



**Report of the
European Nuclear Safety Regulators Group
(ENSREG)**

May 2024

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EXECUTIVE SUMMARY

This eighth report from the European Nuclear Safety Regulators Group (ENSREG) covers activities carried out in 2022 and 2023.

As an expert advisory group to the European Commission (the Commission), ENSREG's priorities include promoting the highest nuclear safety standards and ensuring continuous improvement in nuclear safety and in the safe management of spent fuel and radioactive waste while maintaining full openness and transparency to the public and key stakeholders.

The main work carried out by ENSREG during the period covered by this report included:

- Follow up of the first topical peer review (TPR) on ageing management and launch of the second TPR on fire protection.
- Follow up on the implementation of the post Fukushima stress test national action plans (NACPs). At the end of 2023, four EU Member States still had open actions. As explained in the 7th ENSREG activity report, a thorough implementation of the measures is considered more important than rapid implementation alone, thus ensuring that nuclear safety is not compromised despite some delays.
- Support to the conduct of Integrated Regulatory Review Service (IRRS)¹ and Integrated Review Service for Radioactive Waste and Spent Fuel Management, Decommissioning and Remediation (ARTEMIS)² peer reviews in coordination with the International Atomic Energy Agency (IAEA), while seeking greater efficiency and synergies between both programmes. During 2022, the first cycle of IRRS peer reviews was completed in all EU Member States, and, by the end of 2023, all EU Member States had hosted an ARTEMIS peer review.
- Conduct and follow up of post-Fukushima stress tests in EU neighbouring countries with the focus on the ongoing peer review of the updated stress test national report for Türkiye, covering developments regarding the Akkuyu nuclear power plant (NPP) project.
- Monitoring, together with the Commission, of any potential impacts of the Russian war of aggression against Ukraine on nuclear safety. ENSREG issued five statements strongly condemning the Russian military attacks on NPPs and the Ukrainian electrical grid, that have considerably increased the risk of severe radiological consequences.
- Participating in the Steering Committee of the European Small Modular Reactor (SMR) pre-Partnership and leading its Work Stream 2 with the aim to promote cooperation of interested regulators to carry out a joint review on a mature design or an innovative technology and its dissemination with other regulators confronted with that design or technology at a later stage.
- Advising the Commission on specific elements concerning spent fuel and radioactive waste management and decommissioning. ENSREG adopted the technical position on the progress towards implementation of national programmes on safe and long-term management of spent fuel and radioactive waste and key performance indicators; the final reports on the surveys of Euratom Member States' approaches to the definition of the starting point and the end state of decommissioning, and the regulation and management of radioactive waste arising from non-energy uses of nuclear and radiation technologies.
- Organising the sixth European Nuclear Safety Conference which covered several topics, including nuclear safety in times of major crises, such as Russia's war of aggression against Ukraine or a pandemic, and regulatory challenges related to innovative designs, such as SMRs.

¹ <https://www.iaea.org/services/review-missions/integrated-regulatory-review-service-irrs>

² <https://www.iaea.org/services/review-missions/integrated-review-service-for-radioactive-waste-and-spent-fuel-management-decommissioning-and-remediation-artemis>

1. INTRODUCTION

This is the eighth report on European Nuclear Safety Regulators Group's (ENSREG's) activities since it was established in May 2007. Issued every 2 years since 2009, these reports are intended to inform the Council of the European Union and the European Parliament of ENSREG's work to improve the safety of nuclear installations and spent fuel and radioactive waste management in EU Member States. The period of the current report is covered by the ENSREG work programme for the years 2021-2023³.

1.1. ENSREG's composition

ENSREG is composed of senior representatives of the EU Member States' regulatory or safety authorities competent in the areas of the safety of nuclear installations and the safe management of spent fuel and radioactive waste⁴. Several non-EU countries (Norway, Switzerland, Türkiye, Ukraine, United Kingdom) and international organisations (European Council, the International Atomic Energy Agency (IAEA), Heads of the European Radiological Protection Competent Authorities (HERCA), OECD Nuclear Energy Agency (OECD NEA), Western European Nuclear Regulators Association (WENRA) have observer status in ENSREG.

Belarus had an observer status in ENSREG until March 2022 when its observer status was suspended following Belarus' involvement in Russia's illegal war in Ukraine. ENSREG decided to invite HERCA to join the group as observer at its 52nd plenary on 24 April 2023.

ENSREG currently has three working groups to carry out its work programme:

- **Working Group 1 (WG1)** – Improving Nuclear Safety Arrangements and International Cooperation;
- **Working Group 2 (WG2)** – Improving Safety of Radioactive Waste Management, Spent Fuel and Decommissioning;
- **Working Group 3 (WG3)** – Improving Transparency Arrangements.

Furthermore, ENSREG has two boards: the Board for Stress Tests in Third Countries and the Topical Peer Review Board.

2. MAIN ACTIVITIES OF ENSREG IN 2022-2023

2.1. EU topical peer reviews

The amended Nuclear Safety Directive⁵ introduced a system of topical peer reviews to provide a mechanism for Member States to examine topics of importance to nuclear safety, exchange experiences and identify opportunities to strengthen nuclear safety, and included the obligation for Member States to start the first topical peer review in 2017; subsequent reviews should take place at least every 6 years. The process also enables EU neighbouring countries and other non-EU countries to participate in nuclear safety peer review exercises on a voluntary basis. During the Seventh Review Meeting of the Contracting Parties to the Convention on Nuclear Safety in 2017, IAEA recognised this first topical peer review as one of the four good practices identified by the Review Meeting.

First topical peer review on ageing management

In 2021, Member States and other participating countries reported on the implementation of their national action plans following the first topical peer review on ageing management that took place in 2017-2018. France submitted a closure report. ENSREG adopted a summary

³ <https://www.ensreg.eu/document/ensreg-work-programme-2021-23>

⁴ <https://www.ensreg.eu/members-glance/national-regulators>

⁵ The Council Directive 2009/71/Euratom establishing a Community framework for the safety of nuclear installations (OJ L 172, 2.7.2009, p. 18–22), amended by Council Directive 2014/87/Euratom (OJ L 219, 25.7.2014 p. 42–52)

report⁶ in November 2021 on the implementation of the 2019 ENSREG Action Plan⁷, also taking into account the updated NAcPs.

At the end of 2023, sixteen countries submitted updates of their NAcPs giving implementation status. At the time, nine from eighteen countries had completed the implementation of their NAcPs.

Second topical peer review on fire protection

ENSREG chose fire protection as the topic for TPR-II, noting the importance of the topic to nuclear safety and following recommendations by WENRA to include a broad range of nuclear installations in the scope of TPR-II. TPR-II relates to different types of installations, including NPPs, research reactors and other nuclear installations. The scope of TPR-II also includes waste storage facilities on the sites of nuclear installations, spent fuel storage facilities as well as decommissioning activities. ENSREG established a TPR Board to steer and oversee the TPR process.

The draft technical specifications and the terms of reference as well as a stakeholder engagement plan were endorsed by ENSREG on the basis of which national self-assessments on 'fire protection' commenced in July 2022.

Given the large number of nuclear installations to be reviewed, WENRA developed an approach for a pre-selection amongst the installations reported on in the national assessment reports. An additional step in the process was introduced involving the TPR Board's review of the national selection of installations subject to the peer review. The Board issued a report and recommendations for ensuring consistency of approach.

During 2023, the Board developed procedures to allow a structured peer review of the ~120 candidate installations involving the 37 national experts, in the three thematic areas: fire safety analysis, active fire protection, passive fire protection & fire-prevention. It was concluded that there would not be enough experts to carry out a full review for certain installation types/thematics. Despite these challenges, the experts' desktop peer review of the 21 national assessment reports submitted by the end of 2023 commenced. In addition, for the identification of sites that could be prioritised for peer review visits, selection criteria and information questionnaires were drawn up. Templates were developed for the country review reports. The national reports were also made available publicly on the ENSREG website⁸ and a survey form was opened to allow stakeholders to send their questions.

Public engagement in the EU Topical Peer Review process

ENSREG's WG3 continued to work on enhancing public engagement in the EU Topical Peer Review process.

A **poster and a flyer on TPR-II** was produced and made available for the IAEA general conference and the World Nuclear Exhibition in 2023.

ENSREG adopted a **stakeholder engagement plan**⁹, which identifies activities to strengthen engagement with all stakeholders including the public, industry, regulatory authorities, government bodies and other interested parties, such as non-governmental organisations. Full transparency and proactive information towards the public should contribute to raising the awareness among European citizens of the EU TPR process.

One of the activities of the plan is to establish a **standing TPR Focus Group**. The Focus Group should enable different stakeholders to closely follow TPR activities and to provide input on a regular basis. It shall foster actual participation and collect relevant contributions and increase knowledge about TPR. This should be a balanced group, including experts with specific knowledge about the respective topic. The dedicated WG3 task group drafted a

⁶ [status_report.pdf \(ensreg.eu\)](https://www.ensreg.eu/sites/default/files/attachments/status_report.pdf)

⁷ https://www.ensreg.eu/sites/default/files/attachments/first_tpr_action_plan.pdf

⁸ <https://www.ensreg.eu/country-specific-reports-tpr-2>

⁹ <https://www.ensreg.eu/tpr-2-background>

proposal for the Terms of Reference of the Focus Group. The 53rd ENSREG plenary decided to continue with the development of the proposal after the TPR-II stakeholders' participation phase.

2.2 Follow-up on implementing post-Fukushima national action plans

In the aftermath of the Fukushima nuclear accident, all NPPs in Euratom Member States were reviewed on the basis of a comprehensive and transparent risk and safety assessment ('stress tests'), drawing on the lessons learnt from the accident.

National action plans describing measures to improve nuclear safety, together with an implementation timetable were prepared by each country participating in these stress tests. All participating countries remain committed to fully implementing the improvement measures identified in their respective NAcPs during the peer review workshops in 2013 and 2015. Since 2017, countries with still open actions publish a status report every 2 years on the update of their NAcPs until completion of the actions. The latest updates from the end of 2023 are published on the ENSREG website together with the previous updates.

By the end of 2023, a few actions, including containment integrity and construction of fire stations and emergency control centres, remained to be implemented in four participating Member States, a very low proportion of the original NAcP actions. In 2022-2023 Slovenia presented its report on the closure of all actions under their NAcPs to WG1 for review. Most remaining actions are expected to be completed during 2024, with two extended to 2026.

The topic of delays to the original NAcP schedule was addressed in detail in the seventh ENSREG report. As previously reported, the national regulators determine the acceptability of delays versus the overall safety improvement activities that are ongoing, e.g., from periodic safety reviews, and a thorough implementation of the measures is considered more important than rapid implementation alone, thus ensuring that nuclear safety is not compromised.

Nevertheless, ENSREG recognises the importance of the completion of the small number of remaining safety related activities, both in terms of the credibility of the overall stress tests process, and the significance of some of the remaining measures. Every two years, ENSREG publishes a summary report updating on the implementation of the NAcPs. The next report on the updated NAcPs submitted at the end of 2023 will be published in 2024. The report should address the follow-up of those actions still open.

2.3. International cooperation in nuclear safety: stress tests in non-EU countries

Non-EU countries are invited to participate in the post-Fukushima peer review stress tests. During 2022-2023, ENSREG continued to follow-up the stress tests peer review in Armenia and Türkiye. Follow-up of the Belarus stress test peer review was suspended.

Türkiye

Türkiye submitted a Stress Test National Report in 2012. In 2019, Türkiye submitted an update of the Stress Test National Report, covering developments regarding the Akkuyu nuclear power project.

On the basis of the report, ENSREG launched the stress tests at the end of 2021. A document review and initial exchanges with the Turkish National Nuclear Regulatory Authority (NDK) took place during an initial visit in May 2022. The full peer review originally foreseen for 2023 has been rescheduled given some delays in the construction of the NPP. It is now scheduled to take place in the first half of 2024. The team composition has been updated taking into consideration that some experts were no longer available.

Armenia

The implementation of the Armenian NAcP following the peer review of the national stress test report for the Metsamor NPP is being followed up every two years, as not all actions have been finalised. In its 53rd plenary meeting on 20 November 2023, ENSREG decided that an online

workshop with the ANRA should also take place to ensure timely transmission of the most recent information from Armenia. All reports related to this peer review are available on the ENSREG website¹⁰.

Belarus

Since the beginning of the Russian war of aggression in Ukraine on 24 February 2022, the follow-up actions of the Belarus NAcP following the peer review of the national stress test report for the Astravets NPP have been suspended, including an exchange with the Belarusian stakeholders and representatives of the civil society. In the meantime, the Belarus government has announced both units 1 and 2 in Astravets NPP to be operational. All reports related to this peer review are available on the ENSREG website¹¹.

Other countries

The ENSREG Board for Stress Tests in Third Countries was also monitoring the progress with regard to Iran's submission of its stress test report on the Bushehr NPP as well as the potential interest of Egypt to hold the stress test peer review of the EI Dabaa NPP which is in the process of construction.

2.4. IRRS and ARTEMIS missions to EU Member States: programme and pool of experts

To meet the peer review obligations and in keeping with the spirit of Article 8e(1) of the amended Nuclear Safety Directive and Article 14(3) of the Radioactive Waste and Spent Fuel Management Directive¹² on self-assessments and international peer reviews, Member States use the IRRS and ARTEMIS peer review services of the IAEA financed by the EU.

The EU IRRS programme is coordinated by WG1 and the EU ARTEMIS programme by WG2, both in cooperation with IAEA, to maintain the schedule of peer review missions, a list of EU experts and national contact points. The availability of EU experts contributes towards implementation of the EU peer review programmes and ensures an effective Member State participation. In early 2023, approximately 280 experts were available, subject to an ongoing review and update by ENSREG and IAEA.

Activities in the current reporting period showed a recovery from the pandemic with 10 initial IRRS missions and one follow-up mission, and the completion of the first 10-year cycle of IRRS peer reviews. There were 19 ARTEMIS missions during the same period, largely due to Member States ensuring they met the deadline for their first peer review of this type (August 2023) and the delays caused by the pandemic.

The sub-group looking at synergies between the IRRS and ARTEMIS peer review programmes has continued its work, with representatives from both WG1 and WG2. The focus remains on 'back to back' missions i.e. IRRS and ARTEMIS missions held closely together within a window of a few months, so as to avoid overlap between the scope of the respective missions. The subgroup has also held meetings with IAEA, to agree a common approach and to share relevant information.

For its part, the IAEA has prepared draft supplementary guidelines on the conduct of 'back to back' IRRS and ARTEMIS mission and these were applied in the seven 'back to back' missions that took place. Following feedback from these missions, IAEA hopes to finalise the supplementary guidelines during 2024.

In recognition of the IRRS's and ARTEMIS roles in allowing Member States to carry out the peer review required under Article 8e(1) of the amended Nuclear Safety Directive and Article 14(3) of the Radioactive Waste and Spent Fuel Management Directive, the Commission

¹⁰ [Armenia | ENSREG](#)

¹¹ [Belarus | ENSREG](#)

¹² Council Directive 2011/70/Euratom establishing a Community framework for the responsible and safe management of spent fuel and radioactive waste (OJ L 199, 2.8.2011, p.48-56)

supports the IRRS and ARTEMIS programmes financially. Part of the support is reserved for activities that explore the synergies between the two peer review programmes, taking into account the work carried out by ENSREG in this area, as appropriate.

In October 2023, an international IAEA workshop on the experience of IRRS missions took place and ENSREG organised a workshop in cooperation with IAEA on the specific experience of IRRS missions in Euratom Member States, including IRRS-ARTEMIS “back-to-back missions”.

3. OTHER ACTIVITIES RELATED TO SAFETY OF NUCLEAR INSTALLATIONS

3.1. Member States’ reports under Article 9(1) of the amended Nuclear Safety Directive

Under the amended Nuclear Safety Directive, the reporting requirements for Member States were amended. It specified that Member States should submit a report 'on the implementation of this Directive [...] by 22 July 2020', i.e. there would be no further reporting on the implementation of the Directive. On 21 April 2022, the Commission adopted its report to the European Parliament and the Council on the progress made with the implementation of the Directive¹³, accompanied by a detailed Staff Working Document¹⁴.

The report is based on the national reports submitted by the Member States in 2020, but also takes into account findings from the assessment of the Directive’s transposition, results of the EU post-Fukushima stress tests and TPR-I, conclusions of international reviews, and issues raised by EU citizens and other EU institutions. It concludes that there is a good overall level of implementation of the Directive’s obligations and at the same time presents a number of observations addressed to the Member States on nuclear safety governance and technical aspects, building on the good practices and challenges identified. Furthermore, the report highlights several areas where there is scope for future action at the EU level to continuously improve nuclear safety in the Euratom Member States. These actions would contribute to enhancing the independence of the regulatory authorities, strengthening the capabilities of licence holders, consolidating safety culture and transparency, supporting the application of the nuclear safety objective and making the Euratom peer-reviews more effective.

The Commission is following-up, with the support of a contractor and taking duly into account the exchanges with the ENSREG members, the following priority topics: (i) strengthening regulatory capacities and guarantees of full regulatory independence; (ii) increasing mutual understanding of application of the nuclear safety objective; and (iii) specific aspects of nuclear safety culture underpinning (i) and (ii). ENSREG, and specifically WG1, is involved in the discussions with the contractor, as its representative is a member of the Steering Group, the role of which is to comment and provide directions on the key initial, intermediate and final outputs of the study. Further follow-up activities to the implementation report are taken up in the ENSREG work programme 2024-2026.

3.2. Response to the Russian war of aggression against Ukraine

In February 2022, Russia launched its war of aggression against Ukraine. On 24 February 2022 Ukraine informed the IAEA that Russian forces had taken control of all facilities at the Chernobyl NPP site. Control of the site returned to Ukrainian personnel on 31 March 2022. In the early hours of 4 March 2022, the Zaporizhzhia NPP in southeastern Ukraine was attacked by Russian forces and taken under their control. Since September 2022, the IAEA has established a continuous presence of IAEA staff at the Zaporizhzhia NPP and since January 2023, the IAEA has a permanent presence at all Ukraine's NPPs in order to closely monitor developments on-site and provide impartial and verified information to the broader international community.

¹³ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52022DC0173&qid=1709651102732>

¹⁴ [EUR-Lex - 52022SC0107 - EN - EUR-Lex \(europa.eu\)](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52022SC0107)

In response to the outbreak of the war in Ukraine, ENSREG held an extraordinary online plenary on 27 February 2022, to discuss the potential risks the war could cause to the nuclear safety in Ukraine and abroad, and the possibilities of its support to Ukraine. This meeting was followed by three more extraordinary plenary meetings that took place on 6 and 10 March, and 4 October, 2022. The nuclear safety situation in Ukraine continued to feature high on the agenda of the four regular plenary meetings in 2022 and 2023, with the participation of the Ukrainian State Nuclear Regulator (SNRIU) providing updates on the nuclear safety situation. ENSREG has issued five statements strongly condemning Russia's military attacks on the Ukrainian NPPs and the electrical grid, that have considerably increased the risk of severe radiological consequences. ENSREG urged Russia to immediately cease all actions against, and at, any nuclear facility in Ukraine and allow the competent Ukrainian authorities to regain full control over all nuclear facilities within Ukraine's internationally recognised borders. All ENSREG statements were published on the ENSREG website¹⁵.

In addition, ENSREG members worked with their governments and permanent missions to the IAEA, in preparation for the Joint Eighth and Ninth Review Meeting of the Contracting Parties to the Convention on Nuclear Safety, with the aim of producing a common position on the impact that Russia's wide-spread and targeted attacks have on the safety of nuclear facilities and the integrity of the electrical infrastructure in Ukraine. As a result, the issue was highlighted in national reports and/or presentations by Euratom and a number of Euratom Member States and like-minded non-EU countries and reflected in the summary report of the review meeting¹⁶.

3.3. ENSREG's involvement in the European SMR pre-Partnership

Following the first Commission workshop on Small Modular Reactors on 29 June 2021, it took the initiative to establish a European SMR pre-Partnership¹⁷. ENSREG agreed to participate in this pre-Partnership, both with a representative at the Steering Committee level as well as by organising Work Stream 2 (WS2) of this pre-Partnership, on licensing.

WS2 activities

The main objective of the European SMR pre-Partnership WS2 was to promote cooperation of interested regulators to carry out a joint review on a mature design or an innovative technology and its dissemination with other regulators confronted with that design or technology at a later stage.

ENSREG Members had nominated 20 experts from 15 EU countries to WS2, one industry representative from European Nuclear Installations Safety Standards Initiative (ENISS) also participated as a member to this WS2.

The main WS2 activities were focused on:

- first review of NPPs licensing processes in different Euratom Member States interested in SMR licensing (Czech Republic, France, Finland, Romania, Poland, Sweden);
- establishing a clear state of play of activities in other fora (IAEA Nuclear Harmonisation and Standardisation Initiative (NHSI), SMR Regulatory Forum, NEA committees, WENRA, European Utility Requirements Association (EUR), ENISS, World Nuclear Association's working group on cooperation in reactor design evaluation and licensing (CORDEL), etc.) in relation to SMR licensing;
- interacting with the European SMR pre-Partnership workstream dealing with supply chain adaptation (WS4) on safety related codes & standards (C&S);

¹⁵ [ENSREG statement on Ukraine 27 February 2022 | ENSREG](#);
[ENSREG statement on Ukraine 6 March 2022 | ENSREG](#);
[ENSREG statement on Ukraine 10 March 2022 | ENSREG](#);
[ENSREG Statement on Ukraine 4 October 2022 | ENSREG](#);
[ENSREG Statement on Ukraine 24 November 2022 | ENSREG](#).

¹⁶ [23-01280e_cns8_9rm2023_08_final.pdf \(iaea.org\)](#)

¹⁷ [European SMR pre-Partnership - nucleareurope](#)

- interacting with the European SMR pre-Partnership workstream dealing with research and innovation (WS5) on different topics and reviewing the outcomes of some Euratom H2020 projects related to the licensing of SMRs.

WS2 results and follow-up

In July 2023, the draft reports of the European SMR pre-Partnership workstreams as well as a document on the way forward were published¹⁸. The WS2 document was also published on the ENSREG website¹⁹.

The WS2 report highlights that a preliminary regulatory assessment of new designs is widely recognised as a means to allow early identification of potential regulatory issues, lack of specific requirements, needs for complementary experiments as well as to anticipate specific regulatory concerns etc. Even if the authorisation of nuclear installations remains the sovereign responsibility of Member States, cooperation between regulators on the pre-assessment of SMR concepts is an opportunity to share regulators' approach and expectations. It also provides the SMR designer and the future licensees with an idea of the licensability of such a design across several countries with different regulations. Therefore, regulators of interested countries are encouraged to collaborate in order to conduct a preliminary joint review of selected designs, the outcomes of which could then be used in the national licensing process as needed.

In view of further supporting efforts to facilitate SMR pre-licensing in European countries, several objectives emerged and actions to address them were identified:

- engage in an early dialogue among designers, licensees and regulators on the main elements of the design options;
- promote cooperation of interested regulators to carry out a joint safety pre-assessment on a mature design and its dissemination with other regulators confronted with that design at a later stage;
- identify in an early phase potential blocking points in the safety requirements or licensing processes and arrangements for convergence.

As a further step, with the support expressed by a group of Member States and a broad range of industrial stakeholders during the European SMR pre-Partnership Stakeholders' Forum on 26 October 2023, European Commission decided to launch the European Industrial Alliance on SMRs.

In its 53rd plenary of 20 November 2023, ENSREG took the decision not to become a full member of the future Industrial Alliance, but to define a strong mechanism of interaction with it, while underscoring the nuclear safety regulators' independence from industry as well as from activities promoting specific nuclear technologies, designs or projects.

3.4. Initiative on counterfeit, fraudulent and suspect items (CFSI)

Following its inclusion in the ENSREG work programme for 2018-2020, WG1 established a sub-group to address the issue of counterfeit, fraudulent and suspect items in the supply chain with the focus on inspection practices. The sub-group intended to hold a workshop for its participating members, where regulators could share their practices. There was no further progress during the period covered by the report. The topic will remain on the 2024-26 ENSREG Work Programme.

3.5. Advice on EU Instrument for International Nuclear Safety Cooperation (EU-INSC)

¹⁸ [European SMR pre-Partnership - nucleareurope](#)

¹⁹ <https://www.ensreg.eu/document/european-smr-pre-partnership-report-ws2-licensing>

In October 2023, the Commission (DG INTPA and EEAS) invited ENSREG, along with other stakeholders to provide feedback on the mid-term review of the Review of the EU Instrument for International Nuclear Safety Cooperation (EU-INSC). WG1 prepared a statement, which was approved by the plenary and submitted to DG INTPA and EEAS. ENSREG members were also able to comment independently.

As a conclusion, ENSREG considered that the INSC Multiannual Indicative Programme (MIP) 2021-2027 is sufficiently flexible in responding to emerging challenges in nuclear safety and spent fuel and radioactive waste management. It was suggested that the sources earmarked for the MIP should not divert from its original purpose and scope and the annual Action Plans should be based strictly on technical issues to be solved in the area of nuclear safety and spent fuel and radioactive waste management, focused but not limited to improving the regulatory framework in Africa, Central Asia, Jordan, Ukraine, Iran, Türkiye and Georgia. ENSREG suggested no substantial change, but asked INTPA to inform its WG 1 regularly in a comprehensive manner about implementation of the instrument.

4. OTHER SAFE MANAGEMENT OF SPENT FUEL AND RADIOACTIVE WASTE RELATED ACTIVITIES

4.1. Key performance indicators

In 2022, the Commission published a study on key performance indicators for monitoring implementation of national programmes on safe and long-term management of spent fuel and radioactive waste²⁰.

On the basis of the outcomes of the Commission study, a dedicated WG2 subgroup issued its technical position providing elements of clarification and guidance to Member States on the tools for monitoring progress achieved in the implementation of national policies through their national programmes, and the role of key performance indicators in this respect. The technical position was published in November 2023²¹.

4.2. End state of decommissioning

In 2021, a subgroup appointed within the WG2 prepared a questionnaire on Member States' approaches to characterising the starting point and defining the end state of decommissioning. Twenty-one Member States, plus the United Kingdom, provided answers. Only six EU countries, with no significant nuclear activity on their territory, did not reply to the questionnaire. On the basis of the answers received, WG2 issued a report providing an overview of the different policies, strategies and approaches in the licensing regime for nuclear decommissioning in the EU. The report was published in November 2023²².

4.3. Management of non-nuclear power related waste

In line with the SAMIRA action plan on medical ionising radiation applications, which is a contribution to Europe's Beating Cancer Plan, ENSREG reviewed the approaches in regulation and management of radioactive waste arising from non-energy uses of nuclear and radiation technologies.

In 2022, a dedicated WG2 subgroup prepared a questionnaire about regulatory frameworks and the current management practices of radioactive waste arising from the use of nuclear and radiation technologies in activities linked to nuclear medicine application, including radioactive waste coming from the production of radioisotopes used in the applications, and decommissioning of production facilities. Twenty-six Member States answered the survey, and additional input was received from Norway and Switzerland.

On the basis of the answers received, WG2 issued a report showing that no particular overarching themes regarding the legal and organisational framework for the management of

²⁰ <https://op.europa.eu/s/zhmv>

²¹ <https://www.ensreg.eu/document/technical-position-kpis-october-2023>

²² <https://www.ensreg.eu/document/comparison-national-policies-decommissioning-october-2023>

radioactive waste arising from nuclear medicine applications have been identified. The responses have revealed that the management of radioactive waste arising from nuclear medicine applications is widely integrated into the general national provisions for the management of radioactive waste. The report was published in November 2023²³.

The outcomes suggest that WG2 should continue to explore the specific management aspects by promoting the sharing the practical experiences regarding the management of radioactive waste in the medical sector.

5. OTHER OPENNESS AND TRANSPARENCY RELATED ACTIVITIES

5.1 ENSREG website²⁴

The project of creating a new, more user friendly and better designed website on the Europa domain (europa.eu) and to transfer all the content of the current website to the new one is ongoing and well advanced. The ENSREG secretariat extended the current hosting contract until October 2024 so that the process is finalised properly and securely.

5.2 ENSREG conference on nuclear safety

The sixth European Nuclear Safety Conference should have taken place in 2021, but was postponed due to the Covid-19 pandemic restrictions. It took place on 20 and 21 June 2022 in Brussels. As most of the Covid-19 related measures had been lifted, it was a successful in-person event with more than 230 registered participants, including the speakers. The conference was also web streamed.

One of the focuses of the conference was nuclear safety in times of major crises, such as Russia's war of aggression against Ukraine or a pandemic. Other topics were the public participation in waste management and long-term operation of NPPs, regulatory challenges that represent innovative designs, such as small modular reactors, and how to choose key topics of research in nuclear safety.

5.3. Specific communication plans for ENSREG activities

Given the increasing importance of ENSREG communication needs, in November 2022, ENSREG adopted its communication strategy²⁵. The strategy covers internal and external communication, target audiences, opportunities for communicating, main communication channels and design of an evaluation and feedback mechanism.

6. CONCLUSIONS

During the reporting period, ENSREG continued to demonstrate its efficiency in enhancing and promoting nuclear safety in the EU and internationally, and in advising the Commission on the improvement of the management of spent fuel and radioactive waste and its regulation, in accordance with the amended Nuclear Safety Directive, the Spent Fuel and Radioactive Waste Directive and the Basic Safety Standards Directive²⁶.

Overall, ENSREG has well progressed in the implementation of its work programme for 2021-2023 and achieved expected outcomes, while taking on board and dealing with new unplanned tasks and unexpected challenges.

During the next reporting period, ENSREG will continue to play a central role in improving nuclear safety and the management and regulation of radioactive waste and spent fuel through a range of activities that include:

- preparing a summary report of the first EU topical peer review and continuing the second EU topical peer review;

²³ <https://www.ensreg.eu/document/survey-medical-radioactive-waste-management-october-2023>

²⁴ <http://www.ensreg.eu>

²⁵ [ENSREG Communication Strategy | ENSREG](#)

²⁶ Council Directive 2013/59/EURATOM laying down basic safety standards for protection against dangers arising from exposure to ionising radiation (OJ L 13, 17.1.2014, p. 1-73)

- continuing the post-Fukushima stress tests implementation in non-EU countries, in particular, finalising the peer review in Türkiye;
- continuing to monitor the nuclear safety situation in Ukraine and reflecting on ways to strengthen nuclear safety in the context of armed conflicts, based on the experience related to the Russia's war of aggression in Ukraine;
- providing expertise and advice to the Commission on questions pertaining to the development of nuclear energy policy and new nuclear technologies, including the definition of new concepts, such as accident-tolerant fuel.

ENSREG will also continue to promote openness and transparency in the above-mentioned areas and will finalise the creation of a more user friendly and better designed website on the Europa domain.

7. REFERENCES

All documents made publicly available by ENSREG can be downloaded from the ENSREG website²⁷.

²⁷ <http://www.ensreg.eu/documents>