

Summary of the Fifth ENSREG Conference on Nuclear Safety

The European Nuclear Safety Regulators Group (ENSREG) held its fifth biennial conference in Brussels on 6 and 7 June 2019.

The conference was attended by around 220 delegates from European and non-European countries, representing regulators, governmental offices, industry and NGOs. The possibility to follow the conference via web streaming was also available and several hundred connections were made during the two days of the conference. The video recordings, presentations and speeches, as well as some photos are available on the ENSREG website (<http://ensreg.eu/ensreg-conferences>).

The different subjects of the conference were linked to each other and presented four of the main challenges that EU Member States, regulators, and operators of nuclear installations are currently facing in Europe but also worldwide, in particular in the framework of long-term operation.

The 2019 edition focused on (i) ageing management in light of the 1st EU topical peer review (TPR) exercise, which took place in 2017–2018, (ii) decommissioning and waste management, (iii) standardisation of supply chain and component obsolescence, and (iv) knowledge management and skills preservation.

Opening remarks were delivered by Stefano Laporta, the Conference President, Chair of the Advisory Board of the National Inspectorate for Nuclear Safety and Radiation Protection in Italy, and by representatives of the European Parliament, the European Commission, the IAEA, and national nuclear safety authorities. Representatives of the US and Chinese nuclear regulators, civil society and industry also participated as panellists.

Session 1

The first session, dedicated to ageing management, gathered a diverse group of panellists representing regulators from Finland, Switzerland, Germany and the US, industry (ENISS) and civil society (Greenpeace/Nuclear Transparency Watch).

The main speaker and the panellists reminded the audience of the recommendations of the 1st TPR, which was devoted to the measures taken to control and monitor the ageing of nuclear reactors in EU member countries. They stressed the general importance of improving the TPR process in terms of both efficiency and scope, including follow-ups to assess the concrete impact on the ground of the TPR, as well as the possibility of organizing on-site visits during the next TPR.

Attendees and panellists also extensively exchanged on the preparation of the next topical peer review which needs to be organized on a chosen topic at least every six years under the EU Nuclear Safety Directive (in about four years from now at the latest).

During the discussions, it was highlighted by NGOs that the TPR process must not be abused to justify long-term operation of nuclear power plants.

Panellists also shared experience feedback on ageing management in non-EU countries (Switzerland and the US).

Regarding existing reactor fleets, participants recognized the need to consider not only 'physical ageing' but also 'conceptual ageing', that is, obsolescence of design. In this field, a key element is to reach a common understanding of how to address reasonably practicable

safety improvements, in line with WENRA reference levels and the safety objective arising out of the amended Nuclear Safety Directive.

Session 2

In the session on decommissioning and waste management, panellists shared their experience on the matter in France, Sweden, and Italy from a regulatory perspective and in Slovakia from the operator's perspective. The view of the Spanish radioactive waste management agency was also expressed. Presentations and discussions indicated a preference for immediate dismantling if all legal and technical requirements are in place.

Nowadays, 93 reactors in the EU are in shutdown mode and more than 75% of operating reactors are over 30 years old. It is estimated that about 50 additional reactors will be closed by 2025. Mature dismantling and waste management technologies are present with the exception of graphite waste.

The following issues arose from the discussion:

- Decommissioning raises challenges in terms of transparency, choosing adequate methodologies, knowledge management, costs assessment, and associated provisions.
- It is important to standardize decommissioning approaches to ensure getting the most benefit in terms of safety, timing and costs from the first successful projects already ongoing in Europe
- It is important to define in detail what is considered as the 'decommissioning end state' of a nuclear installation in Europe in order to have homogenous cost evaluations.
- The issue of the 'polluter pays' principle applying to the nuclear sector was also raised.

Session 3

This session featured speakers representing the EC, a national regulatory perspective (Finland), an international regulatory perspective (the OECD Multinational Design Evaluation Program) as well as points of view from an industry certification organisation (AFCEN) and European industry (Foratom supply chain committee).

The panellists addressed the standardisation of the nuclear industry supply chain as well as component obsolescence, an issue several Member States are facing in the context of long-term operation (LTO) and new build.

Opening the discussion, Commission DDG Thomas stressed the need for setting up in Europe a solid and competitive supply chain that meets the highest safety criteria, notably the safety objectives stemming from the revised EU Nuclear Safety Directive. In addition to nuclear material research under the Euratom programme, the Commission contributes to this goal in the framework of Horizon 2020, with research funds for material science.

In all nuclear installations, ageing components need to be replaced at the appropriate time. Due to the long lifetime of these installations, one of the key challenges in this area is 'obsolescence of components'.

Operators of nuclear installations are now sometimes facing a difficult choice between the replacement of obsolete licensed components with identical ones that need to be designed and manufactured again and licensing and use of new components, developed with more recent technologies, but that are currently used in other types of industries and not licensed specifically for a nuclear environment.

Moreover, the existence of different construction codes developed at national levels in a non-harmonized way creates additional challenges. Nevertheless, solutions are being

explored at the national level. For instance, the Nordic and most specifically the Finnish utilities are quite active in promoting simplification and standardisation of nuclear equipment procurement, thus supporting the EU supply chain. This initiative is being accompanied by the Finnish regulatory body STUK. There are also international initiatives: AFCEN presented the CEN Workshop 64 by the European Committee for Standardization and Foratom presented their activities related to the supply chain optimisation.

Session 4

In the final session, issues of knowledge management and skills preservation were discussed by panellists from Spain and Sweden (regulators), China (technical safety organisation), the IAEA, and European nuclear engineering education networks (Italy and the pan-Europe ENEN network).

While the safe use of nuclear technology in the long term greatly depends on the quality of components, it relies even more on a well-trained and specialised workforce. The ageing of the nuclear workforce is a reality in many countries. Also, in several countries, decommissioning decisions have discouraged potential students from choosing the nuclear sector, while operation of nuclear reactors may still be planned for a considerable time span and decommissioning work will have to be performed and monitored for several decades.

At the EU level, the European nuclear education network (ENEN) is acting to preserve and develop expertise in the nuclear field by exchanges of teachers/students, accreditation in academic education, and facilitating coordination among stakeholders. The IAEA has developed programmes strengthening nuclear safety through improved knowledge management. There are also numerous national and regional programmes in place to support the same aim.

During the discussion, a civil society representative suggested opening nuclear education programmes to training provided by NGOs in order to broaden their knowledge and vision, a suggestion that was accepted for discussion by panellists.

Closing of the Conference

Referring to the first EU TPR on ageing management, the Conference President Stefano Laporta underlined that national action plans were expected by next September. On the next TPR, he stressed the importance of evaluating the resulting impact on the ground as well as the possibility of organising on-site visits during the next TPR.

On decommissioning, the definition of methods on cost assessment is a challenge. There is a need for a holistic approach for waste treatment and conditioning, interim storage, dismantling activities, material management and waste disposal.

As regards the supply chain, challenges include the unavailability of qualified and willing suppliers and the fact that the low level of activity in commissioning of new NPPs in the EU could cause problems for supplies of qualified components. There is a need for increased collaboration within the nuclear sector, both cross-border and with other industry sectors, such as aviation.

On skills preservation, there is a need to support academia and foster connections with industry and regulators. Knowledge management and skills preservation, including for craft skills like welding, are components of the supply chain. National workforce plans are needed to identify future needs and how to fulfil those needs.