



Editorial

This ASN Report on the state of nuclear safety and radiation protection in France in 2010 is presented by a partly changed Commission. Jean-Jacques Dumont and Philippe Jamet, appointed by the President of the Republic and the President of the Senate respectively have, for a six-year term, replaced Marc Sanson and Jean-Rémi Guoze, whose mandates expired on 12th November 2010.

Paris, 1st March 2011

► From the nuclear safety and radiation protection standpoint, 2010 was a relatively satisfactory year.

However, in the field of nuclear installations, ASN considers that EDF needs to improve its forward planning of a certain number of maintenance and component replacement operations. Belated decisions of this nature meant that EDF had to submit files to ASN to justify continued operation in degraded mode. These files were not felt to be acceptable by ASN from the safety standpoint. This type of management is neither efficient nor optimised, be it for ASN with regard to safety and the mobilisation of its resources, or for EDF. For example, the late replacement of the Bugey nuclear power plant reactor's 3 steam generators, after the discovery of significant corrosion of one of them, led to a 20 month reactor outage.

The publication of the second edition of the national radioactive materials and waste management plan (PNGMDR 2010-2012) was one of the significant events of 2010. The draft European directive on the management of waste and spent fuel, which has just been proposed by the European Commission, reiterates that the elaboration of such a plan is one of its fundamental requirements.

In the field of small-scale nuclear activities, the progress made in 2009 in radiotherapy patient safety has been confirmed by the increased numbers of medical radiation physicists (PSRPM)

deployed under implementation of the Cancer II Plan and by the gradual implementation of quality management procedures designed to improve healthcare safety. However, ASN must continue to closely monitor a certain number of centres, especially when the shortage of PSRPM personnel is compensated for by calling in external contractors or through collaboration between centres.

Interventional radiology, in other words radiology which helps guide the physician's hand, particularly in cardiology, neurology and surgery, is a subject of some concern for ASN. High doses can be delivered to the patients and the radiation protection of the staff is not always what it should be, especially when these procedures are carried out in the operating theatre. Finally, it is worth noting that ASN's relations with a certain number of medical learned societies are on the whole constructive, a clear sign of the level of maturity now reached.

After its inspections, ASN sends a follow-up letter to the licensee or the party responsible for the activity monitored, presenting a summary of the main findings and a certain number of requests for remedial action. After the basic nuclear installations (BNI) sector in 2002 and then radiotherapy services

in 2008, the scope of the follow-up letters published was extended in 2010 to take in all inspections carried out by ASN.

▶ For the coming years, the ASN Commission has identified a number of national and international issues.

National issues

Regulating nuclear power generating reactors

The 13th June 2006 Nuclear Security and Transparency Act (TSN) requires a periodic safety review of nuclear facilities every ten years. EDF's 900 MWe reactors are now reaching thirty years of operation. In July 2009, on the basis of an assessment carried out on its behalf by the Institute for Radiation Protection and Nuclear Safety (IRSN), ASN issued a favourable opinion on the generic aspects of continued operation of the 900 MWe reactors beyond this period, subject to the results of the ten-yearly outage inspection carried out on each reactor. ASN issued a first favourable opinion for the Tricastin 1 reactor. The process will continue in 2011 and the following years for the other thirty-three 900 MWe reactors; ASN will make its position known, reactor by reactor.

EDF also stated that it wished to continue operating its reactors beyond forty years. For ASN, there are two aspects to both this issue and the periodic safety reviews: on the one hand, reactor conformity with the regulations applicable to them must be guaranteed and, on the other, the safety re-assessment must be conducted in the light of the safety objectives applicable to new reactors, such as the EPR. This approach is consistent with that adopted at a European level by WENRA (Western European Nuclear Regulators' Association). ASN is waiting for demonstration and justification data from EDF. ASN will be consulting its foreign counterparts on this major subject.

Regulating radioactive waste management

With regard to the back-end of the nuclear fuel cycle, ASN wants to see the national agency for radioactive waste management (ANDRA) play in full one of the roles entrusted to it by law: the design, siting and operation of radioactive waste repositories, in compliance with the stipulations of the PNGMDR. For the disposal of high-level waste and intermediate level, long-lived waste (HLW/IL-LLW), the Act states that ANDRA must submit the geological disposal facility authorisation application no later than the end of 2014 and that this submission must be preceded by a public debate. With the expert assistance of IRSN, ASN is continuing with the review of the files submitted by ANDRA concerning design options, operational and long-term safety, and reversibility. It is important that reversibility not compromise the safety of the repository, either during its operation or after its closure. ASN will consult its foreign counterparts on this new subject. ASN is also concerned by the absence of disposal capacity for low-level, long-lived waste (LLW-LL), and will closely monitor the development of this sector.

Regulatory framework

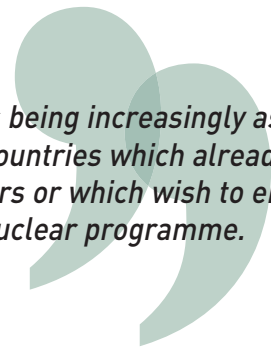
The regulations applicable to the design, operation and decommissioning of BNIs have been extensively overhauled, in particular by the TSN Act and its implementing decrees. Considerable progress has also been made on the drafting of technical regulations for nuclear facilities, through a broad process of consultation of the various stakeholders. This work should in 2011 lead to the publication of a government order and about fifteen ASN resolutions. The European directive on the nuclear safety of nuclear installations will thus be transposed into French law and the reference levels for reactors in operation defined by the WENRA association will be introduced into the national regulations.

Regulating the medical sector


In the field of small-scale nuclear activities, the aim is – together with the learned societies and professional organisations – to move forward on subjects of concern for ASN, as they represent radiation protection issues for workers and patients. In the medical field, this in particular entails continuing to improve radiotherapy treatment safety, to continue the efforts to train and recruit PSRPM to meet medical imaging requirements and to develop training and information in the fields of interventional radiology.

The rising doses received in medical imaging, particularly on account of the use of scanners, is a major concern for ASN. This is an issue that goes beyond national borders because the appliances used in medical imaging are built by international industrial firms. ASN will be initiating work on this subject with its foreign counterparts. For effective application of the examination justification principle, it will act with the Regional Health Agencies (ARS) to allow the development of magnetic resonance imaging (MRI) installations and, together with the French National Authority for Health (HAS) and the French Society of Radiology (SFR), will promote the development of decision-making tools for the prescribing physicians.

ASN is keeping an eye on the progress of research work which should lead to the development of individual radiation sensitivity tests. The most pertinent ongoing work is based on the detection of genes with abnormal activity under irradiation. This confirms the existence of the phenomenon of individual radiation sensitivity and its importance in radiotherapy.



ASN is being increasingly asked to help countries which already have reactors or which wish to embark on a nuclear programme.



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Regulating source security

The Government has decided to entrust ASN with the role of regulating the security of radioactive sources, in other words to monitor the prevention of malicious acts concerning these sources. ASN agreed to accept this role, provided that it was given the necessary means and was able to apply its rules of transparency in order to inform the public. These duties will be carried out incrementally according to the availability of its resources and, if necessary, with a redefinition of ASN's regulatory priorities.

International issues

International harmonisation of nuclear safety and radiation protection has always been one of ASN's core concerns. This is why the Commission took a public stance in 2010 on the level of safety of new reactors built around the world. It recalled that the safety objectives for new reactors have to take account of the lessons learned from the Three Mile Island accident in 1979, the Chernobyl disaster in 1986 and the attacks of 11th September 2001, in conformity with the objectives that the WENRA association has just adopted. It also specified that it did not want to see safety double-standards appear and that if reactor export projects failed to meet these safety objectives, ASN would not hesitate to declare that such reactors could not be built in France.

ASN is being increasingly asked to help countries which already have reactors or which wish to embark on a nuclear programme. ASN enjoys bilateral and multilateral collaborative relations with many foreign nuclear safety regulators. It is ready to answer any new requests but will have to establish priorities based on the pertinence of the requests and the manpower available.

Following the adoption of the European directive on nuclear safety of 25th June 2009, the construction of an European nuclear safety and radiation protection hub is progressing, with the draft directive on the management of waste and spent fuel. This directive will supplement the European regulatory framework for nuclear safety and radiation protection. ASN considers that this proposed directive is a very real step forward and will continue its active involvement in this project.

ASN hopes to see the safety objectives recently adopted by WENRA receive political approval at a European level. All European regulators will also be holding the first European

conference on nuclear safety in June 2011, an event comparable to the nuclear safety conference held every year by the U.S. safety regulator.

In the field of radiation protection, the European Commission should in early 2011 be submitting a draft directive concerning a revision of the basic standards, in line with the recommendations from the International Commission on Radiological Protection (ICRP) and the International Atomic Energy Agency (IAEA). ASN informed the Government of its opinion of the draft issued by the Commission in 2010.

The role of the Heads of European Radiological protection Competent Authorities (HERCA) association is comparable to that of WENRA in the field of nuclear safety. It is working on a European Radiation Passbook for transboundary workers and has initiated action with regard to scanner manufacturers.

▶ **After ASN's four years of existence as an independent administrative authority, it is time to draw some initial conclusions.**

Owing to the expanding role of the nuclear safety and radiation protection players and the rise in the number of matters handled, allied with a tighter budgetary situation, it is now time to take a fresh look at how the regulation of nuclear safety and radiation protection in France are financed, with respect to both the source and the management of this financing. A first step has been taken in this direction with the creation of a legal obligation on industry to finance IRSN's expertise. It would be desirable for this mechanism to be extended to all the financing of nuclear safety and radiation protection regulation in France. This change could also lead to the creation of a "regulation of nuclear safety and radiation protection" budget programme ensuring that the entire system is then transparent, as required by the TSN Act.

Independence does not however mean isolation. ASN reports on its actions, in particular through the presentation of this report to the Parliamentary Office for the Evaluation of Scientific and Technological Choices (OPECST), by taking part in the hearings organised by the commissions of the National Assembly and the Senate and by responding to queries from members of Parliament.

For ASN, independence and transparency go hand-in-hand. Being independent creates an obligation of accountability, an obligation to inform and to communicate. This is the spirit in which the Commission adopted a public stance in the debate on "safety double-standards" and it will continue to do so on key issues, legitimately and responsibly, to ensure that nuclear safety and radiation protection progress both in France and worldwide.

It is thanks to the competence and commitment of its personnel and with the support of the expertise of IRSN that ASN can aim to fulfil its duties with stringency and efficiency. ■