French Nuclear Safety Authority

N#5 March 2018

Regulatory Updates

Nuclear safety...

ASN has lifted its suspension of the pressure test certificate of a steam generator installed on Fessenheim-2

March 2018

After examining the file transmitted by Framatome (formerly Areva NP), ASN considers that the anomaly in the forging of a shell of this steam generator does not compromise its serviceability and that its compliance with the regulations is thus demonstrated. It more specifically notes that the mechanical properties of the material comply with the initial hypotheses of the design studies.

The Framatome file also relies on controls performed on the steam generator, on the one hand and on chemical analyses and mechanical tests performed on representative scale one replica parts, on the other. These mechanical tests were monitored by an independent organisation. This file was assessed by ASN and its technical support organisation, IRSN. ASN also consulted its advisory committee of experts for nuclear pressure equipment.

On 18 July 2016, ASN suspended the test certificate it had issued in 2012 for steam generator N° 335, which led to continuation of the shutdown of Fessenheim NPP reactor 2. This suspension followed the detection in 2016 of an irregularity in one of the parts of this steam generator, called the "lower shell", manufactured by the Creusot Forge plant: the forging process for the lower shell of this steam generator, made in 2008, was not compliant with the technical file submitted to ASN, which had not been informed accordingly at the time.

This decision to lift the pressure test certificate suspension is taken in the light of the safety issues and does not prejudge any legal proceedings which could be taken as a result of the irregularities found in the Creusot Forge plant.

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

In order to prepare its resolutions which have the most significant nuclear safety and radiation protection implications, ASN requests opinions and recommendations from the Advisory Committees of experts (GPE) that report to it.

There are currently five 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) was 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. The GPE analyse the information made available to them and issue an informed and independent opinion. Their opinions are published on the ASN website at the same time as the ASN resolution concerning the subject.

The GPE provide ASN with an expert opinion and the perspective necessary for decision-making. They act as guarantors of nuclear safety and radiation protection doctrine and contribute to its development. They can also be involved in regulatory changes.

Each GPE meets several times a year to prepare the opinions transmitted to ASN. The GPE can also meet to hold information sessions and may be required to take part in field visits.

GPE members are appointed for their competence, whether cross-disciplinary in nuclear safety and radiation protection fields, concerning certain types of facilities or activities, or specialising in a particular technical field.

They come from civil society, industry, technical support organisations, university research laboratories, foreign safety regulators, etc., are appointed individually and do not represent the structure from which they come. In this respect, the GPE are not pluralistic groups.

GPE members are appointed for 4 years by decision of ASN. They carry out their activities on a voluntary basis and they may be relieved of their post at their own request or if so decided by ASN, with full reasons being given.

The selection and appointment process used by ASN for the GPE members aims to ensure that not only are their skills complementary, but that the expert assessment on which ASN relies is transparent and that the decision-making process is independent.

ASN intends to continue to open up the GPE to experts from civil society. The High Committee for transparency and information on nuclear security (HCTISN), the Parliamentary Office for the evaluation of scientific and technological choices (OPECST) and the High Council for the prevention of technological risks, among others, will therefore be asked to propose members with the required expertise. This move towards greater openness also leads to this call for spontaneous applications.

With a view to preventing any conflict of interest, ASN also 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

A radiologist suffers radiation overexposure of the hands

February 2018

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. Due to late forwarding of the dosimeters to the laboratory responsible for analysing them, it was discovered in September 2017 that 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 500mSv).

The hospital centre took immediate measures after discovering the incident and the radiologist stopped all interventional procedures using the scanner. 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. Corrective measures have been put in place to optimise the protocols, improve the organisation of work on the interventional scanner, limit the exposure of the practitioner's hands during the procedures and ensure that the dosimeters are analysed within the required times.

ASN conducted an inspection concerning this incident on 24 January 2018. The efficacy of the first corrective measures was confirmed and a plan of action was developed in consultation with all the professionals concerned to prevent the occurrence of similar events. The inspection highlighted the need to:

- continue the optimisation of the examination protocols;
- 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.

Considering the exceeding of the annual exposure limit for the extremities, ASN rates this event level 2 on the INES scale.

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

Flamanville EPR project

February 2018

On 7th February 2018 the ASN Commission heard EDF and Framatome (formerly Areva NP) management on the Flamanville EPR reactor project.

The Commission questioned EDF and Framatome more specifically on the anomalies affecting the nuclear pressure equipment, the reactor start-up tests, and the ongoing technical examinations relating to the facility commissioning authorisation application.

ASN will submit its draft resolution on the Flamanville EPR reactor commissioning authorisation application to public consultation.

Deviations detected in certain welds on the main steam transfer lines

The ASN Commission questioned EDF and Framatome about the deviations detected in welds on the main steam transfer pipes. ASN was notified of the first deviations in early 2017.

These lines are subject to a "break preclusion" procedure which implies tightened design, manufacturing and in-service monitoring requirements. These tightened requirements must be sufficient for a break of the lines to be considered extremely improbable. They relieve the licensee of the obligation to conduct an exhaustive analysis of the consequences of a break of these lines in the facility's safety case.

In order to achieve the expected high standard of manufacturing quality, the licensee and the manufacturer have defined, more specifically, tightened requirements for the mechanical properties. However, these tightened requirements were not specified to the subcontractor responsible for these welding operations. The controls carried out during production showed that, for some of these welds, not all of these requirements had been met.

Following an inspection by ASN, this finding was extended to other welds on these pipes on the Flamanville site.

Technical discussions held in 2017 led ASN in February 2018 to ask EDF to provide it with a complete file addressing:

- the history of the detection and handling of these deviations;
- the different possibilities for correcting them.

The Commission informed EDF and Framatome that it will obtain the opinion of the Advisory Committee of Experts for Nuclear Pressure Equipment (GP ESPN) on this subject in the second half of 2018.

RPV closure head and bottom head anomaly

On 7th April 2015, ASN made public the discovery of an anomaly in the composition of the steel in certain zones of the reactor pressure vessel (RPV) closure head and bottom head of the EPR reactor. It issued its opinion concerning this anomaly on 10th October 2017.

The ASN Commission reminded EDF and Framatome that commissioning of the RPV is subject to an authorisation delivered with regard to the substantiation of the fitness for service of all of its components. A hydrostatic test of the entire main primary system, which includes the RPV, was carried out on 5th January 2018.

Framatome plans to submit a file to ASN supporting the RPV commissioning authorisation application in the 2nd quarter of 2018. The examination of this file could lead ASN to adopt a position on the commissioning of the RPV before the end of the 3rd quarter 2018.

Reactor start-up tests

The ASN Commission informed EDF that it considers that the organisation in place on the work site can be improved. EDF must in particular reinforce the monitoring of performance of the tests and the handling of any deviations encountered. ASN also expects EDF to inform ASN more diligently on the progress of the startup tests. EDF has undertaken to implement a plan of action to remedy these malfunctions.

In 2018, ASN shall be particularly attentive to the performance of the startup tests, which constitute a major factor in the demonstration of compliance of the facility with its baseline requirements.

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

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