



ANNUAL REPORT 2025

BEL ✓
Belgian TSO



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MESSAGE FROM THE CHAIR

Bel V is a private foundation established as a subsidiary of the Federal Agency for Nuclear Control (FANC), which delegates oversight activities to it in the field of nuclear safety and radiation protection. Drawing on over 50 years of experience, Bel V contributes to protecting the general public, workers and the environment from the hazards of ionising radiation.

The publication of the Royal Decree of 6 December 2018 formally enabled the FANC to delegate oversight inspections and safety assessments for Class I and Class IIA facilities to Bel V. The practical arrangements for the implementation of this Royal Decree are set out in the management contract between the FANC and Bel V, which also sets out how the FANC oversees the proper performance of the delegated tasks. This oversight is based in particular on a six-year audit programme. In 2025, the first audit cycle was successfully completed and a new multi-year audit programme was drawn up for the period 2026-2031.

In view of the Belgian federal government's objective of achieving a 4 GW nuclear share in the future energy mix, it is essential to assess the impact of this development, in addition to the impact of the permanent shutdown of certain nuclear reactors. These assessments will enable Bel V to anticipate, in good time, the consequences for its activities and for the technical skills required. Against this background, a number of forward-looking scenarios were developed on the basis of the information available, which is constantly evolving, however.

At the Doel and Tihange sites, the continued safe operation of Doel 4 and Tihange 3 must be combined with a large-scale project to extend their operation by ten years, the preparation of major dismantling projects, and the integration of the requirements arising from the partnership with the federal government through the BE-NUC joint venture. To achieve this, ENGIE Electrabel formally submitted a proposal to adapt its organisation. This proposal provides, in particular, for activities and responsibilities relating to operation and dismantling to be separated. In consultation with the FANC, Bel V subjected this proposal to an in-depth assessment.

The year 2025 was also marked by the update of the Nuclear and Radiological Emergency Plan for the Belgian Territory, its Territorial Waters and the Exclusive Economic Zone. In order to improve Belgium's emergency preparedness and response capability in the event of a nuclear accident, and more specifically Bel V's role in this context, Bel V staff again participated in the exercises organised for this purpose in 2025.

Although the operation of the other nuclear reactors has been suspended until further notice, Bel V remains fully committed to developing its international activities. In this context, and in cooperation with international partners, Bel V again acted as technical support organisation (TSO) in 2025 for the Dutch safety authority ANVS, took part in various European Commission-funded projects (in Armenia, Egypt, Ghana, Kenya, Morocco, Nigeria, South Africa and Ukraine) and provided technical support to the French safety authority ASN on a range of topics.

On behalf of the Board of Directors, I wish to thank the management team and all staff for the results achieved and for the professionalism they have shown in performing their duties in these challenging circumstances.



Didier Malherbe
Chair of the Board of Directors

PREFACE

Bel V, a private foundation established on 7 September 2007 with its registered office at Walcourtstraat 148 rue Walcourt, 1070 Brussels, is a foundation whose purpose is to contribute, on a non-profit basis and at technical and scientific level, to protecting the general public, workers and the environment from the hazards of ionising radiation.

It is governed by the Belgian Act of 23 March 1919 establishing the Belgian Companies and Associations Code, and by its own articles of association as filed with the registry of the Court of First Instance of Brussels.

At year-end 2025, the Board of Directors of Bel V was composed of:

- o D. Malherbe, Chair
- o V. Tanghe, Chair of the board of directors of the FANC
- o J. Annane, member of the board of directors of the FANC
- o P. Absil, Director General of the FANC
- o S. Vaneycken, member of the board of directors of the FANC
- o A. Reuter, member of the board of directors of the FANC
- o K. Verheyen, member



EDITORIAL

Maintaining a purposeful focus

Dear reader,

An annual report offers a valuable opportunity to look back on the year gone by, while also looking ahead. This dual perspective helps an organisation to take stock of where it stands, what lessons it is taking forward and the direction it intends to take.

For Bel V, 2025 was a year defined by purposeful focus. This was not an abstract ambition, but a mindset reflected in day-to-day work, in the choices made and in the efforts of each individual.

2025 called for considerable adaptability. The context continued to evolve, deadlines shifted and teams repeatedly had to reorganise their work. In such circumstances, it was essential to remain focused on the core of our mission and on the results that needed to be delivered. Bel V rose to this challenge as an organisation. Thanks to the commitment, expertise and cooperation of its staff, a substantial amount of work was accomplished in 2025.

In 2023, the federal government and ENGIE Electrabel reached an agreement to extend the operating life of Doel 4 and Tihange 3 by ten years. This agreement includes a best-efforts commitment to produce electricity during the winters of 2025-2026 and 2026-2027. Against this background, particular attention was paid in 2025 to the long-term operation of Doel 4 and Tihange 3. A large number of safety studies and a global action plan setting out improvement actions were assessed in depth. On this basis, Bel V prepared a series of safety assessment documents for both sites. These documents helped form the basis for the position on the long-term operation of Doel 4 and Tihange 3, including the associated global action lists of the FANC and Bel V. In addition, 2025 was marked by the permanent shutdown of Doel 1, Doel 2 and Tihange 1, and by the major efforts required for the long-term operation outages of Doel 4 and Tihange 3. During these outages, ENGIE Electrabel had to implement hundreds of improvement actions, with Bel V monitoring their follow-up.

For Doel 3 and Tihange 2, preparations for dismantling continued. For these units, the licensee submitted the first two applications for dismantling licences, as well as the applications for authorisation to construct a decommissioning waste management units on both sites. In this context, further exchanges took place between the safety authority, the Agency for Radioactive Waste and Enriched Fissile Materials (ONDRAF/NIRAS) and ENGIE Electrabel on the expected dismantling waste streams.



As the current temporary storage facilities for spent fuel at Doel and Tihange will reach full capacity in the short term, a new temporary storage facility (SF²) was built on each site. Both facilities are based on the concept of dry storage in containers. For the SF² facility at the Tihange site, the loading of the first containers with spent fuel was completed successfully after Bel V had granted the appropriate authorisation. For the Tihange site, pre-licensing discussions were also launched for a new storage facility for spent fuel: New Storage Facility (NSF), also based on the concept of dry storage in containers. For the SF² facility at the Doel site, Bel V prepared an evaluation report in the context of the acceptance of the facility in September 2025. The first containers will be stored in this building in 2026.



Given the Belgian nuclear context, Bel V also paid particular attention in 2025 to the following activities:

- o for Doel and Tihange: storage conditions and capacity for the various waste streams
- o for Belgoprocess: the licensing and monitoring of the construction of various new buildings intended to address concerns regarding future storage capacity at the Belgoprocess site
- o for the MYRRHA project: the finalisation and presentation of the safety authority's final position on pre-licensing
- o for the University of Liège (ULiège): the introduction of reinforced oversight following an incident in a laboratory room during the production of F-18 by an employee of IBA, as well as specific inspections by Bel V of the work carried out by IBA employees at other Belgian facilities

Looking back on the many achievements and projects of 2025, it is clear that the same purposeful focus will continue to guide us in 2026. New challenges and opportunities will arise, and we will again need to make deliberate choices and set clear priorities. The right focus will keep us on course and will help us determine where to direct our attention and resources.

The path ahead may not always be straightforward. Nevertheless, with the commitment and expertise of its staff, Bel V will be able to continue taking further steps in 2026 to fulfil its mission and develop new initiatives. With strategy, with vision, and with pride and pleasure.

I would like to thank all staff and stakeholders for their contribution, both individually and as part of a team. I hope you will read this annual report with interest.



Michel Van haesendonck,
Ir, Director General

LIST OF ACRONYMS

Below are the main acronyms used in this annual report.

ACRIA	Acceptance criteria
AI	Artificial intelligence
ANVS	Autoriteit Nucleaire Veiligheid en Stralingsbescherming (Netherlands)
ASN	Autorité de sûreté nucléaire (France) – merged with IRSN into ASNR as from 2025
ASNR	Autorité de sûreté nucléaire et de radioprotection (France)
BR	Bâtiment réacteur – reactor building
CATHARE	Code Avancé de ThermoHydraulique pour les Accidents de Réacteurs à Eau
CELEVAL	Evaluation cell of the National Crisis Centre
CNRA	Committee on Nuclear Regulatory Activities (OECD)
CSNI	Committee on the Safety of Nuclear Installations (OECD)
DBNK	Deutsch-Belgische Nuklearkommission
DE	Building for the storage of spent fuel in pools (Tihange)
DECOM	Decommissioning
EC	European Commission
ENSI	Eidgenössisches Nuklearsicherheitsinspektorat – Inspection fédérale de la sécurité nucléaire (Switzerland)
EPR	European Pressurised Reactor
ETSON	European Technical Safety Organisations Network
EU	European Union
EURAD	European Joint Programme on Radioactive Waste Management
EURATOM	European Atomic Energy Community
FANC	Federal Agency for Nuclear Control
FINAS	Fuel Incident Notification and Analysis System
GELINA	GEel LINear Accelerator
GIC	Geïntegreerde Inspectie- en Controlestrategie – integrated inspection and control strategy
GRS	Gesellschaft für Anlagen- und Reaktorsicherheit (Germany)
GSG	Gebouw Stoomgeneratoren – steam generator building (Doel)

HARMONISE	Towards Harmonisation in Licensing of Future Nuclear Power Plant Technologies in Europe (EU)
HARPERS	HARmonised PracticEs, Regulations and Standards in waste management and decommissioning (EU)
HEU	High-enriched uranium
IAEA	International Atomic Energy Agency
INES	International Nuclear and Radiological Event Scale
INSC	Instrument for Nuclear Safety Cooperation (European Commission)
IPM	Installatie voor de Productie van Monolieten – monolith production facility (ONDRAF/NIRAS)
IRE	National Institute for Radioelements
IRRS	Integrated Regulatory Review Service
IRS	Incident Reporting System
IRSRR	Incident Reporting System for Research Reactors
JRODOS	Java Real-time On-line Decision Support
LEANDREA	Lead-cooled European Advanced Nuclear Demonstrator Reactor for Energy Applications
LEU	Low-enriched uranium
LINAC	Linear accelerator
LTO	Long-term operation
MELCOR	Multi-physics engineering-level computer code
METIS	Methodologies and Tools Innovation for Seismic Risk Assessment (EU)
MINERVA	Myrrha Isotopes productionN coupling the linEar acceleRator to the Versatile proton target fAcility
MYRRHA	Multi-purpose hYbrid Research Reactor for High-tech Applications
NEA	Nuclear Energy Agency (OECD)
NSC	Nuclear Science Committee (OECD)
OECD	Organisation for Economic Co-operation and Development
ONDRAF/NIRAS	Agency for Radioactive Waste and Enriched Fissile Materials
PIE	Postulated initiating event
PSA	Probabilistic Safety Assessment
PSR	Periodic Safety Review
Q&A	Questions & Answers



R&D	Research & Development
RECUMO	REcovery and Conversion of Uranium from MOlybdenum production
RGPRI-ARBIS	Royal Decree on general regulations for the protection of the population, workers and the environment against the danger of ionizing radiation
RHWG	Reactor Harmonization Working Group (WENRA)
SCG	Splijstof Container Gebouw – fuel container building (Doel)
SCK CEN	Studie Centrum voor Kernenergie – Centre d'études d'Energie Nucléaire
SFP	Spent fuel pool
SITEX.Network	Sustainable network for Independent Technical EXpertise of radioactive waste disposal
SMR	Small modular reactor
SRL	Safety Reference Levels
TBRs	Technical Board for Reactor Safety (ETSON)
TDS	Traitement des déchets solides – solid waste treatment (Tihange)
TEF	Traitement des effluents – effluent treatment (Tihange)
TEL	Traitement des effluents liquides – liquid effluent treatment (Tihange)
TENOR	TournemirE coNsORTium
TRC	Technical Responsibility Centre (Bel V)
TSO	Technical Safety Organisation
TSOF	Technical and Scientific Support Organization Forum (IAEA)
WAB	Water- en afvalbehandeling – water and waste treatment (Doel)
WENRA	Western European Nuclear Regulators Association
WGWD	Working Group on Waste and Decommissioning (WENRA)



1 REGULATORY ACTIVITIES IN BELGIUM

1.1 Introduction

1.1.1 Nuclear power plants

As regards oversight during the operation of the nuclear power plants, 2025 was marked by the permanent shutdown and subsequent unloading of the reactor cores of Doel 1 on 14 February, Tihange 1 on 30 September and Doel 2 on 30 November. For Doel 1, Bel V monitored the thimble-cutting activities during 2025, as well as the preparations for chemical decontamination of the primary circuit.

In 2023, ENGIE Electrabel and the Belgian State reached an agreement to extend the operating life of Doel 4 and Tihange 3 by ten years, in the context of long-term operation (LTO). This agreement includes a best-efforts commitment to produce electricity during the winters of 2025-2026 and 2026-2027. At the end of 2024, ENGIE Electrabel submitted its file in support of the application for the long-term operation of Doel 4 and Tihange 3 until 2035. Bel V carried out an in-depth assessment of the PSR-LTO reports and the global action plans, resulting in the preparation of 16 safety assessment documents. On the basis of those documents, the FANC adopted its position on the long-term operation of Doel 4 and Tihange 3. The FANC also approved the associated global action plans, including additional actions identified by Bel V and the FANC as a result of their assessment of the file. In addition to the pre-return-to-service actions, ENGIE Electrabel systematically submitted requests to Bel V during 2025 to close actions that did not have to be completed before the units returned to service, but could be scheduled during the three years following their return to service. For each request, Bel V analysed the justification for closing the action and either approved or rejected its closure. The process for closing the actions in the global action lists will continue until 2028.

For Doel 4 and Tihange 3, the first of four outages in the context of long-term operation took place. During these outages, all work required for the return to service of the units after 40 years of operation was carried out. For Tihange 3, the outage ran from 5 April to 10 July, and for Doel 4 from 30 June to 10 October.

For Doel 4, the definitive repair of the secondary containment was also carried out by installing a ring girder. Bel V closely monitored the hundreds of actions that ENGIE Electrabel had to carry out with a view to the continued operation of these units. On this basis, Bel V prepared an assessment document for the FANC, examining whether all conditions for returning the units to service had been met. This included confirming that safety-related equipment was qualified for the next operating period. On the basis of Bel V's assessment document, the FANC approved the continued operation of Tihange 3 and Doel 4, in July and October respectively.

With regard to the design improvement and ageing management programme, Bel V carried out several further assessments in 2025 of studies prepared by ENGIE Electrabel. The results of those assessments were reported back to ENGIE Electrabel.

Doel 3 and Tihange 2 were permanently shut down in late 2022 and early 2023 respectively. Preparations for the dismantling of these units continued in 2025.

For Doel 3, this included:

- o cutting and removing the fuel assembly plugs, an activity that has since been completed;
- o transferring the fuel assemblies to dry storage;
- o permanently taking the circuits out of service. By the end of 2025, approximately 85% of the conventional circuits and 40% of the nuclear circuits had been permanently taken out of service.

For Tihange 2, this included:

- o various sampling activities to characterise the unit with a view to future dismantling;
- o the programme to repair fuel assemblies that had sustained mechanical damage or fuel assemblies with integrity issues;
- o the continued administrative declassification of various circuits in the controlled area that are no longer relevant to nuclear safety;
- o the continued dismantling of non-nuclear circuits in the turbine hall.



The DECOM project in preparation for the permanent shutdown and dismantling of the various units was continued. In 2025, the focus was on the permanent shutdown of Doel 1, Doel 2 and Tihange 1.

Several preparatory dismantling activities were planned and carried out at Doel 1, Doel 2, Doel 3 and Tihange 2:

- o The clearance of the turbine hall was completed for Doel 3 and Tihange 2.
- o Preparatory work is taking place in the spent fuel pools of Doel 3 and Tihange 2 for the removal of spent fuel and radioactive materials.
- o The first containers were removed from Doel 3.
- o Preparations were made for the chemical decontamination of the primary circuit of Doel 1 and Doel 2.

In 2025, the licensee submitted the first two dismantling licence applications, for Doel 3 and Tihange 2, as well as the applications for authorisation to construct waste management units (WMUs) for dismantling waste on both sites. Discussions on the various dismantling waste streams also continued between the safety authority, ONDRAF/NIRAS and ENGIE Electrabel.



Construction of the buildings for the dry storage of spent fuel has been completed at the Doel site, and the storage building for the Doel nuclear power plant has been commissioned. Pre-licensing discussions were also launched for a new spent fuel storage facility at the Tihange site: the New Storage Facility (NSF). This facility is based on the concept of dry storage in dual-purpose containers, for both transport and storage. The ultimate aim is to make it possible to empty the wet storage facility (DE building).

In 2025, Bel V also paid specific attention to the conditions and capacity for storing various waste streams at the Doel and Tihange sites. Following an audit by ONDRAF/NIRAS, the authorisations for resins and, for the Doel site, concentrates remain withdrawn. A new process has been developed for conditioning resins, for which tests are still ongoing.

Inspections carried out in 2025

5	ENGIE Electrabel Corporate
180	Doel nuclear power plant installations
112	Tihange nuclear power plant installations
168	Other Class I nuclear installations
90	Class IIA nuclear installations
8	Emergency plan exercises: 8 exercises (11 employees participated) and 5 alert drills



1.1.2 Other nuclear facilities

At the **National Institute for Radioelements (IRE)**, both the capacity and frequency of low-enriched uranium (LEU)-based production decreased slightly in 2025. The IRE is working on a strategic plan to diversify its activities.

At **Belgoprocess**, Bel V paid considerable attention in 2025 to the follow-up of several construction projects:

- o building 167X (the gel drum storage building for the storage of non-compliant packages)
- o the remaining points relating to the installation for the production of monoliths (IPM)
- o building 170X (for the dismantling activities involving the vessels in buildings 105 and 122)

Commissioning of the first two buildings is scheduled for 2026. Construction of buildings 136F and 165X (ROC – Receptie- en OpslagCentrum) also started in 2025. Bel V monitors both projects through hold points and witness points.

All actions relating to the 2018 periodic safety review of Site 1 and the 2016 periodic safety review of Site 2 have been completed, but a limited Q&A process is still ongoing for a number of actions. Bel V analysed the implementation report, and its comments were submitted to Belgoprocess by means of a letter from the FANC.

The 2026 periodic safety review of Site 2 is currently in the assessment phase. Several interactions between Bel V and Belgoprocess took place in this context.

For the 2028 periodic safety review of Site 1, Bel V analysed the methodology document and submitted its comments.

At the site of the **Belgian Nuclear Research Centre (SCK CEN)**, several events relating to nuclear safety were identified, including a leak in a waste tank, leaking fuel assemblies, the unavailability of measurement channels during start-up, issues with the control rod movement, a leak in the lagoon circuit and scrams in the VENUS reactor.

Several major projects are also ongoing at SCK CEN:

- o MYRRHA (Multi-purpose hYbrid Research Reactor for High-tech Applications): 2025 was marked by the finalisation and presentation of the safety authority's final position on the pre-licensing of MYRRHA. Subsequently, an after-action review (AAR) was used to draw the necessary lessons for other projects.
- o MINERVA (Myrrha Isotopes productioN coupling the linEar acceleRator to the Versatile proton target fAcility): Construction of the conventional buildings has started, but construction of the nuclear part has not yet begun.
- o RECUMO (REcovery and Conversion of Uranium from MOlybdenum production): Construction work for this project, which involves recycling HEU and LEU from the IRE, is ongoing and is being monitored by Bel V.
- o The assessment phase for the 2026 periodic safety review of SCK CEN was launched, but has been delayed. Analyses and consultations with SCK CEN are ongoing.

For **JRC-Geel**, organisational developments to be noted include the departure of a member of the Physical Control Service and other staff movements. Vacancies were opened for Radiation Protection Officers (RPOs).

In terms of operation, the main point to note is the restart of the GELINA installation (Geel ELection LINear Accelerator). This installation had been out of service since September 2023. The implementation phase of the periodic safety review was completed in December 2025.



Following the favourable reasoned opinion of the FANC's Scientific Council, the **National Agency for Radioactive Waste and Enriched Fissile Materials** (ONDRAF/NIRAS) obtained a licence in the second quarter of 2023 for the construction of an installation for the disposal of short-lived radioactive waste, the so-called cAt installation. In 2025, Bel V continued its analysis of the revised chapters of the safety report. In December, NIRAS-Site Dessel (NISD) submitted the official version 4 of the safety report. In 2025, four systematic inspections were carried out to follow up the modification files, as well as a thematic inspection on safety culture, training, the organisation of the Health Physics Department and change management. Inspections will also be organised in 2026 (see Section 1.1.3). These inspections should enable Bel V to evaluate, on an interim basis, whether ONDRAF/NIRAS is organisationally ready to start construction and to release the 'ready for construction' hold point on the basis of an assessment by Bel V, which is scheduled for 2026.



1.1.3 Integrated inspection and oversight strategy

In 2018, the new six-year integrated strategy for inspection by the FANC and oversight by Bel V was applied for the first time. This approach was developed by the FANC and Bel V over the past few years in response to findings of the 2013 Integrated Regulatory Review Service (IRRS) audit. In the course of 2023, Bel V also carried out a REX exercise (Return of EXperience). The results served as input for the integrated inspection and oversight strategy (GIC – Geïntegreerde Inspectie- en Controlestrategie) for the next period (2024-2029).

Following consultation with the FANC, a number of adjustments were made to the scope and vision of the various inspection programmes to be carried out by the FANC and Bel V. The inspection programmes for all installations, whether in power operation, in the post-operational phase (POP) or as part of the cAt project, were drawn up for 2025 in accordance with this revised integrated inspection and oversight strategy.

A new assessment of the integrated inspection and oversight strategy is scheduled for 2026. The dismantling phase will also be integrated into this assessment.



1.2 Overview of inspections at nuclear power plants

1.2.1 Doel 1 and Doel 2

Doel 1 operated at full power until its permanent shutdown on the evening of 14 February. The reactor core was unloaded during the shutdown. Preparatory work is also ongoing for the chemical decontamination of the primary circuit, which is scheduled for 2026.

During the year, the thimbles were cut and removed. In addition, a large number of circuits in the secondary part of the installation had already been taken out of service.

Doel 2 operated at full power, except during its annual outage from 14 March to 8 April. On the evening of 30 November, Doel 2 was permanently disconnected from the electricity grid. During the outage, the reactor core was fully unloaded and the fuel assemblies were transferred to the pools in the nuclear auxiliary services building (GNH – Gebouw voor Nucleaire Hulpdiensten).

1.2.2 Doel 3

Doel 3 was permanently shut down on 23 September 2022 and the reactor core has been fully discharged since 11 October 2022.

The following points are worth noting for 2025:

- o The fuel assembly plugs were cut and removed in a container.
- o The removal of fuel assemblies was initiated.
- o The reactor vessel guide tubes were flushed to remove contamination.
- o By the end of 2025, approximately 85% of the conventional circuits and 40% of the nuclear circuits had been permanently taken out of service.

1.2.3 Doel 4

Doel 4 operated continuously at full power until the start, on 30 June, of the first of four LTO outages for the 2025-2028 period. During this outage, in addition to the usual periodic maintenance activities and the loading of a new core, a number of LTO-related activities were already carried out. One of these was the construction of a ring girder at the location of a defective concrete joint in the secondary containment. Following this first LTO outage, the unit was restarted on 8 October and returned to full power on 10 October.

It then operated continuously at full power, except from 21 to 24 October, when it had to be temporarily returned to hot shutdown to repair a leak in the high-pressure turbine.

1.2.4 Doel common: water and waste treatment facilities

In the context of the availability of the water and waste treatment facilities (WAB – Water- en AfvalBehandelingsinstallaties) following the permanent shutdown of the nuclear power plants, several projects are still ongoing to replace or improve the WAB infrastructure.

For concentrates, work is under way both to expand storage capacity and to develop new processes. Bel V is monitoring this closely.



1.2.5 Doel site

Bel V's oversight programme on the site was implemented as follows in 2025:

- o Meetings were held with management and with the heads of the various departments (Maintenance, Operations, Care and Engineering) and services in order to assess their organisation and the management of the various processes relating to nuclear safety and radiation protection. A number of planned inspections were postponed until 2026.
- o Systematic and specific inspections were carried out to address topics applicable to several units, such as operating experience feedback and oversight of the construction of a new building for the storage of spent fuel.

Bel V provided technical support to the FANC for its inspections, including those related to management and radioactive waste management.

1.2.6 Tihange 1

The unit operated at full power until 18 August, with the exception of the following periods:

- o from 20 to 23 January, following a reactor scram caused by a mechanical fault on a secondary circuit feedwater pump
- o from 17 to 23 April, during a reactor shutdown following unintentional contamination of the secondary circuit during a routine chemical conditioning operation

The unit was then in stretch-out mode, with the power output gradually decreasing during this period. On 30 September, whilst operating at 90% of its full power, the unit was shut down and disconnected from the electricity grid, in accordance with the date for the reactor's permanent shutdown specified in the notification of shutdown.

The unloading of fuel from the Tihange 1 core and the transfer of the fuel assemblies to the spent fuel pool were completed on 25 October.

1.2.7 Tihange 2

Preparations for the dismantling of Tihange 2, which was permanently shut down on 31 January 2023, continued in 2025.

The main activities in 2025 were as follows:

- o several sampling operations aimed at characterising the unit with a view to its future dismantling, including sampling of the reactor vessel and its internals, the taking of several concrete core samples in the reactor building, as well as sampling of radioactive resins produced during the primary circuit decontamination phase
- o the repair programme for fuel assemblies that had sustained mechanical damage, as well as fuel assemblies with leaking rods, as part of the CIME Repair project. This programme, which is taking place in the spent fuel pool, began in early April 2025 and will be completed in the second quarter of 2026
- o the installation, at the end of 2025, of the work site for cutting up irradiated reactor core components, such as control rods and instrumentation probes, in the reactor building pool
- o the continuation of the administrative declassification of several items of equipment located in the controlled area and no longer relevant to nuclear safety
- o the modification of the technical specifications relating to declassified equipment
- o the continuation of the dismantling of non-nuclear equipment in the turbine hall



1.2.8 Tihange 3

The unit operated at full power, with no significant events to report apart from the unit outage for refuelling and for the performance of LTO-related works, inspections and tests. This outage lasted approximately three months and took place from 5 April to 10 July.



1.2.9 Tihange site and waste management

The Bel V oversight programme at the site was implemented as follows:

- o Meetings were held with management and with the heads of the various departments (Maintenance, Operations, Care and Engineering) and services in order to assess their organisation and the management of the various processes relating to nuclear safety and radiation protection.
- o Systematic and specific inspections were carried out to address topics applicable to several units, including operating experience feedback and the management of external risks such as seismic risk.
- o Particular attention was paid to human and organisational factors. This is particularly important at this site, where the safe operation of the reactors must be combined with the demanding project to extend the operation of Tihange 3 and the preparations for the dismantling of Tihange 1.

Bel V provided technical support to the FANC for its inspections, including those relating to the strengthening of the modification process and the follow-up of the project to extend the operation of Tihange 3.

Bel V also continued to closely monitor the management of radioactive waste, particularly as regards the storage of radioactive concentrates and resins, in view of the suspension of the ONDRAF/NIRAS authorisation allowing the removal of this type of waste.

In order to take account of the continued operation of two units (Doel 4 and Tihange 3), the preparations for the dismantling of the other five units and the integration of the requirements arising from the partnership with the Belgian federal government through the BE-NUC joint venture, ENGIE Electrabel formally submitted a proposal to adapt its organisation. This proposal provides, in particular, for responsibilities relating to operation and dismantling to be separated, while maintaining cross-functional activities (including maintenance and the Health Physics Department). Following its assessment, Bel V approved the project, allowing the new organisation to be rolled out from January 2026.



1.3 Overview of inspections at other nuclear facilities

1.3.1 Nuclear Research Centre (SCK CEN)

In 2025, the operating regime of the BR2 reactor consisted of seven normal cycles and four short cycles to perform a transient on an experimental set-up.

In the context of the issue concerning the presence of a foreign object (a spring hanger) in the primary circuit of the BR2 reactor, a number of parameters were reported weekly to the FANC and Bel V during the reactor cycles. In addition, an action plan is ongoing as part of the feasibility study for further localisation and possible recovery of the spring hanger.

During cycle 01/2025, the reactivity effects of operating SIDONIE (Silicon DOPing by Neutron Irradiation Experiment) could not be fully compensated by the control rod. For this cycle, the control rod had been moved to a reactor channel with a lower reactivity worth. As a result, it did not have sufficient worth to compensate for the reactivity effects. SIDONIE was taken out of service during this cycle.

The automatic flow control of the counting gas for the Rm-Tri1 tritium measurement channel is not fully effective, meaning that quantitative tritium measurement cannot be guaranteed. However, any increase in the tritium level can still be detected by the measurement channel. Before the start of the subsequent cycles in 2025, a derogation was approved for the use of the Rm-Tri1 tritium measurement channel with a reduced counting gas flow rate.

After regeneration of the resins, tank WWc containing the collected wastewater could no longer be emptied to Belgoprocess because a shut-off valve at Belgoprocess was closed. A few days later, a rapid drop in the level of tank WWc was observed, caused by a leak between the tank and the drain line at the bottom of the tank. Following consultation with Belgoprocess, the wastewater from the collection sump could nevertheless be pumped to Belgoprocess. This involved approximately 7,000 litres.

During implementation of the procedure for bringing the reactor critical with the control rods for cycle 05/2025, the operators noted that both B chambers were in the 'Prüfen' position and were therefore not operational. According to the technical specifications, both B measurement channels must be available when bringing the reactor critical. Further investigation showed that, after the procedure for checking

the correct status of the control room had been carried out, an intervention had taken place in the control room on the power supply to the measurement channels.

During cycle 05/2025, it was found that control rod S2 was blocked. The criterion for minimum negative reactivity was still met, even without taking account of the scram of control rod S2. The control mechanism for control rod S2 was unloaded for repair during shutdown 06/2025A.

From 1 September, an increased concentration of fission products was measured during periodic sampling of the primary circuit water. After a rapid increase during the first few days, stabilisation was observed until the end of cycle 05/2025. The action limit was not exceeded. The wet sipping tests carried out after cycle 05/2025 showed that three fuel assemblies were leaking.

During reactor loading for cycle 06/2025A, measurement channel L1 was found to be in the 'Prüfen' position and therefore not in service, which is not in accordance with the technical specifications. According to the licensee, the procedure for verifying the correct position of the equipment in the control room had been effectively carried out before loading started. The cause of the unavailability of measurement channel L1 could not be identified.

During cycle 07/2025A, a leak in the lagoon circuit was detected in the compressor building, causing water to enter the vicinity of electrical cabinets belonging to the vital grid. To avoid a possible short circuit on the vital grid, it was decided to shut the reactor down early in a controlled manner. After shutdown, the lagoon circuit was isolated and the leak was fully sealed.

During fuel assembly handling operations between cycles 07/2025A and 07/2025B, the read-out on measurement channel B2 failed and an alarm was triggered. Fuel assembly handling continued, although the technical specifications require both B measurement channels to be available during loading and unloading of fuel assemblies. Further investigation showed that measurement channel B2 had in fact never been unavailable and that the technical specifications had therefore been complied with.



The VENUS reactor was started up several times in 2025 as part of tests for an oscillator experiment. On 26 February, a reactor scram occurred because the limit switch of a control rod opened during start-up. A reactor scram also occurred on 16 May, following the loss of the 10 kV grid. The fault on the external high-voltage grid lasted approximately one second. The dynamic uninterruptible power supplies (DUPSs) covered this fault for the vital grid. Neither scram had any consequences and the reactor could be restarted each time.

Dismantling of the BR3 reactor is still ongoing.

Construction of the MaT building (for the Material Treatment project) was delayed. The aim is for the MaT building to be accepted in the course of 2026.

In the LHMA facility (Laboratory for High and Medium-Level Activity), the production of Ac-225 from Th-229 has become a routine activity. Several hot cells in the LHMA facility are also being cleaned. These hot cells will be adapted for new applications.

Several modifications were carried out in the SCH facility (Scheikunde), including for experiments in the context of the RECUMO project. In the laboratories of the SCH facility, two new hot cells were commissioned as part of research activities on the production of Lu-177.

A new linear accelerator (LINAC) was commissioned in the LNK facility (Laboratorium voor Nucleaire Kalibraties).

Construction started on a new Class IIA facility, the Centralised Radiochemistry Facility (CRF), for the production of Lu-177. The site acceptance tests are scheduled for 2026.

1.3.2 Belgoprocess

The first phase of the replacement of the Nete pipeline outside the site was carried out. Following the planned checks, historical soil contamination was identified at one location outside the Belgoprocess site. Belgoprocess is taking the necessary measures to secure and remediate that location.

Following the pressure build-up observed in a number of OV200 packages containing conditioned radium-bearing waste from building 280X, the approval for the conditioning process in building 280X was suspended. In 2025, solutions were developed and tested for a new methodology for processing radium-bearing waste.

On Site 1, a leak was detected in an underground pipe used to discharge potentially contaminated condensates from zone A. Checks and sampling showed that no soil contamination had occurred.

When a drum containing historical waste was opened in building 280X, a deflagration occurred as a result of hydrogen that had accumulated in the drum. The incident had no consequences for the operators or the environment.

During work in cell 1.003 of building 280X, an operator was injured and sustained internal contamination. The necessary medical follow-up was provided. This incident resulted in a committed dose of 3.5 mSv for the operator.



1.3.3 National Institute for Radioelements (IRE)

The capacity and frequency of low-enriched uranium (LEU)-based production declined slightly in 2025. The IRE is developing a strategic plan to diversify its activities, particularly with regard to the types of radioisotopes that can be produced and purified, and the radiopharmaceuticals that can be synthesized and distributed. As part of this plan, the IRE is establishing partnerships with external companies.

Due to delays in the commissioning of the RECUMO installation, a new plan for high-enriched uranium (HEU) transport until 2029 has been proposed. In early 2025, the IRE presented the progress of its studies on the LEU residue storage capacity. The identified risks were examined, in particular the long-term availability of storage capacity at SCK CEN.

The decontamination of the XeMo II cells is continuing. It is now possible for an operator to enter C27 in order to complete the decontamination operations that could not be carried out using remote manipulators, thereby continuing to reduce dose rates.

The IRE will continue the installation of the Ikon-30 cyclotron in building B29 in 2026. The Physical Control Service is considering a scaling-up programme for the accelerator, targets and radiochemistry in preparation for the commissioning of the installation.

Civil engineering issues were encountered in the OLT B6 project in relation to the building intended to house the liquid waste tanks. Corrective measures are currently being implemented.

1.3.4 JRC-Geel

One noteworthy event at JRC-Geel was the departure of a member of the Physical Control Service who acted as project manager for the periodic safety reviews (PSR) and as a trainee Qualified Expert. The Head of the Physical Control Service took over the role of PSR project manager, and a vacancy was opened for the Qualified Expert position. This situation, together with additional staff movements, led JRC-Geel to recruit additional Radiation Protection Officers (RPOs).

In operational terms, the GELINA (Geel ELection LINear Accelerator) installation was restarted in the first quarter of 2025, after a shutdown of more than one year.

The nuclear activities of building 010 were transferred to building 040. As a result, the controlled and supervised areas of building 010 will be denuclearised in the coming years. A budget has been granted for a feasibility study on the refurbishment of building 040. Depending on the outcome of this feasibility study and the available funding, this project could be implemented in 2027-2028.





1.3.5 Other (class IIA) facilities

The following specific points should be noted for the other (class IIA) facilities:

- o Reloading of Co-60 at Sterigenics proceeded without difficulty.
- o A new authorisation application for a Co-60 irradiator at UCLouvain was received.
- o Dismantling at Vrije Universiteit Brussel (VUB) is proceeding smoothly and according to schedule. The latest version of the release file was approved by Bel V.
- o The cyclotron at Erasme Hospital is shut down. The file relating to the dismantling of the cyclotron was submitted to Bel V.
- o Antwerp University Hospital (UZA) submitted a modification file for the treatment of new isotopes. This file is being handled as an important modification.
- o On 17 December, the hands of a radiochemist from IBA were exposed to radiation in a shielded cell while taking a sample of F-18 intended for quality control tests. These activities take place in the University of Liège (ULiège) facilities. The activity sampled was estimated at 19 GBq, ten times higher than expected, due to the use of a procedure that had not been tested beforehand, after the pump of the module normally used had failed. The two radiochemists only informed the ULiège Radiation Protection Officer, the IBA Radiation Protection Expert and their line manager the following Monday, five days after the incident. Following the incident, the General Manager of IBA and the Head of the Health Physics Department were summoned to the FANC.
- o The issue relating to chemical reactions in the self-shielding shells of the University Hospital of Liège (CHU de Liège) cyclotron has still not been resolved. The commissioning of the new cyclotron has therefore not yet been scheduled.
- o The dismantling of the installations taken over by ONSF (ONDRAF/NIRAS Site Fleurus) in Fleurus is continuing without any particular difficulty. The authorisation for the conditional release of activated concrete, in accordance with Article 18 of the Royal Decree laying down the general regulations for the protection of the public, workers and the environment against the hazards of ionising radiation, was granted by the FANC.
- o The dismantling work at Ghent University (UGent) has been completed and the final dismantling report was approved. The Class IIA licence was terminated and storage of the remaining waste will be covered by a Class II licence.
- o Construction of the Full Life Technology building is progressing according to schedule.
- o Construction of the Pantera installation is expected to start in 2026.
- o The two new cyclotrons at the Telix site were commissioned after inspection by the Health Physics Department and Bel V. The cells, however, still have to go through the same commissioning process.





1.4 Emergency preparedness and response

1.4.1 Introduction

There was no actual activation of the federal nuclear emergency plan in 2025.

The year 2025 was also marked by the update of the Nuclear and Radiological Emergency Plan for the Belgian Territory, its Territorial Waters and the Exclusive Economic Zone. This update was published in the Belgian Official Gazette on 30 July 2024 in the form of a Royal Decree.

In 2025, the implementation and roll-out of the Paragon national security portal continued. This online platform aims to facilitate preparation, coordination and information-sharing between the relevant emergency services, authorities and partners involved in an emergency situation.

In addition, the evaluation cell (CELEVAL) of the National Crisis Centre continued the roll-out of the JRODOS model as its own tool for assessing radiological consequences.

1.4.2 Emergency response exercises

In 2025, Bel V took part in the following emergency preparedness and response exercises:

- o two partial exercises, organised in February for the Tihange nuclear power plant and in April for the Doel nuclear power plant. These exercises were limited to the interaction between the licensee's crisis cell (on site) and CELEVAL (off site), and were organised under the supervision of the National Crisis Centre, which is part of the Federal Public Service Interior;
- o a large-scale safety/security exercise, based on an intrusion scenario and a dirty bomb risk, organised with SCK CEN on 4 November on the basis of a scenario also involving JRC-Geel and Belgoprocess. This exercise was organised in response to a recommendation made during the 2023 IRRS mission. It also made it possible to test the FANC's new technical regulation, which now includes security criteria;
- o three internal CELEVAL drills, organised by the FANC and Bel V in September;

- o two series of alert exercises (without mobilisation), organised in October for the Doel nuclear power plant and in November for the IRE;
- o two limited participations in French exercises: on 16 October for the Flamanville nuclear power plant, by observing the exercise from the crisis centre of the French safety authority ASNR, and on 17 November for the Gravelines nuclear power plant, with several consultation moments.

As in previous years, these exercises enabled the relevant Bel V staff to regularly apply the provisions set out in the operational plans and procedures. They also led to a number of findings which, after analysis, will be addressed through specific actions. In particular, they highlighted the need to continue structurally strengthening the alert and mobilisation arrangements and mechanisms, to further integrate and familiarise staff with JRODOS and Paragon, to test the implementation of staff relief arrangements and to strengthen cross-border cooperation with France following the establishment of ASNR following the merger of the Institut de radioprotection et de sûreté nucléaire (IRSN) and the Autorité de sûreté nucléaire (ASN).

1.4.3 Improving the role of Bel V

In order to improve Belgium's emergency preparedness and response capability in the event of a nuclear accident, and more specifically Bel V's role in this context:

- o Bel V staff took part in the Belgian emergency preparedness and response exercises. In addition to the response activities themselves, these exercises included significant preparation, observation and evaluation activities, assessing the response of Bel V's crisis team, the licensee and the other parties involved, including the evaluation cell of the National Crisis Centre;
- o Limited communication and preparedness exercises and tests were organised throughout the year, for a total of 32 tests.



2 SAFETY ASSESSMENTS AND NATIONAL PROJECTS

2.1 Probabilistic safety assessments

In 2025, Bel V continued its technical discussions with ENGIE Electrabel regarding the probabilistic safety assessments (PSAs) developed by ENGIE Electrabel / Tractebel as part of the WENRA RL2014 project (see Section 2.9). These technical discussions specifically address PSAs related to spent fuel pools and cover both internal events and hazards, as well as external hazards (such as seismic events and external flooding). Bel V also closely monitored the implementation of on-site improvements relating to design improvements and the adaptation of operational procedures. These efforts aim to ensure compliance with the Royal Decree of 30 November 2011 on the safety requirements for nuclear installations, as amended by the Royal Decree of 19 February 2020.

In the context of the long-term operation (LTO) of Doel 4 and Tihange 3, ENGIE Electrabel conducted a number of PSA-related activities. These included a seismic PSA, including seismically induced fire and flooding, and an assessment of the PSA models in terms of scope and quality for both reactors, as well as an external flooding PSA for Tihange 3. The associated deliverables are being reviewed by Bel V. In the specific context of the PSR-LTO exercise, an action plan has been developed to improve the different PSA models of Doel 4 and Tihange 3 over the next three years.

In 2025, Bel V also started reviewing the assessments received in the context of the PSR-POP relating to the post-operational phase of Tihange 1, Doel 1 and Doel 2.

Bel V and ENGIE Electrabel also discussed the reorientation of PSA policies, including further development, maintenance and application, in light of the LTO context. Bel V continued to monitor PSA applications performed on site by the licensee.

For more information on Bel V's international and R&D activities related to PSA methodology and applications, please refer to Section 4.4.





2.2 Periodic safety reviews

2.2.1 Nuclear power plants

Periodic safety reviews (PSRs) are a regulatory requirement under Article 14 of the Royal Decree of 30 November 2011. The FANC technical regulation on periodic safety reviews ('Reglement technique de l'AFCN du 2 février 2021 précisant les modalités des révisions périodiques de sûreté des établissements de classe I, à l'exception des réacteurs de puissance') and IAEA Specific Safety Guide SSG-25 on PSRs for nuclear power plants provide the reference framework for performing these reviews in practice.

In 2025, periodic safety reviews were ongoing for all nuclear installations at the Doel and Tihange sites, with varying levels of progress.

Doel 3, Tihange 2 and auxiliary installations – PSR-POP

In 2025, Bel V continued to monitor the implementation of the action plans defined as part of the PSRs for Tihange 2 (reviewed together with the TEF, TEL and TDS installations), the PSR for Doel 3, and the PSR for the Doel auxiliary installations (the WAB, SCG and GSG installations).

These action plans contain specific improvements, relating to hardware, processes or procedures, being implemented under three different frameworks: continuous improvement, definitive shutdown or the PSR itself.

Doel 4 and Tihange 3 – PSR-LTO

A significant part of the workload in 2025 related to the PSR of Doel 4 and Tihange 3, aimed at preparing these units for long-term operation for an additional ten years. In 2025, Bel V reviewed the various assessments delivered by ENGIE Electrabel and, together with the FANC, approved the associated action plans (global action lists).

As a consequence of the LTO plans, the adequacy of the actions identified in the context of the PSRs for the TEF, TEL and TDS installations (originally carried out in the context of the PSR for Tihange 2) and for the WAB, SCG and GSG installations (originally addressed in a dedicated PSR) was reassessed. These actions had originally been defined within the framework of the definitive shutdown of all units on both sites.



DE building– PSR

Bel V also assessed the PSR for the DE building for the wet storage of spent fuel, which was delayed compared with the PSR for Tihange 3, and delivered a dedicated evaluation.

Doel 1 and 2 and Tihange 1 – PSR-POP

Throughout the year, Bel V also received deliverables for the PSRs for Doel 1 and 2 and Tihange 1, all three of which were permanently shut down in 2025. Bel V began reviewing these deliverables in order to issue its position in 2026.



2.2.2 JRC-Geel

The implementation phase came to an end in December 2025. All 122 actions defined in the approved action plan were implemented as part of the periodic safety review project. Some actions will be followed up further by Bel V in the context of its regulatory inspections. Bel V agrees with the implementation of the actions arising from the approved action plan of the 2022 periodic safety review. It also considers that the safety level of the installations at JRC-Geel is sufficiently high to ensure operational safety until at least the next periodic safety review, thereby protecting the general public, workers and the environment from the hazards of ionising radiation.



2.2.3 SCK CEN

The evaluation phase was launched, but has been delayed. During 2025, Bel V received a number of deliverables, which were analysed. Bel V submitted its comments by letter and during technical discussions with SCK CEN. Bel V also requested that these comments be taken into account in the revised versions of the documents concerned.

2.2.4 Belgoprocess

For the 2018 periodic safety review of Site 1, the deadline for implementing the action plan expired at the end of the second quarter of 2023. While Belgoprocess has delivered all actions, a Q&A process is still ongoing for a number of actions.

For the 2028 periodic safety review of Site 1, Belgoprocess submitted the draft methodology document to Bel V. Following its analysis, Bel V sent its comments to Belgoprocess by letter.

For the 2016 periodic safety review of Site 2, the deadline for implementing the action plan expired at the end of the second quarter of 2021. Here too, Belgoprocess has completed all actions, but a Q&A process is still ongoing for one action. Bel V analysed the implementation report, and its comments were submitted to Belgoprocess by means of a letter from the FANC.

The 2026 periodic safety review of Site 2 is currently in the assessment phase. Bel V analysed the notes on the risk classification of structures, systems and components and, following its evaluation, sent its comments and questions to Belgoprocess by letter. Belgoprocess incorporated this input, sent draft evaluation sheets to Bel V and subsequently received Bel V's feedback by email.



2.3 Long-term operation of Doel 4 and Tihange 3

At the end of 2024, ENGIE Electrabel submitted its file in support of the application for the long-term operation of Doel 4 and Tihange 3 until 2035. Bel V carried out an in-depth analysis of the PSR-LTO reports and the global action plan and, on that basis, prepared eight safety assessment documents for each site, covering the following topics:

- o ageing management
- o knowledge, competencies and behaviour
- o preconditions (conditions for long-term operation)
- o design improvements
- o extraordinary tests and inspections
- o periodic safety review
- o global action list
- o overarching assessment document

On the basis of those assessments, the FANC formulated its position on the long-term operation of Doel 4 and Tihange 3. The FANC also approved the associated global action lists, including additional actions identified by Bel V and the FANC as a result of their evaluation of the file. The results of Bel V's evaluations were also presented at the meeting of the FANC's Scientific Council on 19 June. On this basis, the Scientific Council issued a favourable opinion on the process followed, the results obtained and the conclusion of the integrated PSR-LTO file for Doel 4 and Tihange 3.

Bel V closely monitored the hundreds of actions that ENGIE Electrabel had to carry out with a view to the continued operation of these units. For example, non-conformities recorded in non-conformity reports (NCRs) and justifications for continued operation (JCOs) had to be resolved before the return to service. Bel V was required to approve the closure of each action.

On this basis, Bel V prepared an assessment document for the FANC, examining whether all conditions for returning the units to service had been met. This included confirming that safety-related equipment was qualified for the next operating period. On the basis of Bel V's assessment document, the FANC approved the continued operation of Tihange 3 and Doel 4, in July and September 2025 respectively.

During 2025, ENGIE Electrabel also systematically submitted requests to Bel V to close actions that did not have to be completed before the units returned to service, but could be scheduled during the three years following their return to service. For each request, Bel V analysed the justification for closing the action and either approved or rejected its closure. The process for closing the actions in the global action lists will continue until 2028.

With regard to the design improvement and ageing management programme, Bel V carried out several further assessments in 2025 of studies prepared by ENGIE Electrabel. For example, ENGIE Electrabel prepared several feasibility studies for planned design improvements, including for the further improvement of the robustness of the cooling of the spent fuel pools. The results of those assessments were reported back to ENGIE Electrabel.



2.4 DECOM project

The DECOM project aims to prepare the permanent shutdown and dismantling of the Doel and Tihange nuclear reactors. In 2025, efforts focused on finalising the implementation of the post-operational phase for Doel 3 (which was shut down in September 2022) and Tihange 2 (which was shut down in January 2023), as well as on the announced shutdown of Doel 1, Doel 2 and Tihange 1. They also focused on analysing the dismantling licence applications for the first two reactors that had been shut down.

2025 was therefore marked by the permanent shutdown of Doel 1, Doel 2 and Tihange 1.



Various dismantling activities were prepared and carried out at Doel 1, Doel 2, Doel 3 and Tihange 2. The main non-nuclear activity concerned the clearing of the turbine halls, which has now been completed at Doel 3 and Tihange 2. Chemical decontamination of the primary circuit is another major activity carried out after permanent shutdown. It aims to reduce radiological risks during the final stages of the reactor's life cycle. Following Doel 3 and Tihange 2, Bel V monitored the preparations for chemical decontamination at Doel 1 and Doel 2, which is scheduled for mid-2026.

For both Doel 3 and Tihange 2, extensive exchanges took place in order to prepare the removal of the spent fuel and radioactive substances present in the spent fuel pools. The repair of damaged rods, the licensing of containers intended for these substances and spent fuel, and the construction of the new buildings have been the subject of extensive analysis by Bel V in recent years. The first fuel assemblies were removed in 2025. In parallel, the work sites for repairing damaged rods and removing non-fissile materials were set up.

In 2025, ENGIE Electrabel submitted the first two dismantling licence applications (for Doel 3 and Tihange 2), as well as the applications for authorisation to construct waste management units (WMUs) for dismantling waste on each site. Bel V analysed these documents in depth for Doel and Tihange and issued its position on Doel 3 in early January 2026.

Finally, numerous three-way exchanges between the safety authority, ONDRAF/NIRAS and ENGIE Electrabel took place concerning the waste streams that will be generated during shutdown and dismantling activities. These discussions are intended to prepare, as effectively as possible, the inventorying, characterisation and removal of this waste during dismantling.



2.5 Radioactive waste management

2.5.1 Radioactive waste management

As part of the assessment of whether waste intended for near-surface disposal is suitable for this purpose, Bel V analysed a limited number of disposal conformity files in 2025 and provided ONDRAF/NIRAS with feedback on the adjustments required. These disposal conformity files are prepared by ONDRAF/NIRAS and aim to demonstrate that radioactive waste from a particular (sub-)family or (sub-)variety meets the criteria for near-surface disposal. The files are prepared following a stepwise process, with Bel V's approval required before each subsequent stage can be initiated.

In 2025, Bel V also contributed to the analysis of ONDRAF/NIRAS proposals for several ACRIA documents, which describe the acceptance criteria for a specific waste type as defined by ONDRAF/NIRAS. Once the relevant Royal Decree has been published, these ACRIAs must be approved by the FANC. In this context, the FANC tasked Bel V with verifying that the ACRIAs comply with the licensing conditions (including the specifications in the safety report) of the various facilities where the waste will be managed at later stages of the treatment process.

In 2025, the FANC and Bel V also continued cooperation on activities relating to the long-term management of high-level and/or long-lived waste (category B and C waste). This involves reviewing safety studies submitted by ONDRAF/NIRAS, consulting with the FANC and ONDRAF/NIRAS on safety aspects, and developing expertise, including through cooperation with other technical safety organisations (see Section 3.3.3).

2.5.2 cAt (construction and licensing)

Since the licence application submitted by ONDRAF/NIRAS on 31 January 2013, Bel V, together with the FANC, has been closely involved in the licensing process for the future near-surface disposal facility for low- and medium-level short-lived radioactive waste (category A waste) in Dessel.

At its meeting of 24 February 2023, the FANC's Scientific Council issued a favourable opinion, based among other things on an assessment report prepared by Bel V. In it, Bel V stated that ONDRAF/NIRAS had provided an adequate response to all elements requested prior to the second meeting of the Scientific Council, with the exception of the request concerning the determination of the geosphere transfer factor for the water well and seepage areas for the western tumulus. ONDRAF/NIRAS is not currently able to respond to this request. However, Bel V does not consider this to be an obstacle to the project schedule currently envisaged, as operation of the western tumulus is not planned before 2040. In its assessment report, Bel V also identified a number of elements that ONDRAF/NIRAS still has to carry out and/or submit, including elements relating to the revision of the safety report and the 'ready for construction' hold point.

Following the favourable reasoned opinion of the Scientific Council, ONDRAF/NIRAS obtained a licence in the second quarter of 2023 for the construction and operation of the near-surface disposal facility in Dessel. In 2025, Bel V continued its analysis of the revised chapters of the safety report. In December, NIRAS-Site Dessel (NISD) submitted the official version 4 of the safety report.

In 2025, four systematic inspections were carried out to follow up the modification files, as well as a thematic inspection on safety culture, training, the organisation of the Health Physics Department and change management.

NIRAS-Site Dessel intends to start construction of the disposal installation in the second quarter of 2026. A necessary condition for this is the release of the 'ready for construction' hold point by the safety authority. In this context, a number of meetings were organised and a list of documents to be submitted was agreed with NIRAS-Site Dessel and the Health Physics Department. Some of these documents have already been submitted to the safety authority, which has already provided feedback on them to NIRAS-Site Dessel. Bel V will prepare an assessment report in the first half of 2026 for the purpose of releasing the hold point.



2.6 MYRRHA / MINERVA

2.6.1 MYRRHA

MYRRHA (Multi-purpose hYbrid Research Reactor for High-tech Applications) is a project for the construction of a multi-purpose irradiation installation coupling a 600 MeV proton accelerator to a fast-spectrum reactor using lead-bismuth eutectic coolant. The pre-licensing phase of the project, initiated in 2011 to analyse the licensability of the installation, continued until 2024. Following strategic changes at federal government and SCK CEN level, the project was put on hold for an extended period in 2025, in order to focus priorities and resources on the development of a lead-cooled small modular reactor (SMR).

In 2024, Bel V had therefore analysed the main documents relating to MYRRHA, such as the description of the installation design, the safety approach applied and various supporting documents. Bel V had also submitted its position to the FANC on the progress of the project before it was put on hold.

2025 was devoted to finalising and presenting the safety authority's final position on the pre-licensing of MYRRHA. Lessons learned that may be useful for other projects were then identified through an after-action review (AAR).

2.6.2 MINERVA

MINERVA (Myrrha Isotopes productionN coupling the linEar acceleRator to the Versatile proton target fAcility) is a linear accelerator (LINAC) characterised by a maximum proton beam energy of 100 MeV and a beam intensity of 4 mA. In 2022, MINERVA was granted a Class IIA licence by the FANC.

Construction of the conventional building of the MINERVA installation started in 2025. Although commissioning of the installation was initially planned for 2026, delays have been encountered because construction of the nuclear part of the building has not yet started. The updated schedule for construction and commissioning of the nuclear part has yet to be confirmed by SCK CEN.



2.7 Spent fuel storage facilities

As the current temporary storage facilities for spent fuel at Doel and Tihange will reach full capacity in the short term, a new temporary storage facility (SF²) was built on each site. For both facilities, the concept of dry storage in dual-purpose containers namely for transport and storage, was selected. The licences for the SF² facilities were obtained on 26 January 2020 for the Tihange site and on 1 July 2021 for the Doel site.

In 2024, Bel V issued an acceptance report for the facility at the Tihange site. The loading of the first containers with spent fuel was completed successfully in September 2025, after Bel V had issued an acceptance report for the container type concerned. ENGIE Electrabel plans to put a second container type into use in 2026.

For the facility at the Doel site, an acceptance report was issued in September 2025 based on a Bel V assessment report which verified, among other things, compliance with the licence conditions. ENGIE Electrabel plans to store the first containers in the building in 2026.

Finally, pre-licensing discussions were also launched for a new spent fuel storage facility at the Tihange site: the New Storage Facility (NSF). This facility is also based on the concept of dry storage in dual-purpose containers, namely for transport and storage.





2.8 RECUMO

Construction work for the RECUMO project (REcovery and Conversion of Uranium from MOlybdenum production) at SCK CEN is ongoing and is being monitored by Bel V.

The FANC, in consultation with Bel V, has defined hold points and witness points. These points were included in the construction programme for the RECUMO installation. The FANC and Bel V also determined the hold points and witness points for the fine envelope. They are followed up during specific inspections.

As regards the schedule, there is still a delay compared with the most recent schedule. Commissioning is therefore likely to take place later than the third quarter of 2028. Completion of the structural works, including masonry, had been planned for August 2025, but has been postponed to early July 2026. On site, installation of technical systems is ongoing and the process for repairing the wall surfaces has been carried out.

Before full commissioning of the RECUMO installation, SCK CEN must demonstrate that the removal and processing of highly radioactive liquids can be guaranteed and that all necessary approvals, authorisations and/or licences can be granted, in accordance with Article 19.5 of the licence. SCK CEN is examining several options for this, namely vitrification and cementation. The choice will be made by 2026 at the latest.

Before full commissioning of the RECUMO installation, SCK CEN must also prepare a concrete and substantiated plan, taking into account the results of the test phase. This plan must demonstrate that the end product will actually be used and removed from the SCK CEN site. In this context, SCK CEN has signed a letter of intent with a third party.

2.9 WENRA 2014 Safety Reference Levels

The WENRA 2014 Safety Reference Levels were incorporated, via the Royal Decree of 19 February 2020, as additional safety requirements in the Royal Decree of 30 November 2011 on the safety requirements for nuclear installations. The WENRA RL2014 project, initiated in 2016, aims to ensure the timely implementation of these safety requirements at the Belgian nuclear power plants on the Doel and Tihange sites.

In the context of the WENRA RL2014 project, ENGIE Electrabel performed a large number of safety assessments, in particular with regard to design extension conditions (DECs) for both reactors and spent fuel pools, natural hazards (mainly earthquakes, external flooding, meteorological hazards and combinations of hazards), postulated initiating events for spent fuel pools (SFP PIEs), and spent fuel pool PSAs (SFP PSAs), including external hazards.

As a result of these safety assessments, several safety improvements have been recommended and implemented at the Belgian nuclear power plants. These mainly consist of modifications to existing hardware or procedures, as well as a number of new fixed or mobile systems.

In 2025, taking into account findings identified by Bel V during the evaluation of the safety assessments, as well as corrections identified by Tractebel and ENGIE Electrabel themselves, Tractebel and ENGIE Electrabel delivered the final update of the WENRA RL2014 documentation. This also included adaptations of the safety analysis reports for Doel 4 and Tihange 3, in view of their long-term operation.

Bel V continues to closely monitor these final stages of the project in cooperation with the FANC.



2.10 Belgoprocess construction projects

The construction of buildings 167X and 170X and of the installation for the production of monoliths (IPM) is ongoing and is being monitored by Bel V through hold points and witness points.

- o For building 167X, the civil engineering works have been completed, as has most of the installation of the various systems (including overhead cranes, ventilation, radiation monitoring and skids). In this context, Bel V carried out three inspections in 2025. Acceptance of the installation is planned for the end of 2026.
- o Construction of building 170X, intended for dismantling work on the vessels in buildings 105 and 122, is progressing according to schedule. Bel V is monitoring the hold points and witness points and approved the test programmes for the ventilation and radiation monitoring systems.
- o Construction work for the installation for the production of monoliths had already been completed in 2022. The necessary semi-industrial commissioning tests were also carried out at that time. In 2025, Bel V did not carry out any inspections in this context. Bel V did, however, analyse a second draft version of the final safety report, after which its comments were discussed with the licensee. Belgoprocess expects the installation to be accepted in 2026.

Construction of buildings 136F and 165X (ROC – Receptie- en OpslagCentrum) also started in 2025. A kick-off meeting was first organised to discuss the various phases. The inspection and test plans for Lot 1 (civil engineering) for both projects were then submitted to Bel V and supplemented and approved by Bel V. Both construction projects are being monitored by Bel V through hold points and witness points.

2.11 (Pre-)licensing of new facilities

For Belgoprocess, pre-licensing discussions for several new facilities were launched or continued in 2025:

- o In the fourth quarter, pre-licensing discussions were launched for building 136X, zone E. This facility will be an extension of the existing 136X facility for the storage of reactor pressure vessel internals (RPVIs) from the Doel and Tihange nuclear power plants. A kick-off meeting was organised and the first technical notes are being analysed by Bel V.
- o Belgoprocess intends to build a new water treatment installation on Site 1. Pre-licensing discussions for this installation continued in 2025. In this context, Bel V analysed the preliminary safety report and submitted its feedback to Belgoprocess. The aim is to conclude the pre-licensing discussions in the second quarter of 2026.
- o For the new 168X and Messina facilities, a meeting was organised with Belgoprocess in the second quarter, after the first technical notes had been submitted. Belgoprocess is currently further developing the technical notes and the preliminary safety report. Buildings 168X and Messina will be used mainly for the storage of waste currently stored in the bunkers of building 127X. Building 127X no longer meets the current nuclear requirements set out in the Royal Decree of 30 November 2011 on the safety requirements for nuclear installations.

As already mentioned in Section 2.7, ENGIE Electrabel launched the pre-licensing discussions for a new facility for the dry storage of spent fuel in dual-purpose containers, for both transport and storage. This is required under the Phoenix Agreement, which stipulates that the DE building for wet storage at the Tihange site must be emptied and that the spent fuel must be stored in dual-purpose containers.



3 INTERNATIONAL ACTIVITIES AND PROJECTS

3.1 Cooperation with international organisations

3.1.1 Organisation for Economic Co-operation and Development organisations

Bel V continued to plan an active role in the activities of various committees, working groups and meetings organised by the Organisation for Economic Co-operation and Development (OECD), including the following:

■ Committee on Nuclear Regulatory Activities (CNRA)

- o Working Group on Reactor Oversight (WGRO)
- o Expert Group on Operating Experience (EGOE)
- o Working Group on Leadership and Safety Culture (WGLSC)
- o Working Group on the Safety of Advanced Reactors (WGSAR)

■ Committee on the Safety of Nuclear Installations (CSNI)

- o Working Group on Fuel Cycle Safety (WGFCFS)
- o Working Group on Fuel Safety (WGFS)
- o Working Group on Risk Assessment (WGRISK)
- o Working Group on the Analysis and Management of Accidents (WGAMA)
- o Working Group on the Integrity and Ageing of Components and Structures (IAGE), including its subgroups on the integrity of metal components and structures and on the ageing of concrete structures
- o Working Group on Human and Organisational Factors (WGHOF)
- o Working Group on Electrical Power Systems (WGELEC)
- o Working Group on External Events (WGEV)

■ Nuclear Science Committee (NSC)

■ Incident Reporting System coordinators' activities, including IRS, IRSRR and FINAS

For more information on Bel V's participation in specific OECD projects, please refer to Section 4.4 on research and development.





3.1.2 International Atomic Energy Agency

Bel V's activities in relation to the International Atomic Energy Agency (IAEA) covered both standing committees and specific events.

Standing committees

- o Bel V's Director General, who was elected Chair of the IAEA Technical and Scientific Support Organization Forum (TSOF) in 2020, chaired the activities of the TSOF Steering Committee.
- o A Bel V representative continued to serve as a member of the Steering Committee on Regulatory Capacity Building and Knowledge Management, coordinated by the IAEA.
- o Bel V participated in meetings of the Steering Committee of the Regulatory Cooperation Forum, as well as in support meetings with the European Commission.

Participation in specific IAEA events

Bel V experts participated in several IAEA conferences, workshops, technical committee meetings and webinars, mainly on the following topics:

- o climate change
- o decommissioning management
- o use of artificial intelligence, with a focus on human factors, engineering, and instrumentation and control systems
- o siting process for a deep geological disposal facility
- o periodic safety review of research reactors
- o IAEA safety standards
- o nuclear supply chain and procurement management
- o computer security inspections
- o seismic hazard assessment
- o use of digital technologies for instrumentation and control systems





3.2 Cooperation with safety authorities

3.2.1 Western European Nuclear Regulators Association

In 2025, Bel V continued to participate in working groups of the Western European Nuclear Regulators Association (WENRA).

Reactor Harmonization Working Group

Bel V participated in the activities of the Reactor Harmonization Working Group (RHWG), in support of the FANC.

The RHWG continued its benchmark study on the implementation of the 2020 Safety Reference Levels (SRLs) in national regulations.

Bel V also contributed to discussions on safety objectives and potential RHWG activities relating to new reactors and small modular reactors, through the dedicated Working Group on New Reactors, as well as to discussions on the glossary related to the WENRA Safety Reference Levels.

Working Group on Waste and Decommissioning

The 53rd meeting of the Working Group on Waste and Decommissioning (WGWD) was held in Paris (France) from 19 to 23 May. Bel V participated in support of the FANC.

Key topics included progress on benchmarking activities relating to processing, storage, disposal and decommissioning, as well as the status of the guidelines aimed at harmonising the nuclear regulatory systems of WENRA countries, based on the Safety Reference Levels.

3.2.2 French-Belgian Working Group on the Safety of Nuclear Installations

This working group comprises the French and Belgian regulatory authorities, namely ASNR (Autorité de sûreté nucléaire et de radioprotection) for France and the FANC and Bel V for Belgium. One or two meetings are held each year, alternating between Paris and Brussels. The Brussels meetings are chaired by Bel V. The working group meetings address a broad range of topics relating to nuclear safety.

An online meeting was held on 17 April, during which the following topics were discussed:

■ Regulatory aspects and projects

→ FRANCE

- the French nuclear landscape and the related nuclear new-build
- programme, including the planned construction of six EPR2 reactors
- long-term operation for up to 60 years
- ongoing SMR initiatives
- the ASN-IRSN merging process

→ BELGIUM

- the status of the long-term operation of Doel 4 and Tihange 3
- feedback from the chemical decontamination of Tihange 2
- the LEANDREA (Lead-cooled Experimental Advanced Demonstrator Reactor for Europe Applications) lead-cooled fast reactor (LFR) project
- the activities at the IRE facilities, the main related challenges and recent or ongoing projects, such as the conversion to the use of LEU targets instead of HEU

■ Overview of events at nuclear facilities

■ Exchanges on emergency preparedness and response arrangements and exercises



3.2.3 Belgian-Swiss Working Group

This working group comprises the Swiss and Belgian regulatory authorities, namely ENSI (Eidgenössisches Nuklearsicherheitsinspektorat) for Switzerland and the FANC and Bel V for Belgium. One meeting is held each year, alternating between Bruges and Brussels.

The 2025 meeting was held in Brussels on 12 May, followed by a visit to the Tihange site on 13 May. The following topics were discussed:

- **Exchange of information**
 - o the current status of nuclear facilities
 - o changes in the regulatory framework
 - o recent events
- **Update on decommissioning projects**
 - o progress on decommissioning projects in Switzerland
 - o progress on decommissioning projects in Belgium
- **Update on disposal projects in both countries**
- **Update on long-term operation (LTO) projects**
 - o progress on LTO projects in Switzerland
 - o progress on LTO projects in Belgium
- **Process for the procurement of replacement parts, including commercial-grade versus nuclear-grade parts**

3.2.4 Autoriteit Nucleaire Veiligheid en Stralingsbescherming (the Netherlands)

This working group comprises the Dutch and Belgian regulatory authorities, namely ANVS (Autoriteit Nucleaire Veiligheid en Stralingsbescherming) for the Netherlands and the FANC and Bel V for Belgium. One meeting is held each year, alternating between The Hague and in Brussels.

The 2025 meeting was held in Brussels on 13 October. The following topics were discussed:

- **Evaluation of agreements made**
 - o joint inspections
 - o emergency preparedness and response exercises: ANVS flowcharts for a general emergency at the Borssele nuclear power plant
 - o cross-border information sharing in licensing procedures
 - o communication and information exchange
- **Governance**
 - o review of the 69th session of the General Conference
 - o recent developments related to new-build projects, small modular reactors and long-term operation
 - o the Dutch decision-making process relating to the disposal of radioactive waste
 - o ANVS strategy
 - o capacity building and knowledge development
 - o resilience
 - o gender, diversity and inclusion
 - o cooperation between ANVS and the FANC
 - o developments within international organisations



3.2.5 Deutsch-Belgische Nuklearkommission

The ninth meeting of the German-Belgian Nuclear Commission (Deutsch-Belgische Nuklearkommission – DBNK) was held in Bonn on 8 May, in accordance with the bilateral agreement concluded on 19 December 2016 between Jan Jambon, Belgian Minister of Security and the Interior, and Dr Barbara Hendricks, German Federal Minister for the Environment.

The following topics were discussed:

■ General exchange of information on recent regulatory developments

→ BELGIUM

- overview of organisational changes
- overview of updated regulations
- evolution of the nuclear context

→ GERMANY

- overview of organisational changes
- overview of updated regulations
- update on waste disposal in Germany, including the site selection process
- RLZ-Bund exercises

■ Exchange of information on nuclear facilities, including their status, operating experience, current safety topics, projects and licensing

→ BELGIUM

- recent events and operating experience
- update on projects and licensing, including LTO and SF2

→ GERMANY

- general operating experience
- German information notices, including the Weiterleitungsnachricht WLN 2024/03 on the failure of Zener diodes in I&C cabinets at Brokdorf nuclear power plant

→ NORTH RHINE-WESTPHALIA

- overview of organisational changes
- status report on nuclear facilities in the region

→ RHINELAND-PALATINATE

- overview of organisational changes
- status report on nuclear facilities in the region





3.3 Collaboration with technical safety organisations

3.3.1 European Technical Safety Organisations Network

The European Technical Safety Organisations Network (ETSON), founded in 2006 with Bel V as one of its founding members, serves as a collaborative platform through which member organisations can:

- o provide a forum for voluntary exchanges on safety analyses and R&D in the field of nuclear safety, by sharing experience as well as technical and scientific views;
- o contribute to the convergence of technical nuclear safety practices within and beyond the European Union;
- o support the planning and implementation of nuclear safety research programmes;
- o facilitate the application of the European Nuclear Safety Directive;
- o collaborate on safety assessment and research projects funded separately and organised by the respective members within dedicated consortia.

From 2015 to October 2018, Bel V's then Director General served as President of ETSON. Since October 2019, the current Director General of Bel V has held the position of Vice-President of ETSON. During the first half of 2025, Bel V's Director General also served as acting President of ETSON.

Given Bel V's long-standing membership of the ETSON Board, and in order to give other members the opportunity to serve on the Board, Bel V decided to step down from the ETSON Board with effect from July 2025.

The exchanges and collaboration with TSO peers through ETSON enable Bel V staff to strengthen their technical and scientific expertise and further consolidate the quality of their safety assessments and positions.

3.3.2 2025 ETSON Conference on maintaining scientific and technical independence

The 2025 ETSON Conference was held under the theme 'The challenges facing national TSOs in maintaining robust scientific and technical independence in a rapidly changing nuclear landscape'.

Following previous ETSON conferences organised by the German technical safety organisation GRS (Gesellschaft für Anlagen- und Reaktorsicherheit) and Bel V, the 2025 edition was organised by RSD-Amentum in cooperation with the other ETSON members. The conference provided a forum for technical safety organisations (TSOs) to exchange views on how best to support regulatory bodies at a time of significant change in the nuclear sector. The central focus of the conference was how TSOs can preserve one of the foundations of their role: strong scientific and technical independence.

The conference was held in Manchester (UK) on 27 and 28 October, bringing together around 40 participants from various European TSOs.

The conference opened with an impulse speech by WENRA, followed by a round-table discussion and a Q&A session. It also included four dedicated sessions covering the following topics:

- o reports from the ETSON expert groups and activities relating to the Technical Board on Reactor Safety (TBRS)
- o ETSON common safety research projects
- o interaction and dialogue with stakeholders
- o reports on ETSON members' national programmes, TSO activities and cooperation activities

As is customary at the ETSON conferences, an ETSON Award Science Slam was organised by the ETSON Junior Staff Programme. The event concluded with the award ceremony.



3.3.3 Collaboration with technical safety organisations on waste management

Bel V maintains close collaboration with other technical safety organisations, notably through its involvement in the SITEX.Network association. This initiative is primarily aimed at strengthening TSO expertise in the field of radioactive waste management. The association is currently chaired by Bel V.

Bel V also plays an active role in the European Joint Programme on Radioactive Waste Management (EURAD), which focuses on R&D, strategic studies and knowledge management. Bel V chairs the Bureau of EURAD-2 and, in this capacity, is responsible for preparing the programme's strategic decisions.

Lastly, Bel V is involved in the TournemirE coNsORTium (TENOR) partnership, initially led by the French TSO IRSN, which is now integrated in the French nuclear safety authority ASN. TENOR seeks to strengthen collaboration among technical safety organisations through experimental research activities conducted at the Tournemir underground laboratory in France.

These strategic and technical activities enhance Bel V's understanding of the key challenges and priorities facing the international community in the safe management of radioactive waste.





3.4 International assistance projects

3.4.1 Autoriteit Nucleaire Veiligheid en Stralingsbescherming (the Netherlands)

Bel V, as lead entity in a consortium with the French nuclear safety authority ASNR and Bureau Veritas, supports the Dutch nuclear safety authority ANVS (Autoriteit Nucleaire Veiligheid en Stralingsbescherming) in its role as a technical safety organisation.

A contract covering a minimum period of five years was signed and entered into force at the start of 2022. The contract consists of three lots:

- o lot 1 – assessments
- o lot 2 – inspections
- o lot 3 – information gathering and advisory services relating to new developments

Under this framework, several assignments have been carried out in various domains, including radiation protection, training, waste management, and civil and mechanical engineering.

3.4.2 Autorité de sûreté nucléaire et de radioprotection (France)

At the start of 2024, Bel V and the French nuclear safety authority ASNR (Autorité de sûreté nucléaire et de radioprotection) signed a framework agreement to strengthen their partnership in the field of nuclear safety expertise, particularly in relation to pressurised water reactors.

A number of missions have already been entrusted to Bel V under this agreement, covering areas such as thermal fatigue, general operating rules, civil engineering, and incident and accident management.

Following a first mission dedicated to the feedback experience from the construction of the Flamanville 3 European Pressurised Reactor (EPR), another mission for ASNR related to inspection support in the framework of the Evolutionary Power Reactor 2 (EPR2) project. In 2025, three inspections were performed, focusing on leadership, safety culture and planning practices.

3.4.3 European Commission assistance projects

The European Instrument for International Nuclear Safety Cooperation (INSC) aims to promote a high level of nuclear safety, radiation protection, the safe management of spent nuclear fuel and radioactive waste, and the application of effective and efficient safeguards for nuclear materials in third countries.

This objective is pursued through cooperation with key stakeholders, particularly nuclear regulatory authorities, in order to transfer EU expertise.

The nuclear safety programme is implemented through projects awarded via international calls for tender, using restricted and negotiated procedures managed by the European Commission and based on specific requirements regarding technical expertise.

For Bel V, participation in these projects represents a valuable opportunity to share and apply its knowledge and operating experience at international level.

Ukraine

Since September 2023, Bel V has been involved in a 42-month INSC project to support the Ukrainian regulator SNRIU and its technical safety organisation SSTC-NRS. The overall objective is to align the Ukrainian regulatory framework more closely with the EU acquis and to strengthen the regulator's capacity to perform its functions effectively, in accordance with international standards and best practices.

Bel V is contributing specifically to the task related to ageing management and fire safety in Ukrainian nuclear power plants.



Nigeria

Since September 2023, Bel V has been involved in a 24-month INSC project to support the Nigerian Nuclear Regulatory Authority (NNRA). The overall objective is to enhance the NNRA's capacity and competencies and to align its safety culture and standards in radiation protection and nuclear safety with those of the European Union.

Bel V acts as project lead and is responsible for supporting the NNRA in human resources management, with a focus on improving resource development and the safety training plan, in line with European best practices.

Bel V is also contributing to a task involving the update of the regulatory framework for research reactors. The project was initially scheduled for completion in September 2025, but was extended until 31 March 2026, with only a limited contribution from Bel V during the extension period.

Armenia

Since September 2024, Bel V has been involved in a 24-month INSC project to support the Armenian Nuclear Regulatory Authority (ANRA) and its technical safety organisation NRSC. The project aims to help align Armenian practices with EU stress-test initiatives and relevant EU and WENRA regulations.

Bel V is contributing to the transfer of knowledge relating to EU harmonisation and to the regulatory review of safety improvements at the Armenian Nuclear Power Plant (ANPP).

Team-Up Africa

Bel V is participating in the INSC Team-Up Africa project. It is responsible for tasks related to deterministic safety analysis and probabilistic safety assessment training, as well as human skills development for six African countries: Egypt, Morocco, Nigeria, Ghana, South Africa and Kenya. The project started in early 2025 and will run for four years.

Bel V carried out five missions in 2025. The 2026 work plan was set out at the Steering Committee meeting held in South Africa in January 2026.

3.4.4 Fusion for Energy

Within the framework of the International Thermonuclear Experimental Reactor (ITER) project, Fusion for Energy (F4E) acts as the 'external intervener' responsible for supervising and providing evidence that its organisation and supply chain comply with the French Installation Nucléaire de Base (INB) Order. This requires ensuring that the relevant documentation reflects and disseminates the requirements of the INB Order. Bel V was engaged to support F4E in this area.

Under this contract, Bel V carried out three inspections in 2025.



56
Number of
participations in
(inter)national
workshops &
conferences



4 EXPERTISE MANAGEMENT

4.1 Domestic experience feedback

Bel V systematically screens events at all Belgian nuclear facilities and carries out in-depth analyses of selected events, with particular focus on root causes, corrective actions and lessons learned. In 2025, around 55 events were analysed and recorded in the domestic experience feedback database.

For a number of events, a more detailed event analysis is performed to identify insights that may be applicable to a broader range of nuclear facilities. In 2025, these analyses led to the publication of two reports: IRS 9347 on the degradation of secondary containment due to severe corrosion at Doel 4, and IRSRR 249 on loose parts in the primary circuit of BR2.

Several noteworthy events in 2025 were subject to in-depth analysis by Bel V. This included regulatory inspections and the follow-up of corrective actions. From these events, a number of key lessons were identified, notably in relation to the following topics:

- o the importance of fully integrating operating experience feedback into procedures in order to preserve individual know-how as collective knowledge
- o the risk that unclear or insufficiently user-friendly procedures may increase the likelihood of errors
- o the need to strengthen pre-job briefings and cross-checks to ensure that procedures are fully understood and followed
- o the importance of prioritising alarms during periods of high demand in the main control room
- o the importance of holding kick-off meetings before complex operations and clarifying the roles and responsibilities of each stakeholder
- o the fact that sealed radioactive sources can degrade over time, even without mechanical impact
- o the need for appropriate requalification of equipment following interventions or maintenance activities
- o the need to thoroughly verify the conformity of safety equipment placed in a locked-out condition with the applicable technical specifications





4.2 Foreign operating experience feedback

In addition to screening domestic events, Bel V also reviews events at foreign nuclear facilities, as well as potentially generic issues that may impact safety, require technical resolution by licensees or warrant generic communication to licensees.

Based on its analysis of selected events, Bel V may issue formal Operating Experience Examination Request Letters (OEERs), Operating Experience Information Letters (OEILs) or requests for clarification from licensees on the extent to which operating experience has been taken into consideration. Bel V may also conduct specific inspections.

In 2025, the licensee of the Belgian nuclear power plants was invited to provide answers to specific questions following the analysis of the following reports:

- o IRS 9227 – unit 1 protection and monitoring system (PMS) division D cabinet lost power and steam generator (SG) narrow-range level decreased to Low 2, actuating auto scram and safety injection
- o IRS 9287 – electrical protection relays compromised in a 6.6 kV electrical panel supplying safety systems
- o IRS 9290 – 1450 Mw reactor series: presence of foreign material that could affect recirculation of the safety injection functions in the reactor building
- o IRS 9342 – exposure of a worker in excess of the regulatory annual limit
- o WATERFORD 3 – automatic reactor trip due to transformer failure

Bel V also performed further follow-up based on earlier exchanges concerning the following event:

- o IRS 9344 – cable damage caused by thermal exposure, with potential safety consequences

5.4%

**Percentage of total working time
dedicated to R&D in 2025**

4.3 Knowledge management

Bel V places strong emphasis on knowledge management, particularly in view of the upcoming retirement of several experienced staff members over the coming years. A variety of tools are used to generate, capture, transfer, apply and preserve knowledge across the organisation.

At the core of Bel V's knowledge management approach are the Technical Responsibility Centres (TRCs), which serve as 'centres of competence' for all key fields of expertise within the organisation. Bel V currently has around 20 TRCs. New centres are established as needed to reflect developments in the nuclear field, with recent additions covering areas such as decommissioning and security. The management and operation of the TRCs are fully integrated into Bel V's Quality System.

In 2025, Bel V recruited several new engineers, requiring significant efforts from more experienced staff to ensure adequate knowledge transfer. Each new recruit is assigned a coach to support their integration, complemented by (among other things) on-the-job training and cross-functional activities. The onboarding of a larger number of new staff members also requires tailored training programmes (see Section 4.5).

Special attention is also given to transferring knowledge from retiring experts to younger staff. For this purpose, Bel V uses a Knowledge Transfer Form and applies a Knowledge Critical Grid to identify and mitigate the risk of losing critical expertise. Other tools, such as Knowledge Books, have also been developed to support this process.

Knowledge management is closely linked to Bel V's R&D activities, which aim to generate new skills, improve methods and enhance process efficiency (see Section 4.4).

Another key enabler is the ongoing implementation of Bel V's adapted Electronic Documentation Management software (KOLIBRI), based on Hummingbird DM. This tool supports efficient information retrieval, facilitates knowledge sharing and eases the integration of new staff members. To optimise the use of KOLIBRI, a dedicated DOCumentation USers group (DOCUS) has been established. This committee is responsible for analysing user needs and driving continuous improvement.



4.4 Research and development

4.4.1 Introduction

Research and development (R&D) activities are essential to the formation of Bel V's independent and informed safety positions. Ongoing efforts are devoted to maintaining, strengthening and consolidating the expertise of Bel V's technical team in relevant areas of nuclear safety, radiation protection and security. In addition, R&D activities performed or supported by Bel V play an increasingly important role in supporting government decision-making, particularly in relation to the potential construction of new nuclear power plants and small modular reactors. They also contribute to Bel V's international positioning and advance its business development strategy.

The following sections provide an overview of the main outcomes of R&D activities carried out in 2025.

In total, Bel V devoted 7,245 hours to R&D in 2025, representing 7.5% of the total working time of its technical staff.

Throughout the year, Bel V delivered a number of presentations in the framework of various projects, meetings and conferences. A significant number of project deliverables were produced and several papers were published in international journals.

Bel V also continued to engage in valuable collaborations with various European organisations, including through joint projects under the NEA and EURATOM frameworks, as well as with ASNR, GRS, universities and research institutes.

Number of R&D deliverables

- 4 papers
- 5 abstracts
- 26 reports
- 31 presentations

4.4.2 R&D on nuclear installation safety

Thermal-hydraulic phenomena

Most of the thermal-hydraulic R&D activities scheduled for 2025 were successfully carried out. These activities primarily involved participation in the following projects:

- o OECD/NEA ATLAS-4 (Advanced Thermal-hydraulic Test Loop for Accident Simulation 4), relating to experiments conducted at the ATLAS and containment CUBE test facilities. This project, which started in 2025, aims to perform additional experiments on phenomena associated with DEC-A scenarios involving natural circulation flows and the assessment of passive system performance. Bel V participated in project meetings and carried out and presented analytical activities relating to pre-test calculations using the CATHARE code. The test addresses the natural circulation interruption phenomenon.
- o OECD/NEA POLCA (Pool during Loss-of-Cooling Accident), a new project dedicated to investigating accident phenomena in spent fuel pools. The project plans to use advanced computational tools such as CATHARE and computational fluid dynamics (CFD) codes, both to strengthen the expertise of Bel V's CFD Forum Group and within the framework of bilateral cooperation with UCL.
- o International Standard Problem (ISP) 52, relating to primary coolant loop (PKL) experiments on multiple steam generator tube ruptures. The CATHARE2 and RELAP5 codes were used for the analytical assessments. Simulation results obtained with both codes were presented during project meetings.
- o Expert International Standard Problem (ISP) 53, relating to COolability of a fuel Assembly during LOCA (COAL) experiments. This project involves the analysis of loss-of-coolant accident (LOCA) reflood and aspersion experiments. CATHARE2 simulation results of the COAL reflooding experiments were presented during project meetings.

In 2025, Bel V also produced several international papers, project deliverables and presentations.



Mechanical safety

As part of the OECD/NEA Working Group on Integrity and Ageing of Components and Structures (WGIAGE) framework, Bel V is actively contributing to an international benchmark aimed at assessing the ability of structural integrity models to predict leak flow rates and crack growth due to stress corrosion cracking (SCC), compared with real operational experience. This collaborative project, organised in two phases, brings together international experts to enhance the understanding and modelling of SCC, which is a critical issue for the safety of nuclear facilities.

In 2025, Bel V initiated advanced modelling work as part of the second phase of the OECD benchmark analytical activity. The focus was on developing and applying numerical models based on anonymised real-world cases identified during the first phase, in order to evaluate the accuracy of simulation tools in predicting crack behaviour and associated leak rates. Bel V used finite element analysis with ABAQUS software, a leading tool for addressing complex structural mechanics challenges.

Fuel and neutronics aspects

In 2025, Bel V actively participated in the OECD/NEA Studsvik Cladding Integrity Project V (SCIP-V), a five-year international research initiative aimed at addressing fuel and cladding performance during interim storage, fuel behaviour in loss-of-coolant accident scenarios, and the development of accident-tolerant fuel (ATF). A significant part of Bel V's contribution focused on advocating for the inclusion of M5 cladding material in the project testing programme, recognising its relevance not only for Belgian nuclear power plants, but also for other plants worldwide.

Fire protection

Bel V continued its participation in OECD/NEA projects addressing fire safety issues. In this context, Bel V was actively involved in various annual meetings under the OECD/NEA framework:

- o Fire risk Assessment through Innovative Research (FAIR) project: Bel V was involved in the Analytical Working Group (AWG), which addresses the test specifications for the experimental campaign aimed at studying fire propagation between multiple discrete sources

- o Fire Incidents Records Exchange (FIRE) database project: Bel V was involved in entering historical event data into the database

Probabilistic safety assessment

Bel V's R&D activities in the area of probabilistic safety assessment (PSA) in 2025 primarily focused on participation in international meetings and events. These included the Working Group on Risk Assessment (WGRISK) meeting and a public workshop organised by the US Nuclear Regulatory Commission (USNRC) on realism in probabilistic risk assessment (PRA).

As part of the Methods and Tools Innovation for Seismic safety assessment (METIS) project, Bel V attended the final event, during which the project outcomes and results from the past five years were presented.

The METIS framework includes the OpenQuake engine, state-of-the-art open-source software for earthquake hazard and risk modelling. Bel V staff are currently taking online training on OpenQuake to maintain their expertise in probabilistic seismic hazard analysis (PSHA), in view of reviewing the PSHA study for the Lead-cooled European Advanced Nuclear Demonstrator Reactor for Energy Applications (LEANDREA).

Severe accidents

In 2025, Bel V continued to develop and enhance its expertise in severe accident analysis and simulation capabilities using the MELCOR code. These efforts support Bel V's ability to conduct independent severe accident safety assessments for Belgian nuclear facilities and enhance its international visibility and experience.

Bel V also remained involved in the Horizon 2020 Artificial intelligence for the Simulation of Severe Accidents (ASSAS) project, funded by the European Commission, which explores the use of artificial intelligence (AI) and machine learning (ML) to support severe accident assessments using codes such as ASTEC. This project was concluded in 2025.



Concrete ageing

As part of the Observatory of the durability of reinforced concrete structures (ODOBA) project, Bel V hosted the annual ODOBA Technical Group (OTG) meeting and the Steering Committee meeting. These meetings provided participants with an overall overview of experiments performed on different concrete blocks under natural or accelerated ageing conditions. They also enabled Bel V to obtain information on ongoing projects in other countries relating to concrete ageing and associated issues.

4.4.3 R&D on waste and decommissioning

Near-surface disposal of category A waste

R&D activities in this area in 2025 focused primarily on:

- o drafting a report summarising the different techniques that can be applied in the radiological and physicochemical characterisation of radioactive waste;
- o preparing a roadmap outlining the objectives and expectations for a project involving the development of a tool by a ULB master's student, as part of his thesis, for the independent verification of waste storage plans.

Geological disposal of category B&C waste

R&D activities in 2025 focused primarily on strategic development within the framework of EURAD and SITEX.Network.

Activities were carried out under the deployment plan for fulfilling the strategic research needs associated with the geological disposal of category B&C waste, as well as under the SITEX benchmark.

Bel V also continued its participation in the EURAD-2 project. This mainly focused on strategic studies on:

- o SMR waste management;
- o optimisation of radioactive waste disposal facilities;
- o the impact of climate change on radioactive waste management;
- o new materials for spent fuel containers.

Bel V also produced a number of project deliverables and presentations in 2025.

Decommissioning and clearance

In 2025, the following activities were carried out:

- o For the Assessment of Effectiveness of Geologic Isolation Systems (AEGIS) project, a number of R&D activities were performed, including the drafting of documents relating to uncertainty management, detector usage procedures and waste selection methodologies. These documents cover comprehensive spectrum acquisition and summation techniques, as well as methods for modelling, analysing and managing uncertainties. Reanalyses and sample recounts were also carried out to correct the results of the intercomparison exercise. In collaboration with the Institut supérieur industriel de Bruxelles (ISIB), a student carried out work relating to geostatistics as part of his thesis. The aim is to develop skills and tools for processing contamination data using a geostatistical approach. This will strengthen Bel V's ability to carry out independent monitoring in the context of releasing premises previously associated with a contamination risk, as well as its technical expertise in this area.
- o For the EU HARmonised PracticEs, Regulations and Standards in waste management and decommissioning (HARPERS) project, Bel V was involved in Work Packages 4 and 6. In 2025, Bel V only contributed to the drafting of the position paper for Work Package 4. This project was concluded in 2025.



4.4.4 R&D on cross-cutting issues

Safety culture assessment

In 2025, R&D technology and regulatory watch activities were organised in order to maintain and improve the processes in place.

Bel V also performed its third internal safety culture assessment, following the assessments carried out in 2016 and 2021. The 2025 assessment highlighted a number of points for consideration, and the results were communicated to staff.

Cybersecurity

In 2025, a complete redesign of the laboratory's technical foundations was performed, including a full redevelopment of the previous version. The results opened up promising development prospects, including preparations for a master's thesis and plans for a new internship.

Concurrently, tools such as Git and reporting tools were optimised to ensure smooth collaboration.

Small modular reactors

In 2025, Bel V participated in several international meetings, training activities and working groups relating to small modular reactors (SMRs). These included the IAEA Interregional Training Course on Safety Aspects of Small Modular Reactors and the 7th meeting of the Expert Group on Small Modular Reactors (EGSMR).

In addition, the CATHARE and TRACE models of the COMPONENT LOOp Tests (COMPLIT) test facility at SCK CEN were assessed against lead-bismuth eutectic (LBE) experimental data. The models still need to be improved in order to better match the experimental data. Dedicated documents were prepared to record the main outcomes.

In the EU Ensuring Assessment of Safety Innovations for Small Modular Reactors (EASI-SMR) project, Bel V was involved in three Work Packages covering the following topics:

- o approaches to the licensing of light water-cooled small modular reactors (LW- SMRs)
- o waste management
- o hybrid energy system simulation using RELAP5
- o passive system simulation using CATHARE
- o identification of unique LW-SMR features with a focus on control room supervision
- o LW-SMR safety from the perspective of the interface between security and cybersecurity

In 2025, Bel V participated in several progress and preparatory meetings for these Work Packages.

Fusion safety and licensing

As part of the EU Towards Harmonisation in Licensing of Future Nuclear Power Plant Technologies in Europe (HARMONISE) project, Bel V participated in the final project meeting.

Use and applications of artificial intelligence and machine learning

2025 was the first full year in which Bel V tested artificial intelligence (AI) solutions on a number of use cases. ChatGPT was the first solution considered, but certain factors led Bel V to opt for models developed by the European company Mistral AI. Other options, such as setting up an internal server, appeared premature given the maturity of AI use within Bel V.

Nuclear security

Following a literature review, a security case study was identified for one nuclear power plant. The assessment was carried out using relevant RiskSpectrum data translated into security-related information. The model was adapted for the selected initiating events. Simulation calculations were performed and the associated results were analysed and reported.



4.4.5 R&D collaboration

In 2024, Bel V continued several R&D collaborations with Belgian universities, research institutes and other organisations within the framework of ETSO, OECD/NEA and European Commission projects. Other collaborations, including the HARMONISE and HARPERS projects, were concluded in 2025.

Collaboration with Belgian universities

■ Université catholique de Louvain (UCL)

Bel V continued its collaboration with UCL by proposing research topics for PhD and/or bachelor's students. In 2025, Bel V continued its collaboration with UCL in the OECD/NEA POLCA project. Through this collaboration, UCL complements Bel V's analytical contribution using advanced computational fluid dynamics (CFD) tools.

■ Université Libre de Bruxelles (ULB)

Bel V developed a roadmap for a master's thesis by a ULB student, focused on developing a tool for the independent verification of waste emplacement plans. In addition, Bel V and ULB maintained their ongoing collaboration in the area of cybersecurity.

Collaboration with other technical safety organisations, research entities and regulatory bodies

■ Autorité de sûreté nucléaire et de radioprotection (ASNR)

Bel V collaborates with the French nuclear safety authority ASNR within the framework of the Observatory of the durability of reinforced concrete structures (ODOBA) project, which involves conducting experiments on concrete ageing and degradation mechanisms at facilities in Cadarache (France).

In 2025, an initiative was launched to hold periodic expert meetings to address a range of technical issues, with a primary focus on thermal-hydraulic topics.

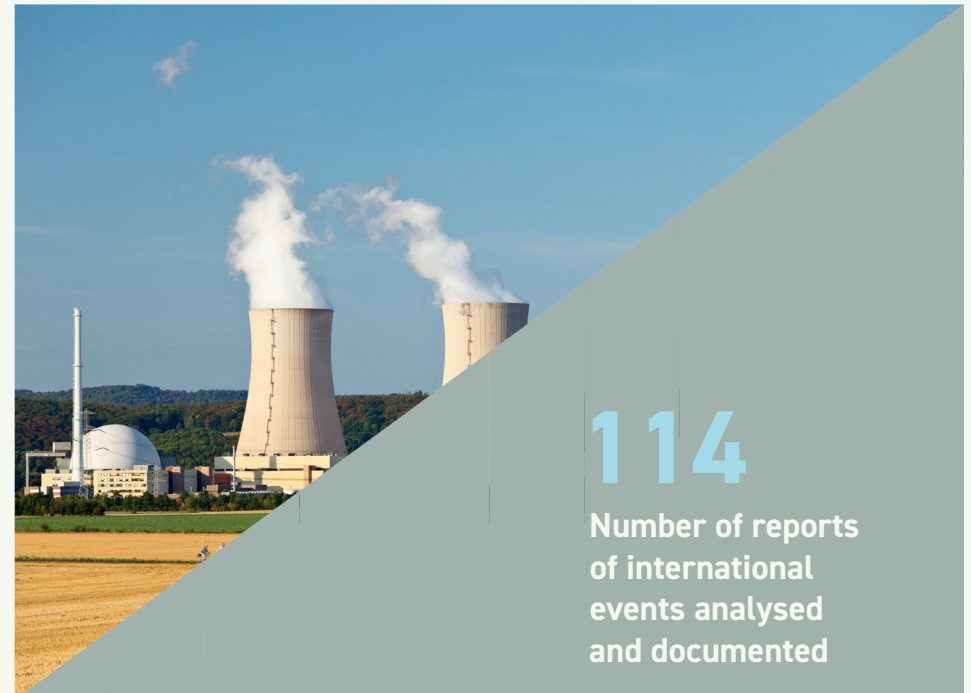
■ European Technical Safety Organisations Network (ETSON)

As in previous years, Bel V actively participated in ETSO's Technical Board on Reactor Safety (TBRS) and its associated Expert Groups (EGs). These activities facilitate the exchange of views and experience among technical safety organisations.

In 2025, a number of articles on Bel V's R&D activities were published on the ETSO News webpage.

■ SCK CEN

Bel V continued its collaboration with SCK CEN in the context of the COMPONENT LOOp Tests (COMPLIT) project. The collaboration focuses on simulating experiments conducted in SCK CEN's COMPLIT test facility using the CATHARE and TRACE codes.





Collaboration within International joint projects

■ OECD Nuclear Energy Agency (OECD/NEA) working groups

Bel V participated in several OECD/NEA working groups in 2025, including the following:

- o Working Group on Integrity and Ageing of Components and Structures (WGIAGE)
- o Working Group on Risk Assessment (WGRISK)
- o Expert Group on Small Modular Reactors (EGSMR)

■ OECD/NEA joint projects

In 2025, Bel V participated in the following OECD/NEA projects:

- o Advanced Thermal-hydraulic Test Loop for Accident Simulation 4 (ATLAS-4)
- o Pool during Loss-of-Cooling Accident (POLCA)
- o International Standard Problem (ISP) 52, relating to the simulation of a DEC-A scenario experiment in the PKL test facility involving multiple steam generator tube ruptures in all steam generators of the facility
- o International Standard Problem (ISP) 53, relating to the simulation of ASNR reflooding experiments
- o Studsvik Cladding Integrity Project V (SCIP-V)
- o Fire risk Assessment through Innovative Research (FAIR), relating to cable fire propagation in multi-source and multi-room scenarios
- o Fire Incidents Records Exchange (FIRE)
- o Experiments on Mitigation measures and source term issues to support analysis and further Improvement of Severe accident management measures (THEMIS)

■ European Commission projects

In 2025, Bel V participated in the following European Commission Horizon 2020 (H2020) projects:

- o EURAD and EURAD-2:
 - Uncertainty Management Multi-Actor Network (UMAN), for which Bel V acts as project lead
 - Assessment of Chemical Evolution of Intermediate Level Waste (ILW) and High-Level Waste (HLW) Disposal Cells (ACED)
- o Towards Harmonisation in Licensing of Future Nuclear Power Plant Technologies in Europe (HARMONISE)
- o HARmonized Practices, Regulations and Standards (HARPERS)
- o Artificial intelligence for the Simulation of Severe AccidentS (ASSAS)
- o Ensuring Assessment of Safety Innovations for Small Modular Reactors (EASI-SMR)

Bel V also continued to contribute to the Advisory Board, End-User Group or Support Group of the following H2020 projects co-funded by the European Commission:

- o Methods and Tools Innovation for Seismic safety assessment (METIS)
- o Safety Analysis of SMRs with PAssive Mitigation strategies – Severe Accident (SASPAM-SA)
- o AMHYCO, addressing hydrogen combustion, safety and recombination from the micro-scale level to the plant containment level
- o Towards Improved Assessment of Safety Performance for Long-Term Operation of Nuclear Civil Engineering Structures (ACES)
- o Ensuring Assessment of Safety Innovations for Small Modular Reactors (EASI-SMR)



4.5 Training

Bel V has adopted a structured training approach based on the Systematic Approach to Training (SAT) developed by the International Atomic Energy Agency (IAEA). Training programmes are designed for all staff members, particularly new recruits, on the basis of job descriptions and the competencies required for their roles. To support this approach, Bel V has implemented the IAEA SARCoN model to assess the competence levels of new staff members. This enables a more accurate competency needs analysis and allows training programmes to be tailored accordingly. In this area, Bel V plays a leading role and regularly supports other regulatory bodies through IAEA-coordinated initiatives.

Training is delivered using a variety of methods, including self-study, internal training sessions, external courses and on-the-job training, depending on the availability of training materials and the adequacy of external courses.

A key element of initial training of new staff is the internal training programme delivered by the Technical Training Manager, supported by experienced subject matter experts, primarily from Bel V. This programme consists of 35 training modules. 7 sessions took place in 2022, 10 in 2023, 10 in 2024 and 8 in 2025:

- o Q2-INST-1 – Class I installations: nuclear power plants
- o Q2-INST-2 – Class I installations other than nuclear power plants
- o Q1-REG-4 – Quality management system
- o Q2-SPE-4 – I&C and electric systems
- o Q2-RP-1 – Basics of radiation protection (Art. 25 of the RGPRI-ARBIS)
- o Q1-REG-2 – International legal and regulatory framework: WENRA reference levels
- o Q3-RB-6 – Security and safety
- o Q2-SPE-5 – Safety and auxiliary systems

In addition, Bel V organises Internal Technical Sessions aimed at sharing R&D results with the Technical Responsibility Centres. Two such sessions were held in 2025.

Non-technical training, such as language courses, IT skills, soft skills and leadership development, is offered on an as-needed basis.

Bel V staff also participated in a wide range of specialised and refresher training activities, as well as in working groups, seminars and international conferences.

In total, approximatively 60 training activities took place in 2025. On average, each member of the technical staff dedicated around 76.5 hours to training during the year.





5 FINANCIAL REPORT

Balance sheet as at 31 December 2025 *(amounts in € 1,000)*

	2025		2024	
ASSETS		22,004		19,821
FIXED ASSETS		3,815		3,848
II. Intangible fixed assets		10		12
III. Tangible fixed assets		3,805		3,836
A. Land and buildings	3,171		3,332	
B. Plant, machinery and equipment	336		373	
C. Furniture and vehicles	285		130	
F. Assets under construction and advances	13		0	
IV. Financial fixed assets		0.5		0.5
CURRENT ASSETS		18,189		15,973
VII. Amounts receivable within one year		3,773		3,387
A. Trade receivables	3,661		3,333	
B. Other amounts receivable	112		55	
IX. Cash at bank and in hand		14,275		12,386
X. Deferred charges and accrued income		141		199



Balance sheet as at 31 December 2025 *(amounts in € 1,000)*

	2025		2024	
LIABILITIES		22,004		19,821
EQUITY		19,316		16,962
I. Capital	4,732		4,732	
IV. Reserves	2,868		2,868	
V. Result carried forward	11,716		9,362	
DEBTS		2,688		2,858
VII. Amounts payable after more than one year				
IX. Amounts payable within one year		2,687		2,858
A. Current portion of amounts payable within one year				
B. Trade debts	260		372	
D. Advances received on contracts in progress	147		244	
E. Taxes	2,280		2,240	
F. Other amounts payable				
X. Deferred charges and accrued income		1		1



Profit and loss account as at 31 December 2025 *(amounts in € 1,000)*

	2025	2024
Turnover	17,528	16,016
Other operating income	332	409
Total operating income	17,860	16,425
Services and other goods	2,443	2,396
Wages and social security costs	12,673	12,337
Depreciation	324	294
Write-downs on trade receivables		
Other operating charges	158	161
Total operating charges	15,599	15,189
Operating result	2,261	1,237
Financial charges and income	134	188
Profit on ordinary activities	2,395	1,424
Income taxes	-42	-58
Profit for the financial year	2,353	1,367



Notes to the profit and loss account

Operating income

Income in 2025 was 8.73% higher than in 2024. This increase was due to additional services related to the lifetime extension of Doel 4 and Tihange 3, as well as to an increase in international activities. Given the future shutdown of several Belgian nuclear power plants, Bel V is diversifying its activities by acting as the technical support organisation (TSO) for foreign safety authorities, including ANVS in the Netherlands.

■ Turnover

The largest part of the turnover of Bel V (87.41%) was related to the regulatory inspections and safety assessments at Class I facilities, which are invoiced to the licensees on the basis of a fixed rate set by law. Among other things, 2025 was marked by the customary inspections in the context of the facility operations, (preparations for) the shutdown of five nuclear power plants and in particular the lifetime extension of two nuclear power plants.

A small portion of the turnover derives from contracts with the European Commission for support to nuclear safety authorities in emerging countries, as well as from regulatory inspections carried out at Class IIA facilities.

■ Other operating income

Other operating income consists of contributions by staff for the private use of company cars and for meal vouchers. In addition, part of the payroll tax is also recovered as part of R&D activities.

Operating charges

■ Services and other goods

Services and various goods accounted for approximately 16% of total operating charges. Some of the activities for non-regulatory clients are outsourced. This explains the not insignificant share of 'Services and other goods' in the total operating charges.

■ Wages and social security costs

Staff expenses represented 81.24% of the costs, including training expenses. Proportionally, this represents a status quo compared to 2024. The absolute value of staff costs in 2025 was slightly higher than in the previous financial year.

■ Operating result

Operating result for the financial year has been allocated to the result carried forward.