French Nuclear Safety Authority N#24 November 2019

Regulatory Updates

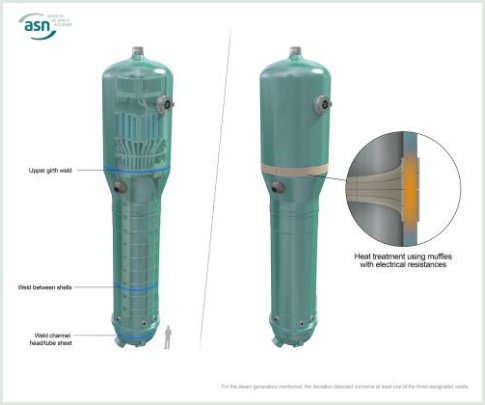
Nuclear safety...

Manufacturing deviation at Framatome stress-relieving heat treatment of welds

November 2019

On 9th September 2019, EDF informed ASN of a deviation concerning the manufacturing of nuclear pressure equipment installed in its reactors, and primarily steam generators (SGs). During the stress-relieving heat treatment applied to the welds made to assemble nuclear pressure equipment components, the required temperature range has not been respected over the entire area to treat.

Framatome, the manufacturer, discovered that the process implemented in its Saint-Marcel plant was not giving sufficient control over the uniformity of temperatures in the circumference of the treated welds.



Eighteen SGs manufactured by Framatome and installed on the in-service nuclear reactor fleet as from 2008 are concerned. These SGs were installed on the reactors of Bugey 3, Fessenheim 2, Dampierre 4, Blayais 3, Blayais 4, Paluel 2 and are currently being installed on Gravelines 5. Some twenty items of equipment still in the manufacturing process or undergoing their conformity assessment, including the SGs and pressurizers of the Flamanville EPR reactor, are also concerned.

This deviation in the stress-relieving heat treatment conditions can lead to changes in the metallurgical characteristics of the materials with respect to the hypotheses considered in the design files, or insufficient relief of the mechanical stresses induced by welding.

ASN carried out two inspections on September 18th to check the extent of the equipment items concerned and the methods of addressing the deviation. The inspection follow-up letters are posted on the ASN web site.

EDF and Framatome have sent ASN justification documents showing that the integrity of the equipment was not called into question. These documents have been examined by ASN with the technical support of IRSN.

ASN has requested complementary information concerning a SG of the Fessenheim power plant reactor No. 2, on account of its particularities.

On the basis of these elements and their analysis, ASN considers that the reactors in question can continue to function as is.

ASN has asked EDF to take advantage of the scheduled outages of these reactors - which will be staggered over the period until summer 2020 - to characterise the welds concerned, in particular through non-destructive tests and thickness measurements, in order to confirm the hypotheses adopted by EDF.

EDF must also undertake a work programme on mock-ups to characterise in detail the operations performed during manufacture and the phenomena observed for the various equipment configurations. The conditions of these investigations and tests shall be monitored by ASN and its technical support organizations.

Lastly, ASN has asked the manufacturer and the licensee to analyse the causes of this situation, which results primarily from inappropriate qualification of the heat treatment process prior to its implementation.

Olivier Gupta is elected Chair of WENRA

November 2019

Olivier Gupta, ASN Director General, has just been elected Chair of WENRA (Western European Nuclear Regulators' Association), by his European peers. He will be assisted by two Vice-Chairs, Petteri Tiippana, Director General of the Finnish nuclear regulator (STUK), and Mark Foy, Chief Inspector of the United Kingdom's Office for Nuclear Regulation (ONR).

Involved in the work of this association since the early 2000's, Olivier Gupta chaired from 2007 to 2011 the WENRA working group responsible for harmonising reactor safety, and whose work included the development of the post-Fukushima stress test specifications. He helped define the "safety reference levels" inspired by the IAEA standards and integrating the best European practices, which serve as a reference for the harmonisation of national nuclear safety regulations.

"*WENRA is quite a unique forum on the international scene: the technical and informal nature of the discussions, combined with each member's commitment to harmonise safety requirements, has resulted in significant progress over the last few years. The value of WENRA's work is reflected by the fact that several nuclear regulators from non-European countries such as Canada, Russia and Japan follow it closely. I want WENRA to remain at the cutting edge with regard to the new safety challenges in the years to come*", declared Olivier Gupta.

His ambition for the three years of his mandate will be to implement the new strategy adopted by the association and, in particular:

- To pursue the development and updating of the "reference levels" with a broader vision of safety that takes account more specifically of the interfaces between safety and security;
- Beyond the "reference levels", to develop new tools to harmonise the positions of the nuclear safety regulators on high-stake issues;
- To open up WENRA to the large non-European nuclear countries, by creating a status of associate member.

At the last plenary meeting of WENRA, Olivier Gupta warmly thanked his predecessor Hans Wanner, Director General of the Swiss Federal Nuclear Safety Inspectorate (ENSI), for the work he accomplished as Chair of WENRA since 2011.

Consequences of the earthquake in the Rhone valley: ASN has checked correct application of the verification procedures

November 2019

On 11 November 2019, at about 12h, an earthquake struck the Rhone valley. ASN mobilised its personnel to conduct a review with all the licensees operating nuclear facilities in the region. It contacted the national and local public authorities, more particularly the Prefect's offices of the Drôme and Ardèche *départements*.

The facilities concerned are the nuclear reactors of the Cruas-Meysse and Tricastin NPPs, as well as the Orano facilities in Tricastin. According to the licensees concerned, no damage has been identified. On the Orano site in Tricastin, certain facilities were temporarily shut down, although not on safety grounds.

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-Meysse NPP, which led EDF to decide to shut down the reactors on this site. ASN will examine the conditions in which it will be possible to restart these reactors.

ASN promotes initiatives in favour of justifying imaging examinations in France

November 2019

In France, medical applications represent the primary source of artificial exposure of the public to ionising radiation. This exposure is rising, mainly owing to the increasing number of computed tomography examinations.

Imaging examinations have proven their benefits for both diagnosis and treatment. The issue at stake however is to avoid examinations that are not really necessary or that offer no real benefit for the patients and the results of which could be obtained by other available, non-irradiating techniques.

To coincide with the International Day of Radiology on 8 November 2019, a campaign was launched in 19 European countries to make health professionals more aware of the appropriate use of medical imaging examinations. ASN is a participant in this initiative by HERCA[1] (Heads of the European Radiological Protection Competent Authorities). On the asn.fr website, it lists the resources promoting the justification and pertinence of imaging examinations in France, made available to patients and health professionals by the various institutions, learned societies and patient or user associations.

Justification lies at the heart of each of the two action plans to control the doses delivered to patients during medical imaging, which were drawn up by ASN in 2011 and 2018, in consultation with the departments of the Ministry for Solidarity and Health and with the health professionals. As the first principle of radiation protection enshrined in the Public Health Code, justification aims to ensure that the patient derives benefit from the examination, as compared with the risks inherent in exposure to ionising radiation. It is similar to the medical notion of pertinence, which aims to carry out "the right procedure for the right patient, at the right time", taking account of the trade-off between benefits and risks.

[1] HERCA is a voluntary association in which the heads of radiation protection authorities work together in order to identify common issues and propose practical solutions for these issues. HERCA's current fields of activity include medical and veterinary applications, emergency preparedness and response, radon and naturally occurring radioactive materials as well as research and industrial sources and practices. HERCA brings together 56 radiation protection Authorities from 32 European countries.

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

ASN submits for public consultation its draft position statement on the orientations of the generic phase of the 4th PSR of the 1 300 MWe reactors

October 2019

In 2017, EDF initiated the fourth periodic safety review (PSR) of its twenty 1 300 MWe nuclear power reactors. As with the previous PSR and in order to take advantage of the standardised nature of its reactors, EDF intends to carry out this PSR in two stages:

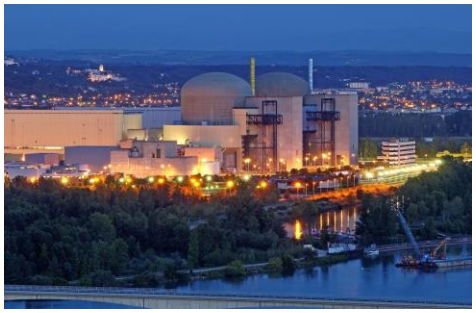
- a "generic" PSR phase, which covers subjects common to all the 1 300 MWe reactors;
- a "specific" PSR phase concerning each individual reactor and which is scheduled to run from 2027 to 2035.

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.

In its draft position statement, ASN intends to ask EDF to modify or add a number of general objectives for this safety review, to consider certain baseline requirements in the safety reassessment of its facilities and to add topics for study to its review programme. The requests concerning the methods and hypotheses to be used in the studies are to a large extent based on the requests made by ASN in 2016 for the 4th PSR of the 900 MWe reactors.

An opinion on this ASN draft position statement has been issued by the Advisory Committee for Nuclear Reactors.

From 17 October to 17 November 2019 ASN submits for public consultation its draft position statement on the orientations of the "generic" phase of the 4th PSR of the 1300 MWe reactors operated by EDF.



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

Public dialogue on improving the safety of French 900 MWe nuclear reactors: outcomes of a unique approach

October 2019

From 6 September 2018 to 31 March 2019, in accordance with its mission, France's High Committee for Transparency and Information on Nuclear Security (HCTISN) organised a public dialogue on improving the safety of the 900 MWe reactors of the French nuclear fleet in the framework of their 4th periodic safety review.

Several players contributed to conducting this public dialogue:

- The HCTISN, which originated the process and made sure the consultation would be carried out in accordance with the main principles relating to information and public participation;
- A steering committee, composed of 5 members appointed by the HCTISN, which defined the dialogue process and ensured its proper implementation;
- An operational committee including the main players in nuclear power plant safety: EDF, the ASN, the IRSN, and the National Association of Local Information Committees and Commissions;
- Two guarantors of the National Commission for Public Debate, chosen by the HCTISN, who ensured the proper conduct of the consultation.

The dialogue, open to all citizens, was designed to:

- Inform citizens about the improvement measures proposed by EDF with a view to continuing the operation of its 900 MWe nuclear reactors beyond 40 years;
- Gather their views on those measures and on the issues to be considered during the "generic" (see the definition in the column at left) phase of the reactors' 4th periodic safety review – which will end in late 2020 with an opinion from ASN;
- Involve the public in this way right from the beginning of the review process, during the "generic" phase which concerns all the reactors, before the public inquiries that will be held over the next decade for the reactors concerned.

The key figures of the consultation (number of meeting organized, number of participants, etc.), the issues raised by the public as well as the five recommendations adopted by the HCTISN are presented on the ASN website.

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