part in a radiation protection inspection in the Asco plant (19 to 21 October 2005), as well as an inspection of a research laboratory equipped with a cyclotron and an inspection of a gammagraphy installation on a worksite (Madrid, from 16 to 18 November).

In the United Kingdom, an ASN team comprising DSNR inspectors from Douai and Châlons-en-Champagne, took part in an inspection from 12 to 13 April 2005 of the Sizewell B site (1200 MWe, 4-loop pressurised water reactor), enabling them to observe the practices of their British colleagues during a unit outage and how the site operator manages contractors working on the site. Joint inspections were also carried out in the spent fuel reprocessing plants at La Hague and Sellafield.

Joint industrial radiology inspections were organised with our Swiss and British counterparts.

In the United States, three ASN inspectors took part in a training course given for radiation protection inspectors by the NRC from 21 to 31 March 2005. This course was an opportunity to compare French regulatory requirements and training reference systems with those in use in the United States.

- *short-term assignments (3 weeks to 3 months)*, aimed at studying a specific technical topic.

There were no missions of this type in 2005;

- *long-term exchanges (up to 3 years)* in order to take part in the working of the foreign nuclear safety and radiation protection authority to gain an in-depth knowledge of it.

This type of exchange must obviously be reciprocal. Therefore:

- since 1997, a number of ASN engineers have been sent on assignment to the British nuclear safety authority. The latest one, in place since the summer of 2002, returned to France in the summer of

2005. Similarly, an engineer joined the Spanish nuclear safety authority in early 2000 and stayed there until mid-2003;

- an engineer from the British nuclear safety authority joined the ASN from February 2001 to August 2002 and he was replaced by another engineer in January 2003. Finally, an engineer from the Spanish nuclear safety authority joined the ASN from September 2000 to June 2001 and his replacement took over from September 2002 to mid-2004.

These exchanges were an opportunity to enhance French practices, for example with the introduction of review inspections in 2000. The ASN has been in charge of radiation protection supervision since February 2002 and has put these exchanges to good use in speeding up development of its own radiation protection system for the industrial and medical field, using proven methods and good practices observed at its counterparts.

Furthermore, the experience acquired by the ASN and its counterparts shows that inspector exchange programmes are an important factor in energizing bilateral relations between nuclear safety and radiation protection authorities.

4 | 2

Bilateral relations between the ASN and its foreign counterparts

The countries and safety authorities with which the ASN had the most frequent contact in 2005 included the following:

South Africa

Bilateral exchanges between the National Nuclear Regulator (NNR) and the ASN were developed further through actions decided on at the previous management committee meeting in 2004.

The research reactors working group held its first meeting in South Africa in May. The subsequent exchanges mainly dealt with conversion of very highly enriched uranium (HEU) fuel to a low enriched uranium (LEU) fuel, an operation which is in progress in the South African SAFARI 1 reactor.

A South African delegation visited France in June 2005 to observe an emergency exercise and discuss emergency situation management.

The NNR-ASN management committee met in Paris on 20 and 21 September 2005. The South African delegation then visited the ANDRA sites in eastern France: Bure underground laboratory, Aube repository and VLL waste repository in Morvilliers.

Germany

In 2005, the plenary session of the Franco-German Commission on nuclear installation safety issues (Deutsch-Französische Kommission für Fragen der Sicherheit kerntechnischer Einrichtungen - DFK) could not be held. This meeting will therefore take place at the beginning of 2006. The DFK working groups continued their work by exchanging information on safety and radiation protection aspects of reactors located near national borders and by improving exchanges of information between the various organisations concerned, particularly in the event of an incident or accident. Exchanges concerning radiation protection were continued.

Argentina

In 2005, the ASN and the Argentinian regulator (Autoridad Regulatoria Nuclear) continued their cooperation in the field of radiobiological scientific watch, resulting in the publication of:
- a scientific review entitled "Genetic and epigenetic features in radiation sensitivity", published in two parts in the European Journal of Nuclear Medicine in February and March 2005;

-an UNSCEAR document (annual meeting from 26 to 30 September 2005) entitled "Ionising radiation and the immune system".

Belgium

ASN relations with the Belgian Federal Agency for Nuclear Control (FANC) covers a number of fields, particularly safety, waste management, transport and radiation protection. In 2005, cross-inspections continued in both nuclear and industrial/medical fields.

Joint work to consider a geological disposal safety doctrine led to a first European seminar in November 2004. A second European seminar was organised on 20 May 2005 and concluded with the creation of a working group for European harmonisation of regulations concerning geological disposal (see chapter 16).

Canada

Exchanges primarily concerned the management of emergency situations and the safety of new reactors. In March, the ASN received a delegation from the CNSC (Canadian Nuclear Safety Commission) to present how France manages nuclear emergencies and the ASN's involvement. In December, the ASN received a Canadian delegation, to present the safety of the EPR reactor and the licensing procedures.

On 27 September, the Director General of the ASN and his Canadian counterpart signed a new cooperative administrative arrangement in Vienna.

People's Republic of China

In 2005, the ASN-NNSA (Chinese National Nuclear Safety Administration) management committee, which met in Beijing in June, reviewed the actions completed and defined a new programme, which in particular includes assignment of a Chinese inspector to France.

The most noteworthy actions in 2005 were the March seminar on the safety of the EPR reactor and the continued inspector visits. French inspectors went to China and Chinese inspectors were received in France.

Spain

In addition to the joint inspections mentioned earlier, exchanges took place in 2005 with the nuclear safety council (Consejo de Seguridad Nuclear) in particular concerning the hydrostatic tests to be conducted on plant SEC (essential service water) systems.

United States

From 8 to 11 March, the Director General of the ASN took a French delegation to participate in the annual public conference by the American Nuclear Regulatory Commission (NRC). The Regulatory Information Conference (RIC) was held in Rockville (near the NRC headquarters) and attracted 1400 American and foreign participants (24 countries represented). The programme of the 2005 conference comprised sessions dedicated to research and development concerning reactor safety, probabilistic safety studies, materials ageing and new reactor concepts.

On the occasion of the RIC conference, the Director General of the ASN took part in a meeting organised by the NRC Chairman concerning international regulations on fourth-generation reactor design. He in particular warned his counterparts of the risk of prematurely freezing the safety requirements for reactors which will still be in service at the beginning of the next century.

From 23 to 25 May 2005, the ASN organised technical meetings with its counterpart, the NRC, as well as a visit to La Hague to look at spent fuel handling systems safety, in the light of the possible creation of the Yucca Mountain repository.

The annual bilateral meeting with the NRC office in charge of reactor safety (Office of Nuclear Reactor Regulation - NRR) was held on 16 and 17 June, for discussions on recent topical subjects and the respective nuclear safety action priorities.

Finland

In 2005, relations with the Finnish nuclear safety and radiation protection authority (Säteilyturvakeskus - STUK) were once again dominated by cooperation on the EPR project, as Finland is the first country to build a reactor of this type (see chapter 12). Relations also concerned waste management, a subject which also involves cooperation with the Swedish authorities.

India

The 5th Franco-Indian nuclear safety dialogue session was held in India from 24 to 26 October 2005, under the chairmanship of the Director General of the ASN. The meetings in Bombay concluded with renewal of the administrative arrangement signed in July 2001 between the ASN and its counterpart AERB (Atomic Energy Regulatory Board). A programme of future exchanges was defined, including meetings in 2006 on the safety of fast neutron reactors and a seminar on the safety of the EPR reactor.

The French delegation was able to visit the nuclear site at Kalpakkam, near Madras, on the eastern coast of the country, which had been affected by the December 2004 tsunami.

Ireland

On 4 August 2005, the ASN signed an administrative arrangement with the Radiological Protection Institute of Ireland (RPII). This bilateral action is confirmation of the ASN's desire to intensify its international relations in the field of radiation protection and to diversify them into countries which do not actually use nuclear energy.

Japan

2005 was marked by a sustained high level of information exchanges with Japan and there is strong demand for cooperation with France. The Japanese authorities hope to cooperate with the French nuclear safety authority, and their technical support organisations with the IRSN.

This in particular concerns the safety of the fuel cycle (MOX fuel manufacturing plant and spent fuel reprocessing facilities at Rokkasho-Mura), waste management, nuclear power plants (operator certification, maintenance, installation conformity examination, periodic safety reviews of existing facilities and implementation of new safety rules) as well as radiation protection.

The ASN, and its technical support organisation, the IRSN, took part in the international technical seminar organised in Tokyo from 10 to 12 May by the Japanese Nuclear Safety Commission (NSC) concerning the applications derived from the use of probabilistic safety assessments in the regulations (Risk-Informed Regulation). The ASN on this occasion recalled that a "risk-informed" type of regulation went far beyond simply using the results of probabilistic safety assessments, which themselves require a solid data underpinning and in particular include safety culture, human and organisational factors.

The exchanges also covered inspector training and the regulations drafting process.

United Kingdom

The annual meeting by the heads of the French and British nuclear safety authorities was held in France on 20 and 21 June 2005. In addition to reviewing the main events that occurred during the year, this meeting was an opportunity for continued discussions concerning the safety problems involved in the dismantling of nuclear installations. The meeting was accompanied by a visit to the Chinon nuclear power plant, including a PWR in operation and a dismantled UNGG (natural uranium - graphite - gas) reactor.

Switzerland

The Franco-Swiss Commission met in Berne on 31 May 2005. The discussions concerned the safety of power reactors, radiation protection and waste management. For the first time, radiation protection was accorded equal status with reactor safety.

On 8 June, the Franco-Swiss Commission's Expert Group on nuclear emergency management met in Paris. This Group exchanges information on the emergency response organisation in the two countries and helps harmonise practices, in particular through joint participation in emergency exercises.

5 INTERNATIONAL CONFERENCES

ASN participation in international conferences offered opportunities for the exchange of extremely useful information concerning regulatory practices and the problems encountered in the field of nuclear safety, radioactive material transport, radioactive source safety, waste management and disposal and radiation protection.

Among these events, those organised by the ASN were as follows:

- the second European seminar (like the first one in Paris on 5 November 2004), organised on 20 May 2005 by the ASN and the Belgian Federal Agency for Nuclear Control (FANC) on the safety approach to waste disposal (see chapter 16), the aim of which is to initiate collaboration with a view to establishing "reference levels" for geological disposal of radioactive waste. The objective is to finalise these reference levels by 2010, after a "pilot study" designed to validate the feasibility of the project and define a working method;
- the NuPEER (Nuclear Pressure Equipment Expertise and Regulation) symposium, organised by the ASN in Dijon from 22 to 24 June 2005 and devoted to pressure vessel ageing in nuclear power plants. This symposium attracted nearly 120 participants from the nuclear safety authorities and expert bodies in 13 countries which possess nuclear power plants: Belgium, Czech Republic, Finland, France, Germany, Japan, Norway, Spain, Slovenia, Sweden, Switzerland, United States and United Kingdom. The IAEA, the NEA and the European Commission also took part in the discussions. The Director General of the ASN concluded the symposium by announcing the creation of an international information network, which will enable discussions on the subject to be continued and taken a stage further.

The organisation and follow-up of these events reflect the importance the ASN attaches to the safety issues related to:

- ageing of the nuclear power plant fleet;
- radioactive waste management.

Main French nuclear safety authority participation in international conferences in 2005

DATE	PLACE	SUBJECT
26 – 28 January	Tokyo (Japan)	Seminar on the effectiveness of safety inspections and management, organised by the IAEA and the OECD/NEA
8 – 11 March	Rockville (United States)	Regulatory Information Conference organised by the NRC
25 – 28 April	Kansas City (United States)	Conference of national radiation protection directors, organised by the NRC
10 – 12 May	Tokyo (Japan)	Risk-Informed Regulation seminar
19 – 20 May	Lucerne (Switzerland)	Task group on operating experience, organised by the OECD/NEA
20 May	Brussels (Belgium)	Second European seminar on “Elements of the Safety Approach related to Geological Disposal of Radioactive Waste”, organised by the ASN and the FANC
18 – 22 June	Toronto (Canada)	Annual Conference of the American Society of Nuclear Medicine
22 – 24 June	Dijon (France)	NuPEER (Nuclear Pressure Equipment Expertise and Regulation) symposium devoted to pressure vessel ageing in nuclear power plants, organised by the ASN
27 juin – 1 July	Bordeaux (France)	Conference on the safety and security of radioactive sources, organised by the IAEA
5 – 9 September	Vienna (Austria)	Conference on Chernobyl (“The Chernobyl heritage: health, environmental and socio-economic consequences) organised by the IAEA
26 – 30 September	Vienna (Austria)	Annual UNSCEAR meeting
3 – 7 October	Tokyo (Japan)	Conference on the safety of radioactive waste disposal, organised by the IAEA
25 – 26 October	Stockholm (Sweden)	Workshop on Human Resources Management in Safety and Regulation, organised by the OECD/NEA
30 November – 2 December	Vienne (Austria)	Conference on the operational safety of nuclear installations, organised by the IAEA

6 OUTLOOK

International relations are important activities for the ASN and are an efficient way of taking nuclear safety and radiation protection forward both in France and abroad.

They enable the ASN and its counterparts to become more familiar with and gain a clearer understanding of their reciprocal operation and the problems that beset them. They also enable assistance to be given to countries that wish to develop or improve their nuclear safety and radiation protection authorities.

They are also the driving force behind the necessary harmonisation of safety and radiation protection principles and standards.

ASN's goal in this field is to develop a common approach to nuclear safety, but without in any way compromising on the fundamental principle: nuclear safety must remain the number one priority. This is the purpose of the work by WENRA, and the public presentation of the results in February 2006 will be a key step towards harmonisation of national practices scheduled for 2010.

This is also the reason for the ASN's active participation in implementing the European Union's nuclear action plan.

WENRA and INRA are also incomparable opportunities for free and informal discussions between heads of nuclear safety authorities. The Director General of the ASN, who was the original creator of these two associations, will chair the INRA in 2006.

The ASN, whose proposals are behind the new part of the INES scale applicable to radiation protection incidents will, under the aegis of the IAEA, be organising an international meeting in March 2006 on the experience feedback from its implementation. The results could lead to more extensive application to medical, industrial or research facilities being envisaged.

The International Radiation Protection Association (IRPA) congress scheduled for Paris in May 2006 and participation in the organisation of the world nuclear medicine conference (October 2006, Seoul, South Korea) clearly reflect the importance the ASN attaches to radiation protection.

The ASN will be further reinforcing its international actions in this field through a major restructuring effort. Bilateral frameworks are few and far between and "multi-bilateral" frameworks (associations of radiation protection authority heads) still need to be created. This will lead the ASN to expand the area of the existing arrangements or to sign new arrangements, depending on the organisation of the countries with which it wishes to develop cooperation, as radiation protection is not only an issue in States operating nuclear installations, but is relevant in all countries with modern medical, scientific or industrial activities.

Finally, the ASN attaches prime importance to evaluation of its actions by its foreign peers. This is why:

- on the one hand it regularly asks the IAEA for OSART missions (nuclear power plant operational safety review): in 2011, all EDF plants will have undergone an OSART review;
- on the other, and this is the first time that a safety authority from a major nuclear country has done so, it requested an IRRRT mission for a November 2006 assessment of its nuclear safety and radiation protection reference system and regulatory practices.

To conclude, the ASN will continue to act as one of the leading safety authorities on the international stage, making sure that it shares its work with its peers and that nuclear safety and radiation protection principles are implemented worldwide. In order to consolidate its reference status, the ASN will in particular continue its actions so that it can:

- fully assume its responsibilities in international radiation protection regulation;
- promote its organisation and practices for supervision of nuclear safety and radiation protection;
- submit to external assessment by its peers.