

# Regulatory Updates

## Nuclear safety...

### ASN New Year's greetings to the press

January 2020



The members of the ASN Commission and O. Gupta, ASN DG (left)

On the occasion of the New Year, ASN – through its Chairman Mr. Bernard Doroszczuk – presented its greetings to the press on 23 January, at its Montrouge headquarters, in the presence of members of the Commission and the Director General.

The ASN Chairman recalled that 2019 had been a dense year, marked by serious subjects which will determine the nuclear safety and radiation protection actions for 2020:

- The ASN position statement of June 2019 concerning the **repair of the Flamanville 3 EPR containment penetration welds**;
- The joint ASN/ASND position statement on **CEA's strategy for the recovery and packaging of legacy waste and the decommissioning of its facilities**;
- **ASN's active participation in the public debate on the 5<sup>th</sup> edition of the National Plan for Radioactive Materials and Waste Management (PNGMDR)**;
- **The conclusion of the work done by the Steering committee for managing the post-accident phase of a nuclear accident or radiological emergency situation (Codirpa)** (carried out over the period 2014 – 2019);
- The currently ongoing in-depth examination at ASN and IRSN of the studies into the **generic part of the 4<sup>th</sup> periodic safety review of EDF's 900 MWe reactors**.

Mr. Doroszczuk more particularly highlighted:

1) In the nuclear field:

- **The greater awareness on the part of the nuclear licensees of the industrial challenges facing them collectively.**

Over and above the efforts made by the nuclear sector to maintain the skills level essential to ensure the quality of its work and the safety of its facilities, the inspections performed by ASN and the initial lessons learned from the

action plan against irregularities confirmed the need for certain players of the sector to strengthen their professional rigorousness.

With regard to the orientations of the plan presented by EDF, in order to address the demands of the Government, Mr. Doroszczuk stressed *"that they should not only be targeted on new construction projects being carried out by the sector, but deployed immediately with regard to significant maintenance work on the facilities in service and to the complex legacy waste recovery and decommissioning project"*.

Mr. Doroszczuk also recalled that all the licensees and companies in the nuclear sector must mobilise to *"more precisely define the steps to be taken, on the basis of their own operating experience feedback"*.

2) In the medical field:

- **The high level of radiation protection for patients** who benefit from diagnostic or therapeutic procedures using ionising radiation, **even if organisational shortcomings** still persist in certain centres.

ASN will be paying particular attention to the risks arising from the significant workload in the units in the light of the human resources available in a medical sector subject to considerable pressure, as well as the cumulative effect of the doses to which the health professionals can be exposed, notably when using fluoroscopy-guided interventional practices in the operating theatre.

In this context, ASN restates its strategic priorities, which more particularly consist in:

- **Continuing to implement the graded approach to nuclear safety and radiation protection oversight** in the light of the issues involved and how those in charge of the activities, or the licensees, carry out their responsibilities.
- **Consolidating its working** by reinforcing its management independence through the creation of a budget programme dedicated to nuclear safety and radiation protection, under the responsibility of the ASN Chairman.
- **Encouraging the stakeholders to anticipate medium/long-term strategic subjects far earlier**, such as the management of radioactive materials and waste, the management of decommissioning, the need for available technical resources within the sector, or the interfaces between energy policy and the ability to maintain margins.

### ASN issues a position statement on the orientations of the generic phase of the 4<sup>th</sup> periodic safety reviews of the 1300 MWe reactors

December 2019

In 2017, EDF initiated the 4<sup>th</sup> periodic safety review (PSR) of its twenty 1300 MWe nuclear power reactors, which is aiming for continued operation beyond 40 years. As with the previous PSR and in order to take advantage of the standardised nature of its reactors, this PSR is conducted in two stages:

- a "generic" phase, which covers subjects common to all the 1300 MWe reactors;
- a "specific" phase concerning each individual reactor and which is scheduled to run from 2027 to 2035.

The "generic" PSR phase begins with a definition of the objectives assigned to this PSR. For this purpose, EDF transmitted a "PSR guidance file" which specifies its objectives.

On 11 December 2019, ASN issued a position statement on the orientations of the "generic" phase of the 4<sup>th</sup> PSR of EDF's 1300 MWe reactors.

ASN considers that the general objectives set by EDF for this review are acceptable in principle. However, it asks EDF to modify or supplement these general objectives for this safety review, to consider certain baseline requirements for reassessment of the safety of its facilities and to add study topics to its review programme. The requests made by ASN are to a large extent based on those made in 2016 for the 4<sup>th</sup> PSR of the 900 MWe reactors.

Following the generic studies phase, ASN will also issue a position statement on the adequacy of the modifications planned by EDF.

For the particular purpose of the 1300 MWe reactors 4<sup>th</sup> PSR, ASN wished to promote broader participation by the stakeholders as of the "generic" phase objectives definition stage. Thus ASN's position was the subject of a discussion meeting with the stakeholders (members of the [HCTISN](#), the [ANCLI](#) and CLIs, plus qualified personalities) at the ASN headquarters on 16 October 2019 and a public consultation on the ASN website from 17 October to 17 November 2019.

The comments collected led ASN to ask EDF to produce a summary at the end of the "generic" PSR phase, presenting the safety differences that will persist between the 1300 MWe reactors and the Flamanville EPR reactor, and to reformulate the request concerning organisational and human factors.

## Significant safety event during operations to drain the reactor 2 primary system on the Golfech NPP

December 2019



The Golfech NPP

On 11 October 2019, EDF reported a significant safety event to ASN concerning non-compliance with the general operating rules during operations to drain the reactor 2 main primary system on the Golfech NPP.

On 8 October 2019, the reactor was being shut down so that part of its fuel could be renewed. A field operator went to the reactor building to open the pressuriser vent, in accordance with procedures. This operator was interrupted during the course of his work and the vent was in fact not actually opened. Assuming that the vent had been opened, the operators in the control room began the scheduled primary system drainage operations, although with vent closed, leading to depressurisation of the system. In this configuration, the water level measurements in the primary system are no longer representative of the actual situation.

Eight hours later, an operator saw that the water level in the primary system was not changing as expected. After analysis, the operating team interrupted drainage of the system and sent a field operator to the reactor building to check the position of the pressuriser vent. Finding it to be closed, they requested that it be opened, although without first carrying out the steps required by the general operating rules.

This opening led to uncontrolled water movements in the primary system and a drop in the water level. The licensee then made up the water level in the primary system.

The decisions made and the steps taken by the licensee were hasty following the discovery of non-opening of the vent, with no preliminary assessment of the actual and potential impacts and with the reactor in a configuration non-compliant with the general operating rules. The subsequent analysis performed by the licensee, at the request of ASN, showed that cooling of the fuel assemblies in the reactor pressure vessel was maintained during the event.

This event took place a few days before an in-depth inspection carried out on the Golfech site by 13 ASN inspectors and 11 IRSN experts. This inspection was an opportunity for ASN more particularly to check the steps taken by EDF to ensure the safety of continued reactor shutdown operations and reinforce the monitoring of control activities following this event.

ASN also asked EDF to assess the consequences of depressurisation on the primary system equipment, which led to additional inspections being performed on the facilities. Their results were analysed by ASN as part of its examination of the reactor 2 restart approval request, which was granted on 21 November 2019.

Owing to the degraded safety functions and the potential consequences for nuclear safety, notably linked to errors in the management of the event and the monitoring of the operation activities, as well as to the fact that insufficient lessons had been learned from operating experience feedback, **the event was rated level 2 on the INES scale.**

## Significant safety event concerning defective electrical components at reactor 2 of the Penly NPP

December 2019

On 18 December 2019, EDF reported a [significant safety event relating to defective electrical components which put the backup systems of the Penly NPP reactor 2 out of service](#). In the context of the Penly NPP reactor 2 refuelling and maintenance outage which began on 27 July 2019, EDF replaced the moving parts of two redundant electrical panels (channels A and B). During restarting of the reactor backup and cooling pumps for post-work requalification, when the reactor was still shut down, anomalies led EDF to detect the malfunctioning of four electrical components as of 12 October 2019.

On 10 December, with the reactor still shut down but refuelled, EDF conducted investigations to determine the origin of the faults. The investigations revealed that 28 components replaced on the electrical panels were potentially defective. EDF then deemed the pumps of the backup and cooling systems of the reactor concerned by the anomaly to be unavailable.

On account of the deterioration of the safety function due to the installation of defective components on electrical panels important to safety, and deficiencies in the licensee's organisation - as much in the preparation of the maintenance activities as in the late analysis of the successive faults - **the event was rated level 2 on the INES scale.**

## In the wake of the Teil earthquake in November 2019, ASN takes stock of the earthquake resistance of the French NPPs

December 2019

On 11 November 2019, at about 12h, an earthquake struck the Rhone valley.

The facilities concerned were the nuclear reactors of the Cruas-Meysses and Tricastin NPPs, as well as the Orano facilities in Tricastin. According to the licensees concerned, no damage has been identified.

Nevertheless, ASN asked EDF to verify whether the values recorded exceeded the thresholds beyond which a more in-depth examination of the facilities is needed, requiring shutdown of the reactors. This is not the case for the Tricastin NPP, which is further from the earthquake's epicentre. However, one of these thresholds was reached for the Cruas-Meysses NPP, which led EDF to decide to shut down the reactors on this site.



The Cruas-Meysses NPP

In the wake of this event, ASN takes stock of the earthquake resistance of the French NPPs, answering the following questions on ASN web site:

- When designing a nuclear power plant, how do you determine the earthquake intensity the plant must be able to withstand?
- Have the lessons from the Fukushima accident been taken into account?
- Are the earthquake levels reassessed during the lifetime of a nuclear installation?
- What are the consequences of the Teil earthquake on the Cruas NPP?
- What are the consequences of the Teil earthquake on the Tricastin nuclear site?
- Will the Teil earthquake have any consequences on the resistance criteria of the Tricastin and Cruas NPPs?

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