2 June 2020

Management of nuclear safety in France during the covid-19 pandemic

Because of the pandemic situation, ASN has adopted specific organisational measures consistently with governmental provisions. From 15 March, a teleworking regime has been adopted for most of ASN personnel. This scheme is still valid, even if a slow return to face-to-face work has been underway since the beginning of June. Continuity of activities has been ensured so that ASN's essential tasks are carried on and its high stringent demands with respect to the nuclear licensees are maintained. ASN and the licensees hold regular audioconferences at national and local levels to discuss the development of the situation and its consequences. The purpose of this document is to describe the applied measures and the implications on ASN duties.

National background

In mid-March, the government implemented a set of policies restricting human contact and travel in response to the covid-19 pandemic in France. These lockdown restrictions mandated the temporary closure of businesses "not essential to the life of the nation". Many of those restrictions have been relaxed as of 2nd June, but, especially in the Paris region, teleworking remains highly recommended, and social distancing is maintained everywhere.

Situation at the licensees'

Power reactors

EDF, the operator of the nuclear power plants, has given priority to the operating aspects that are vital for the supply of electricity. Some reactor outages for maintenance and refuelling have been postponed. Other maintenance activities have been nevertheless performed, despite the restrictions on contractors' availability.

Other nuclear installations

A large number of nuclear installations whose functioning is not vital for the continued activity of the country, operated in particular by the CEA, Orano and Andra, have been shut down and maintained in a safe state. Activities on the majority of work sites, particularly decommissioning sites, have been suspended. Orano has kept up activities necessary for the functioning of the EDF nuclear power plants as regards the removal of spent fuel, fuel reprocessing and fresh fuel supply.

Medical sector

Priority has been given to the management of emergencies. Non urgent examinations and interventions were postponed as possible.

Measures implemented by ASN

Continuity planning

On 15 March, ASN has triggered the red phase of its epidemic business continuity plan (dated back to 2009 and updated 4 times from March to May 2020). This has resulted in the implementation of teleworking for all personnel, the limitation of face to face contacts, and the application of social distancing and barrier measures in case of face to face contact.

Continuation of ASN's duties

Regulation and licencing

- The review and assessment work conducted by ASN in collaboration with its technical support, IRSN, has continued as normal, with the exception of certain specific studies, such as those requiring dedicated computational resources not remotely accessible.
- ASN continued with its investigation duties and the preparation of the first part of the draft resolution concerning the generic part of the periodic safety review for the 900 MWe reactors.
- In the medical field, ASN has given priority to dealing with licensing applications for the use of equipment or premises needed to manage the epidemic (use of nuclear medicine scanners for diagnostic purposes for example).

Oversight

- ASN is working closely with nuclear licensees and activity managers to analyse the nuclear safety and radiation protection consequences of the measures taken to deal with the ongoing health emergency: management of the workforce present and their authorisations, management of activities during facility shutdowns, the safeguarding of certain sites, the steps taken in hospitals to guarantee the continuity of treatment for patients and so on.
- ASN has adapted its in-field oversight system by applying three principles:
    - the exclusion of face to face contacts unless absolutely necessary, in order to limit propagation of the virus;
    - giving priority to the oversight of facilities remaining in operations;
    - maintaining oversight activities proportionately to the risks.
- Inspections involving on-site presence were suspended 15 March-15 April, save when necessary such as after the occurrence of a significant event. From April, the regional offices of ASN have progressively resumed on-site inspections, focussed on covid-19 situation management and human and organisational aspects.
- From 15 March to 15 May, 18 on-site inspection were conducted including 12 on safety and the possible consequences of the epidemic on the working of the facilities and 6 on labour inspectorate subjects.
- Remote monitoring and remote inspection procedures making use of both real time and off line remote examination of the physical operating parameters of the reactors have been implemented. This monitoring targeted operational activities (operation of reactors, periodic tests, operational management documents etc.). As for usual inspections, inspection follow-up letters are posted on the ASN website.
- ASN's labour inspectorate has had to draw EDF's attention to the situation of outside contractors' employees, by asking it to clearly define those maintenance or logistic activities whose continuity is vital, so that there is no ambiguity for these companies and their

employees, and to ensure that the conditions of health and safety for all employees are clearly communicated and correctly implemented on the sites.

- In the medical field and to enable the health professionals to focus on the health response to the epidemic, ASN has suspended its inspections in medical facilities carrying out nuclear activities, barring certain exceptions.

Emergency

- Crisis organisation has remained fully operational and able to be activated at any time.
- As part of the post-Fukushima safety improvements, EDF is updating its on-site emergency plans (PUI) to integrate potential difficulties in gaining access to the sites, which could render full deployment of the local emergency response teams more complicated (progressive deployment of the PUI). These changes in the PUI, examined by ASN with the assistance of IRSN, have been tested in hands-on situations during unannounced exercises which provided the opportunity to check that EDF is capable of managing an on-site emergency plan in highly degraded mode, should such a situation arise.
- National crisis exercises have been postponed until further notice.
- During the period, ASN participated in a Convex 2 exercise organised by IAEA.

Public Information

- Activities are carried on with adjusted procedures (e.g. no press conferences) mainly through information notices and press releases posted on ASN website.
- On 28 May, the ASN presented its report on the state of nuclear safety and radiation protection in France in 2019 to the members of Parliament of the Parliamentary Office for the Evaluation of Scientific and Technological Choices (OPECST). The report was sent to the offices of the President of the Republic and the Prime Minister and the Presidents of the Senate and the National Assembly.

International relations

- Many international meetings have been postponed, some are conducted remotely.
- Exchanges with bilateral counterparts have been maintained all along the crisis, in particular to benchmark the adopted practices.
- Work in international fora continued, in particular for the preparation of national reports and presentations (safety conventions, European directives, associations of safety regulators) and the evaluation of draft safety standards.

Assessment of oversight conducted during the covid-19 crisis

ASN maintained its high degree of stringency with respect to the nuclear licensees. The implementation of specific oversight procedures enabled installations monitoring to be maintained at an appropriate level, given the safety implications and the technical context of the facilities. At this stage, these inspections have revealed no lessening of safety or of worker radiation protection. More specifically, both remote and on-site inspections confirmed that Orano and EDF were able to implement appropriate organisations to deal with the health risk (barrier measures, prevention plans) while maintaining the required level of safety.

Oversight prospects for the coming weeks

Although ASN will be continuing to prefer remote working for a significant share of its personnel, it is also reinforcing its on-site inspection work, in addition to the remote-inspections, and is adjusting them to the context and the ramp-up in nuclear activities.

In the NPPs, ASN will be running coordinated safety and labour inspectorate inspections. It is also preparing its participation in the forthcoming ten-yearly hydrotests for the reactors concerned; in this respect it took part in that concerning the Chooz B1 NPP on Friday 15 May 2020.

The accumulated delays and postponements in the EDF reactor outages owing to the health crisis will lead to rescheduling of the outages, spread out over 2021 and/or 2022. This situation will involve challenges in terms of both safety and safeguarding of the electricity supply. In the face of these challenges in 2020, ASN – in close collaboration with EDF – is examining all these questions in the light of the deadlines and requirements applicable to each reactor.

The ASN teams are currently reviewing the 2020 inspection programme in order to determine the inspection priorities for the coming months, including issues linked to the covid-19 epidemic. In this context, particular attention will be paid to organisational and human factors.

Feedback of the covid-19 situation

In terms of organisational and working methods, changes had to be quickly implemented to be able to face this very challenging situation and will probably have long-term consequences in remote working and meetings conduct, including those of ASN's Commission.

As for nuclear oversight, some of the innovations implemented for remote monitoring and inspections will be retained permanently:

- access prior to inspection to documents usually examined during on-site inspections;
- direct access to the data system of the licensee in order to have real time access to some installation's parameters;
- reinforcement of graded approach.

Moreover, lessons could be drawn from the management of this crisis and applied to the preparation to a nuclear crisis, both for accident and post-accident situations.