

Regulatory Updates

Nuclear safety...

ASN has carried out an inspection at Flamanville EPR reactor on welding flaws not detected during manufacture

April 2018

On 10th April 2018, ASN carried out an inspection on the Flamanville EPR reactor construction site to examine how the welds on the main secondary systems^[1] were checked following EDF's discovery, in March 2018, of welding flaws, which had not been detected during the manufacturing checks.

The inspection revealed that the organisation and working conditions during the manufacturing completion checks were on the whole prejudicial to the quality of the checks. Inappropriate surveillance of this work by EDF and Framatome also failed to identify and remedy the difficulties being experienced by the operators.


Certain flaws are still being investigated, in order to understand why they were not detected during the manufacturing completion inspections.

The inspectors consider that the procedures for the performance of the new checks on these welds by EDF are appropriate.

ASN does however consider that EDF should propose that these checks be extended to other systems.

ASN will issue a position statement on the corrective measures proposed by EDF, notably in the light of the results of the checks which will be sent to it next month.

^[1] The main secondary systems comprise the secondary containment of the steam generators as well as the pipes and accessories which cannot be safely isolated from it.

 **For more information**
www.french-nuclear-safety.fr

ASN has reported on the state of nuclear safety and radiation protection in France in 2017

April 2018

ASN considers that in 2017 the operating safety of the large nuclear facilities and radiation protection in the industrial and medical sectors were maintained at a satisfactory level on the whole. Nevertheless, for the EDF nuclear fleet, continued vigilance is required: the control of equipment conformity and the detection, notification and handling of deviations must be improved.

The general situation appears in other respects to be less worrying:

- The anomaly relative to the carbon-rich segregate zones in steels has been widely dealt with, particular as regards the EPR reactor pressure vessel and the steam generators of the reactor fleet in service.
- The review of all the manufacturing files of the Creusot Forge plant is progressing satisfactorily.
- The industrial reorganisations and recapitalisations of EDF and Areva have been carried out.

The scale of the safety and radiation protection issues, however, is unprecedented. These issues will necessitate the maintaining of a high level of vigilance:

- To better prevent and detect irregularities such as those found at the Creusot Forge plant, ASN in 2017 looked into ways to improve the oversight and monitoring system. The full plan of action will be finalised in the first half of 2018, but steps have already been taken in this direction.
- The essential question of the extension of the service life of the oldest nuclear facilities is posed. ASN plans giving an overall opinion on the continued operation of the 900 MWe reactors beyond their fourth 10-yearly outage in 2020. In this context, ASN will make a statement on the safety improvements it deems necessary.

- The nuclear facilities under construction (Flamanville EPR; Jules Horowitz reactor; Iter project at Cadarache) are experiencing significant delays and numerous difficulties due primarily to the loss of experience in design and construction. With regard to the EPR, ASN underlines that EDF still has a considerable amount of work ahead of it to substantiate the fitness of the nuclear pressure equipment for service.

- The management of radioactive waste constitutes a major safety issue. A public debate on the National Plan for Radioactive Materials and Waste Management (PNGMDR) should be held at the end of 2018.

- The continuation of the post-Fukushima work: despite having introduced numerous reinforcements on the facilities, major works still have to be carried out.

- In the area of radiotherapy, ASN still observes shortcomings in certain departments, particularly in the management of technological and organisational changes. Vigilance must therefore be maintained, especially given that seven incidents were rated level 2 on the ASN-SFRO scale in 2017 (in external-beam radiotherapy, brachytherapy and interventional imaging).

In addition, ASN is currently contributing to the finalisation of the regulations on the security of radioactive sources. The first ASN inspections in this area are planned for the second half of 2018. This will be a first step in the field of security for ASN.



 **For more information**
www.french-nuclear-safety.fr

ASN has conducted an inspection on a significant protection event at the Le Mans Hospital

April 2018

On 8th March 2018, the Le Mans Hospital notified ASN of a significant radiation protection event concerning a pregnant woman who underwent a computed tomography (CT) scan during the night of 6th March 2018.

Due to the inappropriate utilisation of a control button, the patient and her child were accidentally exposed to a radiation dose very much higher than that usually delivered in this type of examination.

In the wake of this event, on 23rd March 2018 the hospital notified the ANSM (French Health Products Safety Agency). As soon as the event was detected, the hospital contacted the IRSN (French Institute for Radiation Protection and Nuclear Safety) and asked it evaluate the exposure of the patient and her child and the possible consequences of this exposure. The results of the IRSN analysis and expert assessment were communicated to the medical team concerned.

On 27th March 2018, accompanied by members of the IRSN and the Regional Health Agency (ARS) of the Pays de la Loire, ASN conducted an inspection to analyse the malfunctions associated with this event.

The inspection confirmed that inappropriate and repeated use of a one of the CT scanner control buttons during the examination of the patient had generated no alert signal and that the radiographer did not have immediate access to the information concerning the total dose delivered.

The inspection also provided information on the first corrective and preventive measures identified by the hospital to prevent the recurrence of such an event, such as:

- the drafting of a procedure concerning the utilisation of this control button;
- the activation of a delivered dose monitoring function;
- the training of all the radiographers with regard to these changes.

The inspection also highlighted the need to:

- organize, for medical emergencies, the possibility of increased use of examinations by MRI (medical resonance imaging);
- fill the radiographer vacancies;
- improve the structure of the training and define the radiographer authorisation conditions;
- improve the ergonomics of the control button on this type of scanner in order to monitor patient exposure levels and inform the medical staff if the alert thresholds are exceeded.

In view of the large number of scanners of this type in service in France, ASN will - after consulting the medical learned societies - publish technical recommendations based in particular on its recommendations of 13th June 2016 relative to training in the use of medical devices emitting ionizing radiation.

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On 20 October 2017, the Delafontaine Hospital Centre (Saint-Denis, France) notified ASN of a significant radiation protection event affecting a radiologist performing fluoroscopy-guided interventional practices using a scanner.

In the first quarter of 2017 this practitioner had received a dose on the hands exceeding the annual regulatory limit for a worker classified in category-A (dose to the "extremities" exceeding 500 mSv).

Analysis of the event shows that the majority of the dose was received by the radiologist when performing complex thoracic or abdomino-pelvic needle biopsies, during which his hands were exposed to the primary X-ray beam emitted by the scanner.

ASN conducted an inspection concerning this incident on 24 January 2018, which, among others, highlighted the need to:

- change the practices of the medical practitioners concerned to avoid any exposure of the hands to the primary X-ray beam emitted by the scanner;
- improve the preparation of the patient prior to the procedure in order to facilitate the work of the radiologists.

ASN rated this event level 2 on the INES scale.

 **For more information**
www.french-nuclear-safety.fr

ASN is setting up and renewing its Advisory Committees for nuclear safety: call for candidate applications

March 2018


There are currently five Advisory Committees of experts (GPE) covering nuclear safety: "Reactors" (GPR), "Laboratories and Plants" (GPU), "Waste" (GPD), "Transports" (GPT) and "Nuclear Pressure Equipment" (GPESPN). A further two cover radiation protection: "Radiation Protection in the Medical Sector" (GPMED) and "Radiation Protection (non-medical) and Environment" (GPRADE). In 2018, a "Decommissioning" Advisory Committee (GPDEM) is set up to deal with the growing challenges of the decommissioning of nuclear facilities.

These GPE are consulted by ASN so that they can shed light on technical subjects with the most significant implications and potential consequences, generally drawing on an expert assessment from IRSN, or from ASN's nuclear pressure equipment department for the GPESPN.

GPE members come from civil society, industry, technical support organisations, university research laboratories, foreign safety regulators, etc. They carry out their activities on a voluntary basis. They are appointed for 4 years by decision of ASN and may be relieved of their post at their own request or if so decided by ASN, with full reasons being given.

With a view to preventing any conflict of interest, ASN asks those interested in becoming a GPE member to produce a declaration of interests. The ethical rules applicable to external expert assessments produced at ASN's request are defined in the document to be incorporated into the ASN internal regulations.

The six GPE for nuclear safety covering must be duly constituted **before 30th September 2018**.

 **For more information**
www.french-nuclear-safety.fr

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