



INFORMATION SYSTEM ON OCCUPATIONAL EXPOSURE

35TH MEETING OF ISOE MANAGEMENT BOARD

SUMMARY RECORD

10-12 DECEMBER 2025

HYBRID

M4, Ground Floor, M Building, VIC, IAEA, VIENNA, AUSTRIA AND ONLINE

35TH MEETING OF ISOE MANAGEMENT BOARD

Hybrid

M4, Ground Floor, M Building, VIC, IAEA, Vienne, Austria and online

10-12 December 2025

SUMMARY RECORD

The 35th meeting of the ISOE Management Board (MB) was held on 10 to 12 December 2025 at the International Atomic Energy Agency's (IAEA) Headquarters in Vienna, Austria. Videoconference option was also available.

All documents, presentations and supporting materials considered at the meeting are available on the ISOE network website under "[Activities > Management Board > Year 2025](#)".

This Summary Record includes the following Annexes:

- Annex 1: List of Participants
- Annex 2: Agenda
- Annex 3: Decisions, Agreements, Commitments, Actions and Recommendations

The 35th ISOE Management Board meeting took place over three days, bringing together radiation protection experts, national coordinators, technical centres, and international organisations to evaluate the ISOE programme's performance, discuss technical developments, and plan future activities. The meeting covered operational updates, data management, membership matters, technical innovations, and strategic planning for 2026.

1. Opening Session

The meeting commenced with welcoming remarks by the ISOE Chair, Vice Chair, and the ISOE Joint Secretariat, expressing gratitude to the IAEA for hosting the hybrid meeting and acknowledging the significant preparatory work by Technical Centres.

An overview reaffirmed ISOE's long-standing role since 1992 in fostering international collaboration in occupational radiation protection. Recent events, notably the successful 2025 ISOE International Symposium in China and multiple IAEA and Nuclear Energy Agency (NEA) conferences and workshops, were highlighted as important platforms for global knowledge exchange.

2. Adoption of agenda

Logistical information was provided, and the agenda focused on programme updates, data quality, technical developments, country experiences, membership matters, and forward planning.

3. Review of the “Feedback on the summary of decisions, agreements, commitments, actions and recommendations from the Summary Record of the 34th ISOE MB meeting, 3-5 December 2024”

A thorough review of previous meeting actions confirmed that ISOE preparations for the 2025 NEA Committee on Radiological Protection and Public Health (CRPPH) meeting inputs were complete, it was noted the 2021 annual report was published in April 2025 and the 2022 annual report was ready for NEA senior management approval, and country data submissions for 2023 was complete and 2024 remained partly outstanding. The remaining country reports for 2024 are Finland, Germany, Mexico, Romania, Slovak Republic and US.

Technical Centres (TCs) reiterated the need for consistent templates, correct units, and rigorous national level quality control before submission to the Secretariat. The group acknowledged continuing delays in some voluntary financial contributions and encouraged renewed engagement with non-contributing countries. The North America TC (NATC) provided updates on income and challenges affecting contributions.

4. ISOE Programme achievements in 2025

TCs reported significant achievements in 2025, including international symposium and regional meetings. The 2025 International Symposium in Weihai gathered 88 participants from 13 countries, and regional symposia in North America and Asia hosted benchmarking meetings and recognised innovation and dose reduction achievements.

A European webinar for Radiation Protection Managers (RPMs) organised by ETC in October 2025 provided a platform to discuss eye lens dose management, reactor lifetime extension, and alpha value usage.

Regarding the database and submission status, although validation of the reactor questionnaires progressed, many countries still had missing or delayed data, and the technical centres reported on their ongoing efforts to clear backlogs and improve overall completeness.

Efforts included encouraging younger generations to participate in symposia, assigning students to data collection tasks, and sharing career development stories.

5. Performance indicators of the ISOE TCs

ETC reported data collection from 89% of operating and decommissioning units, with four country reports still missing, and highlighted preparations for the 26th ISOE International Symposium, training, and participation in working groups. NATC reported only 19% data collection and described major challenges stemming from recent US policy changes affecting ALARA, funding, and programme implementation, while noting progress on data clarification, unit restarts, and exchange activities. ATC reported a 98% data collection rate, updated country reports, and successful domestic meetings and benchmarking exchanges. The IAEA TC reported slightly reduced data completeness due to one missing plant dataset, receipt of a first-ever report from Belarus, and organisation of an international symposium and a training course.

6. Working Group on Radiological Protection Aspects of Decommissioning Activities at Nuclear Power Plants (WGDECOM): Status and progress

The WGDECOM reported ongoing progress and noted membership now includes 27 experts from 15 countries, and recent topical sessions addressed gamma spectroscopy, scaling factors, and clearance measurements. The group is working to develop consistent decommissioning data

templates and encourage event reporting. The WGs plans include site visits in France and possibly Spain, and improved benchmarking template usage.

7. Financial aspects of the ISOE TCs and the NEA Secretariat

The European Technical Centre (ETC) reported reduced income due to reactor unit status changes and expenses aligned with database management and meeting organisation. The North American Technical Centre (NATC) is facing financial constraints linked to the removal of As Low As Reasonably Achievable (ALARA) requirements in US regulations. The Asian Technical Centre (ATC) reported challenges due to a weakening Yen affecting contributions, and NEA Secretariat shared information on staff resources, IT costs, and emphasised the importance of timely contributions to maintain programme stability.

8. ISOE documents and publications since the 34th MB meeting

The ISOE MB reviewed updates to ISOE documents and publications, including terms and conditions, annual and country reports, and provided an update on the International Commission on Radiological Protection (ICRP) liaison meeting and its implications for radiation protection standards.

The Secretariat and ETC reported minor amendments to Appendix 1 of the Terms and Conditions, reflecting changes in reactor status, with updated documents available on the website.

The 2021 annual report was published in April 2025, the 2022 report is pending imminent publication, and actions were agreed to finalise and share country reports for 2022, 2023, and 2024 as data becomes available.

9. ICRP SLO meeting update

The Chair summarised the ICRP liaison meeting, which focused on integrating sustainable development goals into the radiation protection system, the ongoing review of the ALARA principle, and plans to feature ICRP developments at the next ISOE symposium. The NATC noted that major reactor suppliers intend to adhere to ICRP standards regardless of national regulatory changes, highlighting the divergence between scientific guidance and current US policy.

10. Increase in the ISOE membership by encouraging more licensees to participate in the ISOE programme

The ISOE MB discussed strategies and challenges for increasing ISOE membership, with updates on efforts to engage new licensees in the UK and other countries, and the importance of regulatory encouragement. Moreover, updates on Poland, Turkey, Bangladesh, Egypt, India, China, Argentina, and the USA, as well as suggestions for expanding membership to research reactors and modular plant companies were provided.

The UK ISOE National Coordinator reported ongoing challenges in encouraging advanced gas-cooled reactor operators in the UK to join ISOE, citing organisational and funding barriers, and suggested that regulatory pressure may be necessary to prompt participation. Furthermore, there are positive developments with new licensees such as Hinkley Point C and Sizewell C, and discussed plans to engage staff and share information about upcoming decommissioning-focused meetings.

It was noted that, Poland remains interested in joining but lacks the internal organisation to proceed, while Turkey has not responded to recent outreach efforts. The Secretariat mentioned sending letters to Bangladesh and Egypt to remind them about ISOE authority membership but received no responses. Previous outreach to India also yielded no commitment, despite discussions with the

Nuclear Energy Commission of India. The Secretariat explained that China now has two new nuclear groups in addition to the traditional ones, and all four were invited to the ISOE symposium in China. Efforts are ongoing to encourage these companies to join the ISOE system, especially those operating new reactor types.

The NATC reported ongoing efforts to secure Argentina's membership, including direct communication with their Argentinian contact. In the USA, new units at Farley and Callaway have paid dues but are pending form completion; actions are underway to finalise their official membership.

The Swedish ISOE National Coordinator proposed expanding membership to research reactors and other facilities and suggested considering a 'light membership' citing interest from Norway and Sweden. The NATC added that companies building modular plants are also interested in joining and suggested forming a working group for them. These proposals will be discussed at the upcoming Bureau meeting.

11. Country Report on ISOE Activities

Country	Update
Canada	Noted increased reactor availability after refurbishments at Darlington and Bruce, the permanent shutdown of Pickering Units 1 and 4, ongoing refurbishment work, and new regulatory authorisations. Highlighted major dose-reduction gains (particularly the record-low dose at Darlington Unit 1) and confirmed full compliance during outages and maintenance. Also described the neutron dose event in waste storage traced to Californium-252, the investigation and communication efforts that followed, and addressed Q&A on dose measurement accuracy, regulatory limits, and training, with further details on waste characterisation to come.
China	Reported three new units in commercial operation, stable collective dose levels, and implementation of advanced decontamination and hotspot management techniques. Good practices for reducing Ag-110m and radiation hotspots were highlighted, along with ongoing efforts to optimise occupational exposure management.
France	Summarised the status of 56 PWR units, with 40 outages in 2024 and ongoing optimisation to meet dose targets. No workers exceeded 16 mSv, and main radiological events involved skin doses during maintenance. Future objectives include improved source term characterisation and national decontamination programmes.
Germany	All German reactors are now in decommissioning, with no operating plants since April 2023. Dose data for 2024 is pending due to administrative processes. Event reporting remains at low levels, with all 29 events in 2024 classified as minor and no overexposures.
Japan	Presented the operational status of 58 reactors, with 14 in operation, 19 out of operation and 25 under decommissioning. Collective and individual dose data were provided, including for Fukushima Daiichi. The report included detailed measures for radiation exposure reduction during reactor restarts,

Country	Update
	workforce training, and the challenges of maintaining experienced staff after long shutdowns.
Mexico	Laguna Verde Units 1 and 2 noting a decrease in collective dose from 2023 to 2024. The plant faces challenges due to high source terms, particularly Co-60, and has implemented shielding, selective resins, and chemical decontamination to reduce dose rates. The importance of sharing high-dose plant experience was emphasised.
The Netherlands	The Borssele nuclear power plant, which has operated since 1973, reported a 2024 collective dose of 551 person-mSv, experienced three minor radiation events within legal limits, underwent intensified regulatory inspections, and implemented updates to its radiation-protection programme. The report also highlighted major projects related to a second lifetime extension, preparations for possible decommissioning, and national planning for new nuclear builds, with the plant receiving up to six radiation-protection inspections annually.
Pakistan	Highlighted strong operational performance across the Chashma and Karachi nuclear sites, including record outage achievements, high international rankings, and clear regulatory dose limits. Outlined significant dose-reduction progress driven by stricter access controls, enhanced supervision, upgraded shielding, ALARA processes, and improved dosimetry and organisational measures. Challenges at K2 and K3 related to maintenance-driven higher doses are being addressed through new technologies, with future collective doses targeted to remain within 200–300 person-mSv.
Spain	Spain operated six PWRs and one BWR in 2024, with nuclear power contributing nearly 20% of electricity and collective doses averaging 322 person-mSv for PWRs and 150 person-mSv for the BWR. Highlighted major outage activities (such as steam-generator inspections, reactor-vessel work, pump replacements, and shielding upgrades) along with significant dose-reduction gains enabled by improved contamination monitoring, 3D scanning, and tailored shielding. Elena also showcased the new digital radiological passbook, launched in 2024 and now covering 80% of nuclear-site workers, which enables real-time dose management and replaces paper-based systems.
Sweden	Sweden operates six reactors across three sites alongside several units in decommissioning, with collective dose figures presented and the highest individual dose reaching 11.1 mSv at Forsmark. There was one significant access-control incident and around 70 minor national events, some resulting in regulatory injunctions, and highlighted operational lessons such as the need for early radiation-safety involvement and the challenges posed by ageing plants. Looking ahead, Sweden is considering Small Modular Reactor (SMR) deployment and life-extension projects but faces a shortage of young professionals (particularly in radiation protection) prompting calls for greater workforce-development efforts.

Country	Update
UK	Sizewell B operated smoothly in 2024 with no refuelling outage, completing major projects such as dry-fuel-storage cask loading and high-level resin packaging while maintaining collective doses within expectations. Noted recent increases in collective dose due to expanded work scopes and defects, alongside plans to reduce source term through macro-porous resin and zinc injection, and highlighted land transfer activities to support the Sizewell C new-build project. The UK is progressing with gas-cooled reactor decommissioning, life-extension efforts, large-scale and SMR developments, and national initiatives to address workforce shortages in radiological protection.
US	The US operated 93 reactors in 2024 with a total collective dose of 49,034 person-mSv, supported by strong technological advances such as ultrasonic decontamination, robotics, high-efficiency fuel cleaning, and early Artificial Intelligence (AI) applications for outage planning. Highlighted significant industry activity including power uprates, licence renewals allowing operation up to 80 years, potential restarts like Palisades, and growing SMR development through partnerships. Jagers also noted that power uprates may increase neutron and gamma dose rates (especially in BWRs) requiring detailed surveys and planning to manage radiological protection challenges alongside coordinated decommissioning strategies.

12. Topical session I: “Impact of the deployment of AI in various aspects of RP practices”

Application of Artificial Intelligence in Nuclear Safety and Regulation in China (China)

Outlined China’s national AI strategy for the nuclear sector, describing how government policies since 2017 have promoted the integration of AI, big data, and digital technologies into nuclear engineering, operations, and management. Highlighted current applications in nuclear plants, such as AI-supported monitoring, predictive maintenance, and smart-site systems like a PPE-compliance platform, as well as digitalisation efforts within regulatory bodies, including big-data platforms and AI tools for inspection and review. Also addressed risks, regulatory gaps, and the need for stronger standards and international cooperation, confirming during the Q&A that the smart-site system is fully operational and effective in supporting both operators and regulators.

RP Department Challenges with AI Tools at Operating Nuclear Plants (US)

Outlined the US experience with AI and big data in radiation protection, highlighting the importance of integrating electronic dosimeters with work orders and using systems like Sentinel to ensure accurate, real-time dose tracking. Described how historical work-order and dosimetry data are used to build predictive models, achieving dose and duration forecasts within 2% of actual values, while addressing operational challenges such as worker log-in compliance, data integrity, and system load through measures like vicinity monitoring and coding refinements. The following discussion included system limitations, the need for large high-quality datasets, and the complementary roles of AI and human expertise in ensuring consistent yet adaptable radiation-protection decision-making.

Innovations at Ontario Power Generation: Current and Future (Canada)

Presented current and emerging AI-driven radiation-protection tools, including secure in-house platforms like Chat OPG and Sherlock, supported by a formal digital innovation structure and governance framework. Described operational applications such as AI-assisted fuel-movement optimisation, radiation-permit recommendations, and early robotics trials, as well as plans to integrate AI, robotics, augmented reality, and real-time dosimetry into unified systems for SMRs. Also highlighted Aurum Technologies' combined dosimetry-communication-tracking device and addressed ISOE MB questions on Wi-Fi coverage, detector calibration, visual-positioning systems, and applicability to both outage and routine operations.

13. Topical session II: “Operating RP challenges in NPPs

Decommissioning of the Darlington Refurbishment Waste Tooling System (Canada)

Outlined the decommissioning of Darlington's refurbishment waste-tooling system, explaining how irradiated core components were dismantled, processed, and transferred through shielded systems designed to manage extreme dose rates. Described the discovery of spontaneous-fission neutrons from Cf-252 in pressure tubes, which required detailed neutron surveys, dose assessments, and tailored shielding strategies to maintain worker safety. Key lessons included the value of personnel continuity, improved airflow control, targeted ALARA-based decontamination, and the effectiveness of concrete shielding over steel for neutron protection.

Radiation Monitoring Technologies and Digital Applications at China General Nuclear Power Group (China)

Presented CGN's advanced radiation-monitoring technologies, including wireless personal dosimeters with real-time location tracking, integrated dose-management networks across all CGN sites, and automated systems for internal-exposure measurement. Also described extensive area-monitoring tools and robotics, including inspection robots, robot dogs, and emergency-response units, capable of operating in high-radiation or inaccessible environments. The following discussion included confirming that remote-monitoring systems are fully deployed at the Daya Bay site and that emergency robots are designed for damaged-building operations, with ongoing enhancements to mobility and resilience.

TEPCO's Personal Dose Management System and the Current Status of Fukushima Daiichi Nuclear Power Station (Japan)

Reported on the decommissioning progress at Fukushima Daiichi, noting ongoing work at Units 1 to 4, with Units 5 and 6 in cold shutdown and nearly 12,000 radiation workers supporting the site. Highlighted TEPCO's first successful trial retrieval of fuel debris from Unit 2 (extracting a small fragment for detailed chemical and radiological analysis) and explained how robotics, drones, LIDAR, and specialised detectors are used to investigate highly contaminated or inaccessible areas despite challenges such as radiation-induced equipment limitations. Confirmed that debris-retrieval work is performed entirely remotely to prevent worker exposure, adding that heat stress, rather than radiation, is currently the main occupational risk during summer operations.

Explained TEPCO's G7 system as a centralised platform introduced in 2017 to track radiation exposure for all TEPCO and contractor personnel using unique worker IDs and controlled-area access cards. Outlined how the system integrates data from active (real-time) and passive (monthly) dosimeters along with internal-dose measurements, while ensuring workers complete required training and medical checks before registration. The following discussion clarified how contractors

access their workers' dose records, how regulatory reporting is automated, and how discrepancies between active and passive dosimeters are resolved, with the passive dosimeter always determining the official recorded dose.

Preparations for restarting TEPCO Kashiwazaki-Kariwa NPP (Japan)

Explained the major safety upgrades and regulatory measures implemented at Kashiwazaki-Kariwa NPP, including new seawalls, water-tight structures, improved drainage, and diversified backup power and cooling systems, as part of TEPCO's restart preparations. Described strengthened emergency preparedness through redundant facilities, specialised response equipment, and regular staff training, alongside centralised dose monitoring and ongoing optimisation of radiation-protection practices. Also highlighted workforce-training initiatives for young engineers and RP staff, noting that while worker movement from Fukushima sites is common, transfers to Kashiwazaki-Kariwa are less frequent, with the centralised dose system supporting mobile worker tracking.

Updated Alpha value and connection to dose constraints in Sweden (Sweden)

Outlined Sweden's updated use of dose constraints and a tiered, inflation-indexed alpha value at Forsmark NPP, where three levels guide optimisation decisions and justify investments such as fuel choices. Explained that regulatory dose constraints have been tightened, with administrative thresholds and a 10 mSv/year planning limit, while the absence of a unified national contractor dose constraint creates challenges for workers moving between sites. Sweden's central dosimetry system helps track exposures, though data integration remains limited, and ongoing efforts aim to harmonise contractor management, improve understanding of optimisation tools, and engage staff more fully, despite no pressure from workers to raise dose limits.

Radiological Protection of PWRs That Underwent Long-Term Shutdown (Japan)

Reported that KEPCO has restarted seven Japanese PWR units, following the decommissioning of four reactors after the 2011 earthquake, while implementing stringent post-Fukushima regulatory standards covering seismic upgrades, tsunami protection, diversified power supplies, and reinforced containment. Outlined extensive radiation-exposure reduction measures coordinated through the ALARA Committee, including temporary shielding, enhanced lighting, remote monitoring, and zinc injection, alongside technical water-quality controls to limit corrosion and source-term buildup. Recent innovations such as retaining water in crossover pipes for shielding and deploying mini hot count rooms support KEPCO's goal of achieving globally low outage doses, ISOE MB questions focusing on ALARA practices and zinc-injection performance.

US NRC Proposed Changes in the US Occupational and Environmental Dose Limits (US)

Outlined proposed US regulatory changes that would remove ALARA from federal requirements, introduce clearer risk-based dose standards, and potentially raise occupational and public dose limits, citing scientific studies questioning low-dose health effects. Explained expected updates to NRC inspection procedures and confirmed that all supporting reports, including Idaho National Lab documents, are publicly available. Also described long-term specialty-resin research at Cook Nuclear Plant showing highly effective cobalt removal without zinc injection, with performance validated through comparative trials and documented in past symposium proceedings.

Wolf Creek 3D Printer S/G Bowl shielding successes (US)

Explained how Wolf Creek developed and deployed 3D-printed tungsten shielding for steam-generator bowl drain valves, moving from printer and filament selection to prototype validation and full-scale production. Reported substantial dose reductions and strong cost-benefit performance, with each shield costing about \$10,500 but saving roughly 2 Rem per outage and remaining easy to install, remove, and keep uncontaminated through controlled cleaning practices. Also shared positive operational experience, noted interest from other US plants, and responded to suggestions, such as adding materials for enhanced neutron or gamma attenuation, expressing openness to future design improvements.

14. ISOE Programme of Work for 2026

Discussions on new activities

a. RP Events

The ETC led a comprehensive discussion on improving the collection, centralisation, and sharing of radiation protection (RP) event data, considering multiple databases (ISOE, WANO, IRS, NRC LER) and proposing the formation of a working group to address data gaps and accessibility for both utilities and regulatory bodies. The ETC presented the existing ISOE RP event database, highlighting its coverage from 2000 to 2020, the presence of missing data, and the lack of systematic updates since 2020. The ETC explained the sources of data, including country reports, symposium presentations, and the IRS and WANO databases, and noted the challenges in accessing and updating comprehensive event information.

The ISOE MB discussed the limitations of current databases, noting WANO's database is primarily for utilities and not accessible to regulators, while the IRS database, operated by IAEA and NEA, is not dedicated to RP events only and is difficult to access or search for specific RP-related incidents. The NRC's LER system in the US was also mentioned as a valuable but separate source. The ISOE MB discussed the possibility to form a small working group to systematically update and complete the ISOE RP event database by reaching out to country coordinators and utilities, and by extracting relevant events from IRS and other sources. The group would also consider using AI tools for data integration, while being mindful of data privacy and proprietary concerns.

It was agreed that, in the first step, ETC will attempt to update the existing database, cross-reference with IRS, and contacting the utilities for which events have already been identified. IAEA will discuss the of getting an output from the IRS database for RP events from the IAEA Division who run the IRS database, and to share these events with the ISOE members. ETC will also search for new events on the NRC website for LER (abnormal event report - <https://www.nrc.gov/template/lersearch-template.html>) for RP events, and request event information from ISOE Members

The ISOE MB also discussed the need for systematic and consistent reporting, possibly starting with events already reported to regulatory bodies, and considered the feasibility of using AI for data extraction, with caution regarding proprietary information.

b. Update of plants using Zinc Injection

Following discussions during the topical session, ETC proposes to update the information already collected on plants implementing zinc injection. ETC will prepare and send out a questionnaire on the use of zinc injection at NPPs. In order to elaborate this questionnaire, ETC will first contact some RPMs to identify the key data to be collected.

NATC also proposed to circulate a report on the study of zinc injection in US.

c. Use of the Forum

ETC also proposed some actions to revitalise the use of the forum. After some discussions, it was agreed in a first step to involve national coordinators in the collect of answers from their country. New requests will be sent by ETC to national coordinators.

d. Information on Plant Life Extension

ETC proposed to collect some information related to plant life extension works, dose data, OPEX, etc. ISOE MB agreed that ETC make a proposal to elaborate to collect the information.

Programme of Work 2026

The ISOE MB reviewed the main activities already planned for the coming year. The International ISOE Symposium will be organised by ETC, with the call for papers already issued and the submission deadline initially set for 5 January (to be extended to mid-January). In addition, the North American ISOE Symposium will take place in January 2026, with registration open and the programme under development. Key recognition initiatives will continue, including the World Class ALARA Performance Award and the RP Professional of the Year Award. An ATC benchmarking and information exchange meeting is also planned for late summer or early autumn 2026, expected to include a visit to a nuclear power plant.

Further programme elements include the organisation of two RPMS webinars (dates to be confirmed) and encouragement for members to propose additional meetings or workshops. Members were reminded to improve data collection submissions, particularly by providing work package man-hours, which are essential for meaningful benchmarking and outage analysis. Ongoing priorities also include enhancing ISOE communication tools, promoting participation of young professionals at symposia, and continuing mentoring initiatives through webinars and shared experience videos. Emerging topics such as new builds, plant restarts, and advanced reactors may be highlighted in future symposia. Finally, continued collaboration with international organisations and efforts to expand ISOE membership will be pursued, alongside regular updates of reports, websites, and expert group outputs.

15. Dates and brief overview of the ISOE meetings and events in 2026

The dates of the ISOE meetings and events for 2026 were discussed including:

- ISOE North American Symposium (13 to 15 January, Clearwater Beach, United States)
- WGDECOM: 21st meeting (31 March to 3 April, Chinon, France)
- Bureau: mid-year virtual meeting (2 June)
- ISOE International Symposium (16 to 17 June, Helsinki, Finland)
- 36th Management Board & Bureau (8 to 10 December, Paris, France)

ANNEX 1:

**ISOE MANAGEMENT BOARD 35th MEETING
LIST OF PARTICIPANTS**

*M4, Ground Floor, M Building, VIC, IAEA, VIENNA, AUSTRIA AND ONLINE
10-12 December 2025*

(ISOE National Coordinators are identified below in **bold**)

BUREAU	
Chair	MEIJER, Hans (Borssele NPP, E.P.Z., the Netherlands)
Chair-Elect	SUZUKI, Toshikazu (Tokyo Electric Power Company Holdings, Inc., TEPCO, Japan)
Vice Chair	SUZUKI, Akiko (Nuclear Regulation Authority, NRA, Japan)
JOINT SECRETARIAT	
OECD NEA	WEBLEY, Mike
IAEA	MA, Jizeng

CANADA

CHUI, Benjamin Darlington NPP, Ontario Power Generation (OPG)
ELLASCHUK, Bernard Canadian Nuclear Safety Commission (CNSC)

CHINA

FANG, Yuan National Nuclear Safety Administration (NNSA)
(on behalf of **YANG, Duanjie**)

FINLAND

KONTIO, Timo Loviisa NPP
RIIHILUOMA, Veli Radiation and Nuclear Safety Authority (STUK)

FRANCE

THIAW, Frédéric Électricité de France (EDF)
BOURDELOIE, Rémi EDF

GERMANY

STAHL, Thorsten Gesellschaft für Anlagen- und Reaktorsicherheit (GRS) gGmbH

JAPAN

TAIRA, Junichi Tokyo Electric Power Company Holdings, Inc. (TEPCO)

THE NETHERLANDS

ARENDS, Patrick Authority for Nuclear Safety and Radiation Protection (ANVS)

PAKISTAN

AHMAD, Rana Iftikhar Chasnupp NPP

ROMANIA

CHIYU, Catalina Cernavoda NPP

SLOVENIA

JUG, Nina Slovenian Radiation Protection Administration, Ministry of Health

SPAIN

PINTADO ALCOBA, Elena Spanish Nuclear Safety Council (CSN)

SWEDEN

ISOKIVELÄ, Johannes Forsmark NPP

UKRAINE

MATSENKO Serhii National Nuclear Energy Generation Company “Energoatom”

UNITED KINGDOMJOHNSON, Stuart Office for Nuclear Regulation (ONR)
(On behalf of REES, Vaughan)

RENN, Guy Sizewell B NPP

UNITED STATES OF AMERICA

JAEGERS, Joseph Dresden NPP

SUN, Casper Nuclear Regulatory Commission (NRC)

Participation in the ISOE MB meetings in an advisory capacity:**Technical Centre Representatives****ATC**OTSU, Natsuko Nuclear Safety Research Association (NSRA), Japan
YOSHIDA, Mitsuaki NSRA, Japan**ETC**BELTRAMI, Laure-Anne Centre d'étude sur l'évaluation de la protection dans le
domaine nucléaire (CEPN), France

D'ASCENZO, Lucie CEPN, France

SCHIEBER, Caroline CEPN, France

IAEATC

MA, Jizeng IAEA, Austria

NATC

MILLER, David W. University of Illinois, USA

Observers / Invited Speakers**CANADA**

LARSEN, Kevin Darlington NPP, OPG

CHINA

GUO, Cai NNSA

JIANG, Zhao China General Nuclear Power Group (CGN)

JAPAN

OKUBO, Hideki TEPCO

SHIOTA, Ryuto Kansai Electric Power Company (KEPCO)

UNITED STATES OF AMERICA

JENNINGS, David A Wolk Creek, NPP

**TOTAL: 37 (22 IN-PERSON + 15 VIRTUAL),
INCL. 19 MANAGEMENT BOARD MEMBERS**

ANNEX 2:

ISOE MANAGEMENT BOARD 35th MEETING

AGENDA

*M4, Ground Floor, M Building, VIC, IAEA, VIENNA, AUSTRIA AND ONLINE
10-12 December 2025*

<i>Wednesday 10 December 2025</i>		
	Arrival of participants, IAEA access formalities, registration	
9:00-9:20 (CET)	1. Opening session a) Welcome from the Chair b) Welcome from the IAEA c) Welcome from the NEA. RP-HANS Division d) Welcome from the Joint Secretariat Update on the CRPPH PoW in 2025 and plans for 2026 e) Briefing on meeting logistics and IT tools	Hans Meijer Miroslav Pinak Mike Webley Jizeng Ma (IAEA), Mike Webley (NEA) Jizeng Ma
9:20-9:30	2. Adoption of agenda Action: <u>FOR APPROVAL</u>	NEA Secretariat <i>Room document 2 (NEA/ISOE/A(2025)1, this document)</i>
9:30-9:45	3. Review of the “Feedback on the summary of decisions, agreements, commitments, actions and recommendations from the Summary Record of the 34th ISOE MB meeting, 3-5 December 2024” Action: <u>FOR INFORMATION AND DISCUSSION</u>	NEA Secretariat <i>Room document 3</i>
9:45-10:15	4. ISOE Programme achievements in 2025 a) Consolidated report on the ISOE Programme in 2025 b) ISOE European RPMs Meeting (Chair) c) General discussion Action: <u>FOR INFORMATION, DISCUSSION AND APPROVAL</u>	Caroline Schieber (ETC) <i>Presentation 3</i> All
10:15-10:30	5. Performance indicators of the ISOE Technical Centres in 2025 a) Consolidated report on the ISOE TC Performance Indicators in 2025 b) Comments from the Technical Centres Action: <u>FOR INFORMATION, DISCUSSION AND APPROVAL</u>	<i>Room document 4</i> NEA Secretariat Technical Centres
10:30-11:00	Break	
11:00-11:20	6. WGDECOM: Status and progress a) Report from the WGDECOM Vice Chair on the WGDECOM Programme of Work (2024-2027) Action: <u>FOR INFORMATION, DISCUSSION AND APPROVAL</u>	WGDECOM Chair or Vice-Chair <i>Presentation 4 Room document 5</i>

11:20-11:35	7. Financial aspects of the ISOE TCs and the NEA Secretariat in 2025-2026 a) Technical Centres b) NEA Secretariat Action: <u>(1) FOR INFORMATION AND DISCUSSION; (2) FOR APPROVAL OF THE ETC UNIT OF COST BY THE EUROPEAN MANAGEMENT BOARD MEMBERS</u>	<i>Room documents 6&7</i> Technical Centres NEA Secretariat
11:35-11:45	8. ISOE documents and publications since the 34th MB meeting a) ISOE Terms and Conditions (2024-2027): Rev.1 (with participation status as of 1 st January 2025) b) Annual Reports: 2021 (Published April 2025) and 2022 (Draft – Director General Approval stage) c) Country Reports: 2022 (Rev.5), 2023 (Rev.3), 2024 (Rev.0) Action: <u>FOR INFORMATION, DISCUSSION AND APPROVAL.</u>	NEA Secretariat, ETC <i>Room document 10</i> <i>Room document 8 (2021: NEA No.7692)</i> <i>Room documents 9</i>
11:45-12:00	9. ICRP SLO meeting update	Chair
12:00-12:15	10. Increase in the ISOE membership by encouraging more licensees to participate in the ISOE programme Action: <u>FOR INFORMATION, DISCUSSION AND DECISION</u>	Chair, Past Chair Technical Centres <i>Presentation 5</i> All
12:15-13:45	Lunch break	
13:45-15:30	11a. Country Report on ISOE Activities. Canada (Mr CHUI, Benjamin) China (Ms FANG Yuan) France (Mr THIAW, Frédéric) Germany (Mr STAHL, Thorsten) Japan (Dr YOSHIDA, Mitsuaki) Mexico (Dr MILLER David)	<i>National coordinators</i> <i>Room document 11</i> <i>15 min</i> + ~5 min Q&A <i>per country</i>
15:30-16:00	Break	
16:00-17:30	11b. Country Report on ISOE Activities. (Continued) Netherlands (Mr MEIJER, Hans) Pakistan (Mr AHMAD, Rana Iftikhar) Spain (Ms PINTADO ALCOBA, Elena) Sweden (Mr ISOKIVELÄ, Johannes) UK (Mr RENN, Guy) USA (Mr JAEGER, Joseph)	<i>National coordinators</i> <i>Room document 11</i> <i>15 min</i> + ~5 min Q&A <i>per country</i>
17:30-17:45	Wrap of the day	Chair
18:00	Reception courtesy of IAEA in the VIC	

Thursday 11 December 2025

09:00-09:30 (CET)	12a. Topical session I: “Impact of the deployment of AI in various aspects of RP practices” <u>Title:</u> Application of Artificial Intelligence in Nuclear Safety and Regulation in China <u>Speaker:</u> Cai GUO, NNSA, China (virtual) Action: <u>FOR INFORMATION AND DISCUSSION</u>	Moderated by Hans Meijer <u>Duration:</u> 20 min + Q&A
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09:30-10:00	<p>12b. Topical session I: “Impact of the deployment of AI in various aspects of RP practices”</p> <p><u>Title</u>: The potential impact of AI in the US <u>Speaker</u>: David Miller, University of Illinois, USA</p> <p>Action: <u>FOR INFORMATION AND DISCUSSION</u></p>	<p><i>Moderated by</i> Hans Meijer</p> <p><u>Duration</u>: 20 min + Q&A</p>
10:00-10:30	<p>12c. Topical session I: “Impact of the deployment of AI in various aspects of RP practices”</p> <p><u>Title</u>: Innovations at Ontario Power Generation Current and Future <u>Speakers</u>: Kevin Larsen and Benjamin Chui, Darlington NPP, Canada</p> <p>Action: <u>FOR INFORMATION AND DISCUSSION</u></p>	<p><i>Moderated by</i> Hans Meijer</p> <p><u>Duration</u>: 20 min + Q&A</p>
10:30-11:00	Break	
11:00-11:30	<p>13a. “Topical session II: “Operating RP challenges in NPPs”</p> <p><u>Title</u>: RP issues and decommissioning: main finding from the WGDECOM <u>Speaker</u>: Kevin Larsen, OPG, Canada</p> <p>Action: <u>FOR INFORMATION AND DISCUSSION</u></p>	<p><i>Moderated by</i> Caroline Schieber</p> <p><u>Duration</u>: 20 min + Q&A</p>
11:30-12:00	<p>13b. Topical session II: “Operating RP challenges in NPPs”</p> <p><u>Title</u>: Radiation Monitoring Technologies and Digital Applications at China General Nuclear Power Group <u>Speaker</u>: Zhao JIANG, CGN, China</p> <p>Action: <u>FOR INFORMATION AND DISCUSSION</u></p>	<p><i>Moderated by</i> Caroline Schieber</p> <p><u>Duration</u>: 20 min + Q&A</p>
12:00-13:15	Lunch break	
13:15-13:55	<p>13c. “Topical session II: “Operating RP challenges in NPPs”</p> <p><u>Title</u>: TEPCO’s Personal Dose Management System and the Current Status of Fukushima Daiichi Nuclear Power Station <u>Speaker</u>: Hideki OKUBO, TEPCO, Japan</p> <p>Action: <u>FOR INFORMATION AND DISCUSSION</u></p>	<p><i>Moderated by</i> Caroline Schieber</p> <p><u>Duration</u>: 30 min</p>
13:55-14:35	<p>13d. “Topical session II: “Operating RP challenges in NPPs”</p> <p><u>Title</u>: Preparations for restarting TEPCO Kashiwazaki-Kariwa NPP <u>Speaker</u>: Junichi TAIRA, TEPCO, Japan</p> <p>Action: <u>FOR INFORMATION AND DISCUSSION</u></p>	<p><i>Moderated by</i> Caroline Schieber</p> <p><u>Duration</u>: 30 min + Q&A</p>
14:35-15:10	<p>13e. Topical session II: “Operating RP challenges in NPPs”</p> <p><u>Title</u>: Updated Alpha value and connection to dose constraints in Sweden <u>Speaker</u>: Johannes Isokivelä, Vattenfall, Sweden</p> <p>Action: <u>FOR INFORMATION AND DISCUSSION</u></p>	<p><i>Moderated by</i> Caroline Schieber</p> <p><u>Duration</u>: 20 min + Q&A</p>
15:10-15:30	Break	
15:30-16:00	13f. Topical session II: “Operating RP challenges in NPPs”	<i>Moderated by</i>

	<p><u>Title</u>: Radiological Protection of PWRs That Underwent Long-Term Shutdown <u>Speaker</u>: Ryuto SHIOTA, Kansai, Japan</p> <p>Action: <u>FOR INFORMATION AND DISCUSSION</u></p>	<p>Caroline Schieber</p> <p><u>Duration</u>: 20 min + Q&A</p>
16:00-16:30	<p>13g. Topical session II: “Operating RP challenges in NPPs”</p> <p><u>Title</u>: US NRC proposed changes in the US occupational and environmental dose limits <u>Speaker</u>: David Miller, University of Illinois, USA</p> <p>Action: <u>FOR INFORMATION AND DISCUSSION</u></p>	<p><i>Moderated by</i> Caroline Schieber</p> <p><u>Duration</u>: 20 min + Q&A</p>
16:30-17:00	<p>13h. Topical session II: “Operating RP challenges in NPPs”</p> <p><u>Title</u>: Wolf Creek 3D Printer S/G Bowl shielding successes <u>Speaker</u>: David Jennings, Wolf Creek</p> <p>Action: <u>FOR INFORMATION AND DISCUSSION</u></p>	<p><i>Moderated by</i> Caroline Schieber</p> <p><u>Duration</u>: 20 min + Q&A</p>
17:00-17:15	Wrap of the day	Chair

<i>Friday 12 December 2025</i>		
09:00-09:45 (CET)	<p>14. ISOE Programme of Work for 2026</p> <p>a) Discussions on new activities, including event database b) Programme of work for 2026</p> <p>Action: <u>FOR INFORMATION, DISCUSSION AND DECISION</u></p>	<p>Caroline Schieber (ETC) <i>Presentation</i></p>
09:45-10:00	<p>15. Dates and brief overview of the ISOE meetings and events in 2026</p> <p>a) ISOE North American Symposium (13 to 15 January, Clearwater Beach, United States) b) WGDECOM: 21st meeting (31 March to 3 April, Chinon, France) c) Bureau: May - teleconference (TBC) d) ISOE International Symposium (16 to 17 June, Helsinki, Finland) e) 36th Management Board & Bureau (7 to 9 December, La Muette, Paris, France)</p> <p>Action: <u>FOR INFORMATION, DISCUSSION AND DECISION</u></p>	<p><i>Room document 2</i></p> <p>NATC WGDECOM Chair (or Vice-Chair) Chair, Joint Secretariat ETC Chair, Joint Secretariat</p>
10:00-10:15	Conclusions and closing remarks	Chair, Chair Elect, Participants

(to be followed by the ISOE Extended Bureau Meeting, under a separate agenda, from 10:45 to 13:00)

ANNEX 3

INFORMATION SYSTEM ON OCCUPATIONAL EXPOSURE (ISOE)

Summary Record of the 35th meeting of ISOE Management Board

10 to 12 December 2026

Hybrid

M4, Ground Floor, M Building, VIC, IAEA, Vienna, Austria and online

Summary of decisions, agreements, commitments, actions and recommendations

Agenda item	Task	Decision / agreement / commitment / action / recommendation	Deadline / By whom
1c	Opening session: Welcome from the Joint Secretariat.	<i>Action: Decisions taken at the meeting will have to be validated later by e-mail.</i>	June 2026 / ISOE Secretariat, all MB Members
2	Adoption of the agenda.	<i>Decision: The Agenda NEA/ISOE(2025)2 was adopted without modification.</i>	N/A
4a	ISOE Programme achievements in 2025.	<i>Decision: The consolidated report on the achievements of the ISOE Programme in 2025 was approved.</i>	N/A
4c	ISOE Programme achievements in 2025.	<i>Commitment: All to consider how to improve the use of the RP Forum and involve more national coordinator.</i>	June 2026 All MB Members and TCs
5a	Performance indicators of the ISOE Technical Centres in 2025.	<i>Decision: The consolidated report of the ISOE Technical Centres Performance Indicators in 2025 was approved.</i>	N/A
5c	Performance indicators of the ISOE Technical Centres in 2025.	<i>Commitment: NATC to complete submitting performance indicator data submissions. ISOE Bureau to consider the use of presenting the PI TC data before the next Bureau meeting.</i>	June 2026 NATC ISOE Bureau
6	WGDECOM: Status and progress	<i>Decision: The report on the WGDECOM Programme of Work in 2025 was approved.</i>	N/A

Agenda item	Task	Decision / agreement / commitment / action / recommendation	Deadline / By whom
7a	Financial aspects of ISOE TCs and NEA Secretariat in 2025-2026: Technical Centres.	<p><i>Decision: The Management Board took note of the 2025 financial balance and the 2026 projected budget of ISOE Technical Centres.</i></p> <p><i>The European members of the Management Board approved the ETC unit of cost for 2026 at 9,600 Euros</i></p>	N/A
7b	Financial aspects of ISOE TCs and NEA Secretariat in 2025-2026: NEA Secretariat.	<p><i>Decision: The Management Board took note of the 2025 financial balance and the 2026 projected budget of the NEA Secretariat for ISOE.</i></p>	N/A
8b	ISOE documents and publications since the 34th MB meeting.	<p><i>Action: ISOE Secretariat to share the 2022 Annual Report when it is published</i></p> <p><i>Commitment: ISOE Secretariat to progress the drafting of the 2023 and 2024 Annual Reports following the submission of missing country reports.</i></p>	<p>February 2026 ISOE Secretariat</p> <p>During 2026 ISOE Secretariat</p>
8c	ISOE documents and publications since the 34th MB meeting.	<p><i>Decision: To avoid unnecessary and repetitive edits by the NEA Secretariat and the NEA publishing team, wordings, formatting etc. of the latest published annual reports should be used by the National Coordinators as a basis for subsequent versions of their country's report.</i></p> <p><i>Commitment: ISOE Secretariat to progress Annual Country Reports for 2022, 2023 and 2024.</i></p>	<p>During 2026 / ISOE National Coordinators, all ISOE members</p> <p>During 2026 ISOE Secretariat</p>
9	ICRP SLO meeting update	<p><i>Commitment: ETC to discuss with ICRP on their involvement in the ISOE International Symposium in Helsinki to discuss their review and revision of the system of radiological protection that will update the 2007 General Recommendations in ICRP Publication 103.</i></p>	June 2026 ETC
10	Increase in ISOE membership by encouraging more licensees to participate in the ISOE programme.	<p><i>Commitment: Guy Renn will continue working on the two remaining strands of UK participation, with the aim of getting those respective organisations to the point where he could get them to sign the acceptance form and join ISOE officially.</i></p>	During 2026 Guy Renn (UK)

Agenda item	Task	Decision / agreement / commitment / action / recommendation	Deadline / By whom
		<p><u>Commitment:</u> The IAEA TC will continue contacting the Bangladesh, Egypt, India, China to encourage their country's companies to join ISOE.</p> <p><u>Commitment:</u> The NATC will continue efforts to encourage Argentina to join ISOE.</p> <p><u>Commitment:</u> The ETC will keep contact with Polish Authorities for their future involvement in ISOE</p> <p><u>Commitment:</u> Bureau to consider whether facilities currently outside the T&Cs of ISOE can join e.g. decommissioning and research facilities. Canada, Sweden and US noted many facilities in their countries have expressed an interest to join.</p> <p><u>Commitment:</u> Expand the European RPM webinar to be organized by ETC to the countries from the other TCs.</p> <p><u>Commitment:</u> Open the Topical Sessions of the ISOE MB to all ISOE Members.</p>	<p>During 2026 IAEA TC</p> <p>During 2026 / NATC</p> <p>During 2026 / ETC</p> <p>June 2026 ISOE Bureau</p> <p>During 2026 ISOE Chair</p> <p>During 2026 ISOE Secretariat</p>
13g	Topical session II: "Operating RP challenges in NPPs". US NRC proposed changes in the US occupational and environmental dose limits	<p><u>Commitment:</u> ETC will prepare and send out a questionnaire on the use of zinc injection at NPPs.</p> <p><u>Action:</u> NATC to circulate a report on the study of zinc injection in US</p>	<p>During 2026 ETC</p> <p>June 2026 NATC</p>
14a	ISOE Programme of Work for 2026 – new activities	<p><u>Commitment:</u> IAEA to discuss the possibility of getting an output from the IRS database for RP events from the IAEA Division who run the IRS database (NB. There is not a RP filter on the database).</p> <p><u>Commitment:</u> ETC to consider updating the database with data from IRS, search on the NRC website for LER (abnormal event report - https://www.nrc.gov/template/lersearch-template.html) for RP events, and request event information from ISOE Members.</p> <p><u>Commitment:</u> ETC to elaborate the way to collect information associated with plant life extension</p>	<p>During 2026 IAEA TC</p> <p>During 2026 ETC</p> <p>During 2026 ETC</p>

Agenda item	Task	Decision / agreement / commitment / action / recommendation	Deadline / By whom
14b	ISOE Programme of Work for 2026	<i>Decision: The ISOE Management Board approved the presented Programme of Work as a basis for ISOE activities in 2026 and entrusted the ISOE Bureau and Technical Centres with discussing and agreeing on its further details.</i>	During 2026 / ISOE Bureau and Technical Centres
15	Dates of ISOE meetings in 2026.	<i>Decision: The Management Board approved the schedule of ISOE meetings in 2026, as presented by the NEA Secretariat.</i>	N/A