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he ASN (Nuclear safety authority) considers that 2005 was a satisfactory year in terms of nuclear safety and radiation protection. However, further progress can and must be made.

The safety of EDF nuclear reactors is satisfactory overall even though progress is needed in terms of operational method. The ASN has mixed views on the way the CEA operates its facilities and fulfils its commitments. The ASN continues to have a positive view on the strict method and purpose with which COGEMA operates its facilities at the site at La Hague. In the medical field, the ASN finds that the consideration of radiation protection is satisfactory overall in radiotherapy and nuclear medicine. The ASN notes some improvements in the radiology field, though further efforts must be made to better integrate the requirements of radiation protection into the management of other medical risks. In industry, the ASN considers that efforts made in radiation protection training and awareness-raising should be pursued and notes that considerable efforts are required on the part of gammagraphy users.

In 2005, the ASN pursued its significant investment in radiation protection and reaffirms its ambition to become as efficient in radiation protection as it is in nuclear safety as of 2009. 2005 was a year of great progress for the ASN as it consolidated its organisation and working methods, in accordance with the 2005-2007 strategic plan it set for itself. The ASN's continued progress in the field of radiation protection has given rise to various new regulations to improve the legislative and regulatory framework in this area. The ASN plans to step up its efforts to ensure better mon-

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itoring of patient exposure to ionizing radiation and to provide better management of radon-related risks, particularly in housing. Fully aware that its newfound power in this area requires outside evaluation, the ASN has asked the International Atomic Energy Agency (IAEA) to organise an IRRS (Integrated Regulatory Review Service) assignment consisting of a peer-conducted audit. The IAEA has confirmed that this audit will take place in November 2006. Another milestone was the announcement by the French President on January 5, 2006 of the creation of an independent authority, thus pursuing the ongoing development of the ASN.

2005 was marked by significant progress in the process of harmonising national nuclear safety policies. Indeed, the Western European Nuclear Regulators Association (WENRA) has finalised its reports on a common policy. These reports, to which the ASN made significant contributions, will be made public in February 2006. By 2010, each country must use these documents defining standard levels for nuclear safety to revise its technical regulations and practices in view of harmonisation. More generally, in the field of international relations, I would like the ASN to continue an active policy geared towards establishing itself as an international reference.

Against a backdrop of the preparation of a bill on management of radioactive materials and waste, to be presented to Parliament in March 2006, 2005 was a year of important milestones. These include firstly the publication in March of a report from the OPECST (Parliamentary Office for Scientific and Technology Choices Assessment), prepared by députés Mr Birraux and Mr Bataille. Secondly, at the Government's request, a public debate was held from September 2005 to January 2006 on the issue of radioactive waste management to provide better information to the French population. Lastly, the ASN has prepared and provided for public consultation a national plan for management of radioactive waste and reusable materials (PNGDR-MV) drawing on the efforts of a working group including waste producers and eliminators, administrative bodies, representatives of elected officials and environmental protection associations. These elements, in addition to the report submitted by the ASN to the Government on

February 1, 2006, will be taken into account in preparing the above-mentioned bill. In this report, the ASN specifies in particular that disposal in deep geological repositories is an essential management solution for high-level long-lived radioactive waste.

Finally, the ASN's operating context is changing. Thus in 2005 the French Government confirmed that the nuclear option would remain open until 2020 in accordance with law no. 2005-781 of July 13, 2005, setting the focus for energy policy. This law provides for construction of an EPR-type reactor. The plan to build a reactor in Flamanville (Manche region) was put to public debate between September 2005 and February 2006 as a necessary public information exercise before EDF can proceed with the administrative procedures prior to construction of the new nuclear plant. Moreover, on January 5, 2006, the French President announced the design of a fourth-generation nuclear reactor prototype. Another important factor in the nuclear field is EDF's capital opening. The ASN will make particular efforts to prevent any negative effects of these developments on nuclear safety and will ensure that EDF sets out adequate provisions to assume its responsibilities as operator until the full dismantling of its nuclear reactors.

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## **Control of nuclear facilities and transport of radioactive materials**

Operations in EDF nuclear reactors in 2005 were satisfactory overall and improvements were found in terms of radiation protection, environmental protection and supervision of service providers. However, the operating method improvement initiatives undertaken by EDF following the ASN's findings in 2004 must continue and will be closely monitored by the ASN in 2006. In 2005, the second ten-yearly visits to the 900-megawatt reactors continued, and will be completed in 2010. The 1300-megawatt reactor visits began in the spring and will continue until 2014. In early 2005, EDF implemented an internal authorisation process which is discussed hereafter,

particularly for restarting reactors following shut-downs with no significant maintenance. The smooth operation of these systems has been controlled by the ASN and their scope could be extended in 2006. Lastly, an anomaly that could impact the safety of 900-megawatt reactors in the event of accidental leaks on the primary cooling circuit has been ranked this year at level 2 on the INES scale (International nuclear event scale). It affects the back-up system pumps (RIS (safety injection system) and EAS (spray containment system) circuit pumps). Its discovery during bench testing emphasises the importance of periodical equipment compliance checks to guarantee satisfactory safety levels.

No significant events occurred this year in the nuclear facilities operated by the CEA. However, the ASN would like the CEA to take better account of nuclear safety and radiation protection priorities prior to making budget decisions and believes that it should develop its internal skills in evaluating safety of facilities. The ASN also considers that the CEA must make further progress in re-inspecting the safety of its facilities, both in preparation and in providing the ASN with more reliable forecasts on the future of facilities, as well as better observance of the ten-yearly re-inspections. Lastly, the CEA must fully implement the commitments made to the ASN, particularly in terms of projects for improving in old facilities safety.

Furthermore, as in previous years, we must mention the specific case of the CisBio International facilities which produce radio-elements for biomedical purposes on the Saclay site (Essonne region). The ASN has noted significant improvement in these facilities' operating method due to considerable investment by the Schering group, the owner of CisBio. Schering sold CisBio at the end of the year. The ASN will ensure that this sale has no negative impact on nuclear safety. Indeed, the ASN will only complete the handover of CEA's Saclay facilities to CisBio if the new owners undertake to continue the investment and reorganisation plan for the facilities.

In the research field, the Cadarache site (Bouches-du-Rhône region) has been chosen to host the ITER facility (International

Thermonuclear Experimental Reactor). Although the ASN is not particularly concerned about nuclear safety, it will monitor the ability of the international entity in charge of the project to fully assume its responsibilities as nuclear operator, without excessive protection under diplomatic immunity.

In terms of the nuclear fuel cycle, as in previous years, the ASN continues to have a positive view on the strict method and purpose with which COGEMA operates its facilities at the La Hague site. On this site, the ASN is paying particular attention to the recovery of old waste as well as the definitive closure and dismantling of the old workshops of the UP2-400 plant, for which COGEMA's commitments must be met as quickly as possible. The ASN has checked that the serious incident which occurred this year at the Thorp plant in Sellafield (UK) could not happen in La Hague. Moreover, the ASN is currently dealing with the request from AREVA for authorisation to build the Georges Besse II plant for enrichment via ultracentrifugation technology on the Tricastin site. The law authorising creation of this facility could be passed in early 2007.

With respect to nuclear facilities in general, the ASN is working towards implementation of an internal authorisation process. Which gives operators, for certain operations that do not jeopardise the facility's safety demonstrations, the responsibility for making their own decision without requesting authorisation from the ASN. The operator analyses the safety of the authorisations and keeps the ASN informed. This new procedure presents two advantages. On the one hand, it allows the ASN to focus its efforts on genuine safety challenges and on the other hand it makes operators responsible since they no longer rely on the ASN and its technical support to audit the quality of their requests. The system was initially implemented in CEA facilities and the scope of application has gradually been extended to other nuclear operators. Thus the restarting of EDF nuclear reactors following shutdowns with no significant maintenance is no longer subject to prior approval from the ASN.

Lastly, in terms of safety in radioactive material transport, there were no significant events in 2005. The ASN however acknowledges that while the number of contaminated irradiated fuel convoys is low, it is increasing slightly. The ASN will ensure that this increase is not due to a fall-off in EDF's efforts over the last few years in terms of cleanliness. Furthermore, the ASN has made efforts to implement the recommendations of the TranSAS audit (Transport Safety Appraisal Service) performed at its request by the IAEA in 2004. This resulted essentially in the existing practices being formalised. The ASN will use this experience of a peer-conducted audit to prepare for the IRRS audit scheduled for November 2006.

## **Control of small-scale nuclear activity and radiation protection regulations**

The ASN notes that implementation of radiation protection measures in the medical field is not uniform. In radiotherapy and nuclear medicine, the ASN considers application of radiation protection regulations to be satisfactory overall, even though accidents, such as the radiotherapy accident at the Grenoble university hospital, show that caution must be exercised. In radiology, where risks are lower, the ASN has observed improvements though further efforts must be made to better incorporate the requirements of radiation protection into the management of other medical risks. With this aim in mind, the ASN has developed exchange forums with health professionals, particularly with their professional societies, in order to inform them on the obligations of the regulations and to encourage them to extend their initiatives to optimise exposure, in particular that of patients, once the procedures have been justified. Moreover, the ASN is closely tracking the development of medical techniques to ensure that radiation protection is implemented as far upstream as possible for projects involving new machinery or the use of new radio-nuclides.

In industry, which is characterised by high numbers of applications and users of ionizing radiation, the ASN considers that the efforts made in radiation protection training and awareness-rais-

ing should continue. The most worrying and high-risk area is that of gammagraphy. This danger is illustrated by the December 15 accident in Chile in which a Chilean worker was seriously irradiated. The victim is currently undergoing treatment at the Percy hospital in France. During the meetings held by the COFREND (French confederation for non-destructive testing), I clearly indicated that professionals working with gammagraphy must become more meticulous in the operation and transport of gammagraphs, otherwise the justification of this application may be questioned.

In 2002 the ASN launched an ambitious programme to update radiation protection legislation and regulation within the context of the transposition of community directives. As of the end of 2005, the transposition of the Euratom directives 89/618, 96/29 and 97/43 is considered to be complete, after publication in 2005 of a final decree and seven orders taken in application of the public health code and the labour code. Among these is the order of October 26 setting out the terms for technical control of radiation protection.

The ASN has also prepared an order to transpose the Euratom 2003/122 directive on the control of high-activity sealed radioactive sources and orphan sources. This order, to be published in the first half of 2006, is an opportunity for the ASN to simplify nuclear activity declaration and authorisation procedures to simplify procedures for users of ionizing radiation and make them more efficient by limiting administrative tasks that have no added value for radiation protection.

In parallel to its work on producing regulations and dealing with administrative procedures, the ASN continues its efforts to implement an inspection system for medical and industrial nuclear activities.

In application of law no. 2004-806 of August 9, 2004, relating to public health policy, the ASN has prepared a setting out the guidelines for designating radiation protection inspectors. Without awaiting the publication of this decree, expected

in early 2006, the ASN has developed an inspection methodology specific to for the nuclear field, giving particular emphasis to future guidelines for control and radiation protection of patients. The methodology also takes into account the technical controls performed by approved bodies, whose skill and effectiveness will be guaranteed by the ASN.

Generally speaking, in small-scale nuclear activity, the ASN is committed to simplifying administrative procedures, specifically by pooling the various authorisations from major establishments; moreover, this simplification is included in the above-mentioned proposed order.

## **Control of exposure to ionizing radiation**

Medical applications using ionizing radiation and naturally occurring ionizing radiation, including radon, are the two main sources of exposure of individuals in France. I would like efforts to focus on improving monitoring of this exposure to identify the most exposed categories of the population for whom this exposure can be optimised.

For this reason, the plan action plan to monitor patient exposure to ionizing radiation (PASEPRI) introduced by the ASN last year, in cooperation with the IRSN and the InVS (national health monitoring body), has begun this year to provide new and more accurate information on the estimation of doses administered to patients.

This year the ASN has also implemented an action plan on radon-related risks in housing. This plan will help prepare the measures required to incorporate radon measurement into the housing health standards required for real estate transactions. For new housing, an initiative is underway to develop building standards to prevent high levels of radon in top-priority districts.

Lastly, training and information initiatives will be geared towards building professionals in order to better structure bids for construction projects after an initial diagnosis highlighting high radon concentrations.

## **The ASN's efforts in focusing research and improving knowledge of radiation protection**

In order to adapt regulations to developing knowledge in health and ionizing radiation, I believe it is important for the ASN to be involved in monitoring research and deliberations, both at national and international level. Indeed, the ASN is closely monitoring international projects conducted by the UNSCEAR (United Nations Scientific Committee on the Effects of Atomic Radiation), aimed at periodically updating knowledge on the health effects of ionizing radiation and also the work of the ICRP (International Commission on Radiological Protection) which aims to update radiation protection recommendations. The monitoring of these projects is particularly important at a time when the IAEA and the European Commission have revealed they will coordinate their efforts to update "basic standards" related to radiation protection.

## **Management of radioactive waste**

2005 was marked by intense activity to prepare the debate to be held in Parliament in the second quarter of 2006 on the bill concerning the search for channels for eliminating high-level long-lived waste (HLLL) called for by law no. 91-1381 of December 30, 1991 on research into radioactive waste management, known as the "Bataille" law. Firstly the report by the OPECST (Parliamentary Office for Scientific and Technology Choices Assessment), published on March 15 by Mr Birraux and Mr Bataille must be acknowledged. The report was the result of an intense and long-term investment on the part of its authors and takes stock of the research conducted on the various themes contained in the above-mentioned law. It is a valuable tool for preparing the bill as it provides a true roadmap for the management of HLLL waste after 2006. Furthermore, the Government, in the aim of providing better public information on radioactive waste, asked the national public debate commission to hold a debate on the subject. This debate took place from September 2005 to January 2006.

The ASN's objective is to ensure that all radioactive waste, of any type and origin, is managed safely and uniformly and has devised a draft plan entitled PNGDR-MV (National plan for management of radioactive waste and reusable materials) through the creation of a working group made up of representatives of elected officials, waste producers, managers of radioactive or non-radioactive waste, representatives from the ministries concerned, technical specialists and environmental protection associations. The draft plan is available for public consultation on the ASN website ([www.asn.gouv.fr](http://www.asn.gouv.fr)). The major perspectives of this plan are likely to be approved by the bill to be presented to Parliament in the second half of 2006.

Within the framework of the preparation of the above-mentioned bill, on February 1, 2006, the ASN submitted its report to the Government on both management of high-level long-lived radioactive waste and management of radioactive waste and reusable materials. This report clearly indicates that, although the areas of research covered by the above-mentioned law of December 30, 1991 are complementary, disposal in deep geological repositories is undeniably the definitive solution for high-level long-lived radioactive waste. The report also covers the focus areas of the PNGDR-MV.

## **Emergency situations involving radiology**

An inter-ministerial directive was published on April 7 relating to the actions of public authorities in the event of an incident leading to an emergency situation involving radiology. This directive puts the ASN in charge of preparing the terms of the response to a situation caused by a nuclear accident. Until now, public authorities have focused their efforts on preparing to manage the emergency phase of a nuclear accident; the emphasis must now be on preparing to solve complex problems such as health issues for the population, economic impact and rehabilitation of contaminated areas. I therefore decided to set up a post-accident management committee to develop a policy on this matter within the next two years. This management committee will draw on the various national and international projects conducted on this subject and on five

“PAREX” seminars held by the ASN in late 2005 and early 2006.

In order to prepare for managing less serious accident situations in small-scale nuclear activities, the ASN, in conjunction with the interior ministry and other ministry departments responsible for health and the environment, has drafted a document addressed to prefects specifying the breakdown of skills and the procedures to be followed by local authorities if such events occur. This document was published December 23 and a emergency exercise will be organised during 2006 to test these terms.

## Public information

One of the ASN's vital roles is informing the public. It pursued an active public information policy in 2005, during which 500,000 homes located near nuclear plants received information brochures presenting local organisation for the supervision of nuclear safety and radiation protection in France, constituting a large-scale public initiative for the ASN. Similar initiatives involving residents near other nuclear sites will be organised in 2006.

In 2005, an opinion barometer to gauge awareness of the ASN and the level of satisfaction of various categories of the general public regarding the ASN's information initiative was introduced, marking an important step in the development of these initiatives. The initial results, showing that the ASN is relatively well-known by the general public, should serve as a guide for the way ASN informs the public.

The growing numbers of visitors to the [www.asn.gouv.fr](http://www.asn.gouv.fr) website in 2005 confirms that the Internet is now the general public's main source for the public to get information about ASN. New sections were created in 2005 and public consultation projects on various law proposals were organised. These initiatives will continue in 2006, with a new version of the site coming online during the year.

Important initiatives were undertaken in 2005. The ASN will pursue its active policy in this area in 2006.

## Technical support for the ASN

To implement its control of nuclear safety and radiation protection, the ASN calls on the assistance of technical expertise bodies, the main one being the Radiation protection and nuclear safety institute (IRSN). The quality and relevance of the IRSN's support are essential to the ASN's efficient control. The ASN and the IRSN worked together in 2005 to improve the efficiency of their working relationship, specifically via development of good practice documents and initiatives aiming to better define the nature of the ASN's requests to the IRSN. This work is set to continue in 2006 and will help the ASN, with the support of the IRSN, make more predictable individual decisions within specific deadlines.

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2006 will be an important phase in the ASN's developing role with the preparation of a programme defining the conditions for achieving harmonised pan-European nuclear safety control as well as the critical eye of the ASN's peers on its organisation and operation during the IRRT audit which I have requested.

In 2006, the bill on managing radioactive materials and waste, which the Government will present to Parliament, will help define the long-term national policy for management of radioactive materials and waste. Although it is to recognise that disposal in deep geological repositories is the definitive management solution for high-level long-lived radioactive waste, it will also create a roadmap for research and studies for all radioactive waste, in line with the principles set out in the law of December 30, 1991.

Within the framework of the preparation of the bill on transparency and security in the nuclear field to be presented to Parliament in March 2006, and in pursuance of initiatives in place for several years, the ASN also plans to prepare to implement the independent authority announced by the French President.

Within this context, the ASN will continue to aspire to ensuring effective, legitimate and credible nuclear control which is recognised by citizens and constitutes an international reference.

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Faced with the challenges ahead, I am sure that I can count on the enthusiasm, the skill and the motivation of all agents of the ASN to help us

move forward together, celebrating our values of competence, independence, discipline and transparency.



André-Claude LACOSTE