

BULGARIAN NUCLEAR REGULATORY AGENCY



**ANNUAL REPORT
2025**

This Annual Report provides the interested parties with information on the state of nuclear safety and radiation protection at the nuclear facilities and sites with sources of ionizing radiation in the Republic of Bulgaria in 2025.

Over the past year, the Bulgarian Nuclear Regulatory Agency consistently carried out its primary mission – to ensure state regulation of the safe use of nuclear energy and ionizing radiation, as well as the safe management of radioactive waste and spent nuclear fuel. Ensuring nuclear safety and radiation protection remained a top priority amongst the Agency's activities and was upheld through independent, competent, and transparent regulatory oversight.

In early 2025, the BNRA received the final report from the International Atomic Energy Agency's peer review of the Bulgaria's regulatory activities in the nuclear sector, the IRRS mission conducted in late 2024. The conclusions in the report represent a positive feedback about our country and confirm that Bulgaria has a comprehensive and well-established regulatory infrastructure for nuclear and radiation safety, efficiently incorporating the IAEA safety standards. This positive feedback is an important recognition of the professionalism of the BNRA's experts and robustness of the national regulatory framework.

In 2025, the Agency carried out significant licensing and permitting activities related to both nuclear facilities and the management of radioactive waste and spent nuclear fuel. Among the most significant results were the issue of an operating licence for the plasma melting facility, renewal of the operating licence for a radioactive waste management facility of SD RAW Kozloduy and completion of the activities related to the issue of a decommissioning licence for the Novi Han Radioactive Waste Repository. At the end of the year, the results of the Periodic Safety Review of the Dry Spent Nuclear Fuel Storage Facility were also approved.

Of particular importance for the development of the Bulgarian nuclear energy is the permit issued in 2025 to Kozloduy NPP – New Build for siting a new nuclear unit, Kozloduy NPP Unit 8. This permit marks the beginning of the licensing process for the new nuclear unit requiring considerable preparation, expertise, and consistency from the regulator in the upcoming stages.

The BNRA continued to maintain an effective emergency preparedness and response system in the event of a nuclear or radiological emergency. Throughout the year, joint exercises of the Agency's and Kozloduy NPP emergency response teams were conducted. BNRA staff also participated in the International Atomic Energy Agency's full-scale international exercise ConvEx-3 held in Romania. These activities play a crucial role in the institutions' constant readiness to respond in a coordinated and efficient manner to emergency situations.

An important international highlight in 2025 was the successful presentation of the Bulgaria's National Report at the Eighth Review Meeting of the Contracting Parties to the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management. The Report was accepted without recommendations, confirming that our country is fulfilling its obligations and meeting internationally accepted standards in this area.

Ensuring the necessary expert and administrative capacity remained among the BNRA's key tasks in 2025. Amid a shortage of personnel in the nuclear sector, the Agency made targeted efforts to attract and develop young specialists. The first Three-Year Plan for the Implementation of the National Strategy for Human Resources Development in the Nuclear Field was successfully completed, and new employees were recruited through the paid summer internship program at the BNRA administration. This policy is essential both for the sustainable performance of current regulatory functions and for preparing the Agency for future challenges, including the licensing of innovative technologies and new nuclear units.



I can confidently state that in 2025, the operation of nuclear facilities and activities involving sources of ionizing radiation in the Republic of Bulgaria were carried out in compliance with regulatory requirements, the terms of issued licences and permits, and with commitment to the principle of 'safety first'. All the achievements are attributable to the professionalism, responsibility, and consistent work of the Bulgarian Nuclear Regulatory Agency team.

Mr. Tsanko Bachiyski
Chairman of BNRA



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NUCLEAR FACILITIES

14 nuclear facilities under regulatory control

2 power units in operation

2 new nuclear units in licensing procedures

1,285 tonnes of material released from regulatory control

I. NUCLEAR FACILITIES

KOZLODUY NPP POWER UNITS

1. Unit Operation - Compliance with Licence Requirements. Implementation of Integrated Programme Measures

In 2025, Units 5 and 6 of Kozloduy NPP were operated within their designated design modes in the design and in compliance with the operating licences issued by the Bulgarian Nuclear Regulatory Agency (BNRA). After their planned annual outages, the two units entered the 32nd and 31st fuel cycles, respectively.

The regulatory oversight carried out during the period encompasses activities pertaining to modifications in safety-related structures, systems and components (SSCs), amendments to the documents used as a basis for the issued operating licences, performed inspections and verifications, fulfilment of the conditions of the issued licences and permits, and daily operational oversight of the facilities at the site of Kozloduy NPP. The main objective of regulatory oversight is to maintain the state of the nuclear safety and radiation protection of the units in compliance with the requirements of the regulations, the International Atomic Energy Agency (IAEA) standards, as well as with internationally recognised good practices.

With respect to maintaining and enhancing the safety and stability of the units against deviations from normal operation evolving into accidents, a number of reviews and assessments of the documents submitted for modifications to safety-related SSCs were carried out at the BNRA during the period. As a result, the necessary authorisations have been issued by the BNRA to implement the relevant modifications. The effectiveness of the implemented design modifications is confirmed by the steady trend in the number of events which occurred at the units.



Photo Kozloduy NPP

The implementation of the integrated programme measures aimed at improving the level of safety at Units 5 and 6 continued throughout the year. They arise from the performed periodic safety reviews and units' lifetime extension projects. As of the end of the year, 59 out of 66 measures for Unit 5 and 37 out of 48 measures for Unit 6 have been implemented.

In 2025, preparations began for the performance of the Periodic Safety Review (PSR) of Kozloduy NPP Unit 5. In this regard, the BNRA carried out a review and agreed the submitted methodological documents

for the performance of the PSR, including those for the assessment of the safety factors.

As a result of the overall regulatory oversight, it was established that over the period the units were operated in compliance with the requirements of the licences issued and the status of nuclear safety and radiation protection is maintained at the required level.

Compliance with Licence Requirements

The BNRA carries out a review and assessment of the documents submitted to certify the fulfilment of the terms and conditions of the issued licences and permits, and the recommendations and instructions by the BNRA inspectors. The reviews and assessments performed in 2025 were mainly related to:

- periodic updates on the status of nuclear safety and radiation protection, indicators for safe operation, radioactive discharges, etc.
- reporting on the activities related to the preparation and implementation of the planned annual outages;
- reporting on the implementation of the integrated programmes aimed to improve the level of safety at Units 5 and 6.

The results of the performed reviews and assessments reaffirm that Unit 5 and Unit 6 are operated in line with the licence terms and conditions and safety operation requirements.

1.1. Maintenance and Repair - Main Conclusions Resulting from the Oversight, Including the Inspections Conducted after the Units' Planned Annual Outages

The maintenance and repair of the Units 5 and 6 systems, structures and components (SSCs) in 2025 were performed in line with time-schedules developed in advance, and in accordance with established procedures and programmes. All scheduled activities were carried out in full scope, meeting the expected quality requirements. The main findings of the inspections of the preparedness of the units for start-up and operation after the planned annual outages can be summarised as follows:

- the planned repairs of the equipment and the non-destructive examination activities are performed in volume and quality, which ensure the operability of the systems and constructions;
- the design modifications resulting in enhancement of safety have been implemented in the required volume and quality;
- the performed functional tests of the systems important for safety certify their readiness for operation in accordance with the design characteristics;
- instructions, programmes, and procedures governing the preparation and execution of start-up operations and the operation of the power units are in place;
- the availability of the necessary qualified personnel for safe start-up and operation has been confirmed.

1.2. Surveillance and Testing Programmes - Performance Assessment

The equipment surveillance programme in place at Units 5 and 6 regulates the activities aimed to ensure the reliability of SSCs and the compliance of the equipment condition with the design criteria under long-term operation conditions. The implementation of the programme activities leads to the preventive detection of signs of SSCs degradation, and afterwards results in prevention of deviations in the equipment performance in terms of its intended characteristics.

The in-service non-destructive examination of SSCs was performed within the scope included in the work programmes and complies with the requirements of the regulations, manufacturers' recommendations, and the decisions taken by the technical councils. The planned technical surveillance of the facilities was performed in full.



The annual non-destructive examination performed at Unit 6 found no propagation of the registered defects in the peripheral guide tubes of the Upper Core Support Structure (Protective Tube Unit). Measures are in place to mitigate and limit potential consequences, should the defects progress.

As a result of the ad-hoc in-service inspection of Unit 6 third steam generator heat exchanger tubes carried out in June 2025, leaks were detected in two tubes of the steam generator tube bundle, which were subsequently plugged. No leaks from the steam generator tube bundles were identified by the non-destructive examination performed during the planned annual outage and the subsequent testing of the heat exchanger tubes. As at the end of the last year, the number of plugged tubes was 21. The facility's design margin allows for operation without restrictions with up to 220 heat exchanger tubes plugged out of a total of 11,000. The implementation of the prepared programme continues in order to fulfil the recommendations of the BNRA aimed at increasing the reliability of the steam generator. The programme contains a number of measures aimed at identifying the causes of the leaks and enhancing the efficiency of preventive control carried out.

A substantial part of the oversight over the implementation of the surveillance and testing programmes is within the scope of the BNRA daily operational oversight at the site of Kozloduy NPP performed by the BNRA inspectors permanently working at the site. The major part of this oversight includes daily walkdowns, conversations with the employees, assessment of the test results of SSCs' compliance with the adopted success criteria.

1.3. Water Chemistry

The primary objective of continuously maintaining the water chemistry of the coolant in the primary and secondary circuit is to limit structural material corrosion processes and reduce deposits on heat-exchanging surfaces.

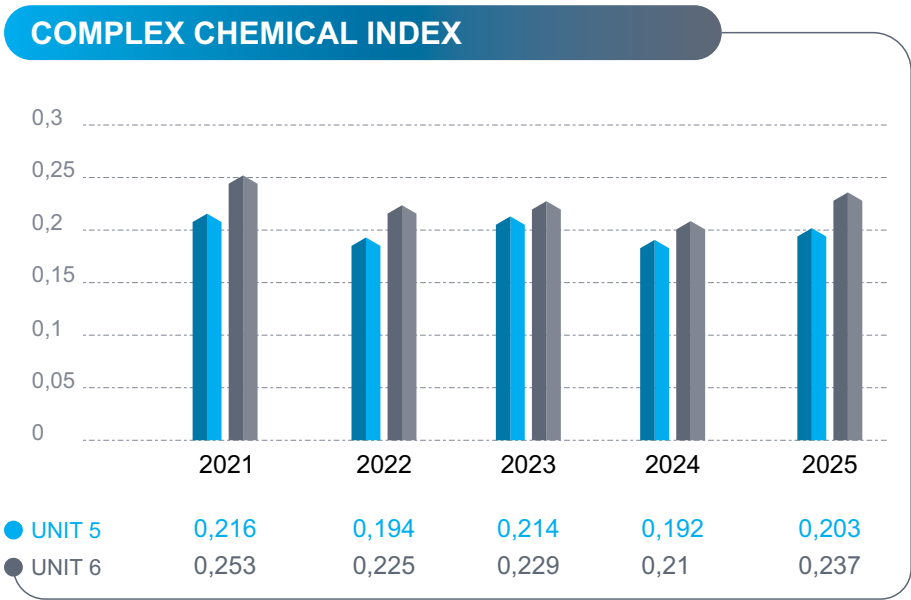
The equipment corrosion resistance and minimising the deposits on the heat-exchanging surfaces of the fuel and steam generators are achieved by maintaining optimal water chemistry levels. This prevents corrosion and corrosion-erosion damage to the equipment and piping in the primary and secondary circuits.

The water chemistry maintained is continuously monitored by measuring and tracking a number of



chemical parameters for which specific standards have been established. The quality of the water chemistry is monitored, analysed, and evaluated on two independent indicators: the chemical index (ChI) and the complex chemical index (CChI).

In 2025, the calculated value of the average annual ChI of the primary and secondary coolant for of Units 5 and 6 is optimal. The CChI is determined by comparing the measured values of the chemical indicators and their threshold values. The complex chemical index is determined monthly, quarterly and annually, with the average values for the units in the period in question being significantly below the maximum allowable value of 1.



1.4. Ageing Management

Kozloduy NPP applies a methodology to identify the SSCs falling into the scope of the ageing management process. The activities related to ageing management are performed in accordance with the regulatory requirements and applicable IAEA Safety Standards. For this purpose, documents have been developed to regulate the operation, maintenance, repair, testing, surveillance, and inspection of the individual SSCs to ensure their reliability. Component-oriented ageing management programmes are implemented for the relevant equipment, and the results are documented in reports regarding its condition.

The scope of regulatory oversight carried out during the year includes:

- reviews and assessments of documents conducted as part of the process of issuing permits to implement modifications;
- reviews and assessments of information submitted to the BNRA in fulfilment of the conditions of the licences for the operation of the units;
- on-site inspections carried out.

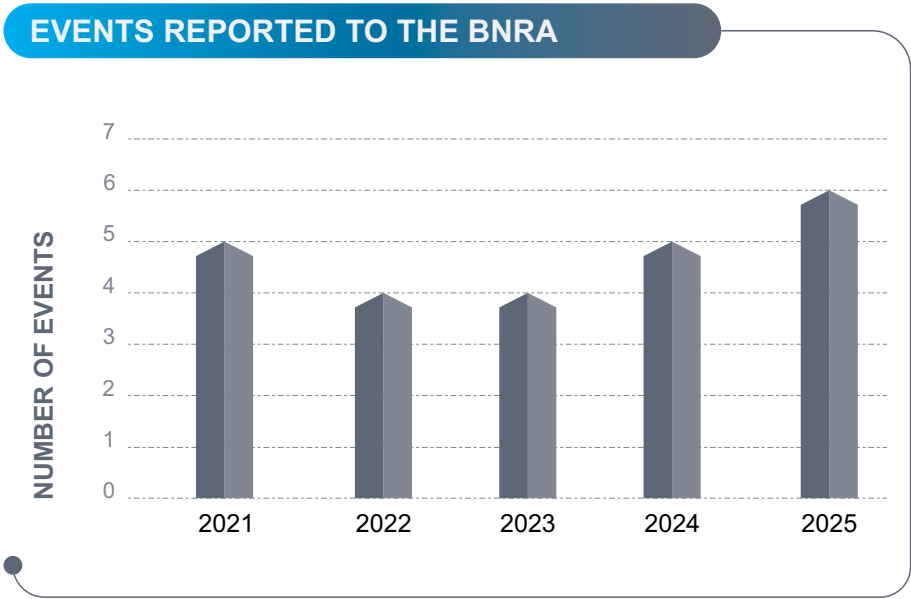
The results of the reviews, assessments and inspections indicate that the number of registered failures due to causes associated with equipment ageing has remained stable. This trend demonstrates the effectiveness of the programmes in place to manage the equipment ageing process. In this regard, it should be noted that in 2025, two heat exchanger tubes were plugged in the third steam generator of Unit 6, which is half the number of heat exchanger tubes plugged in the same steam generator in 2024.

1.5. Operational Events and Implementation of Corrective Measures

In 2025, six events were reported to the BNRA, including four at Unit 5 and two at Unit 6. All events were reported in a timely manner in accordance with the regulatory requirements. The events were mainly related to equipment failures and taking out of stand-by mode of safety system trains. The information about

the events can be found on the Agency’s website (www.bnra.bg). A list of the events is available in Appendix No.1 to the report.

The event cause analyses submitted to the BNRA by the Kozloduy NPP were reviewed by a working group established for that purpose. As a result of this review, the BNRA has finally determined that the level of the events according to the seven-level International Nuclear and Radiological Event Scale (INES) is “Below Scale/Level 0”. The events that occurred over the past year did not lead to any breaches of the limits and conditions for safe operation of the units. Radiation background at the plant remained unchanged. The permissible staff and public radiation exposure levels were not exceeded.



Over the year, 14 events were also analysed at Kozloduy NPP which do not fall within the regulatory criteria for reporting to the BNRA. Corrective actions were identified for the analysed events aimed at preventing their recurrence. The corrective actions are implemented within the specified time frames, as confirmed by the regulatory oversight conducted during on-site inspections.

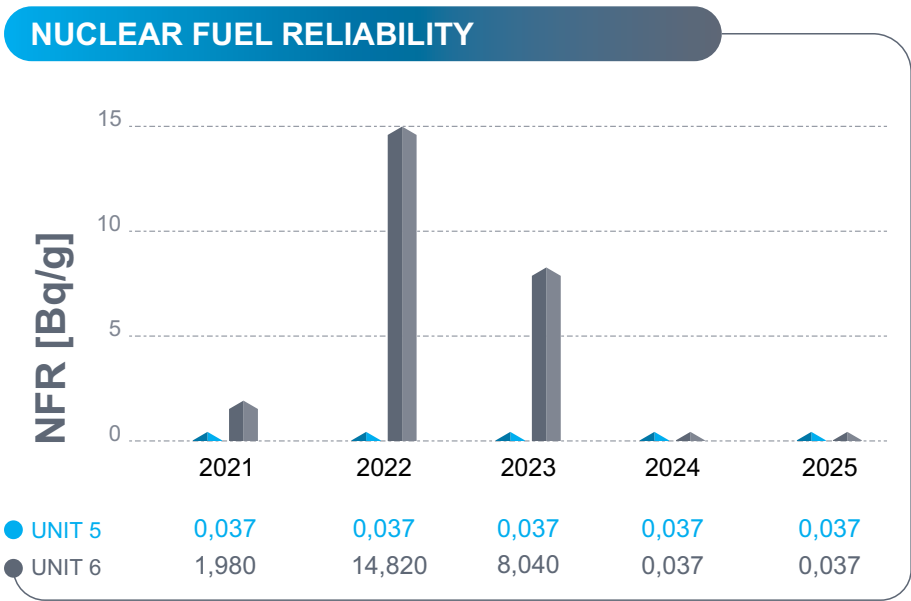
2. Operating Procedures Efficiency. Performance Indicators



Operating procedures efficiency is assessed using the self-assessment indicator system implemented at the Kozloduy NPP. The results from the systematic set out necessary information for the status of the management process through taking into account the extent of achieving objectives, principles and implemented tasks.

In compliance with the conditions of the licences for operation of the units, information on the current values of the indicators and identified corrective actions in the event of a negative trend is periodically submitted to the BNRA. As a result of the review and assessment conducted, it was identified that the trend regarding the values of the indicators related to the safety systems operability and the equipment maintenance efficiency remains steady within the permissible limits.

With regard to the condition of the physical barriers, it should be noted that during the 30th fuel cycle of Unit 6, a leak was detected in the fuel rod cladding in one fuel assembly, and the specified criteria regarding the subsequent storage of the fuel assembly were not reached. After the unit’s shutdown for the planned annual outage, the leaking fuel assembly was removed from the core and stored in the spent fuel pool. The identified leaks did not cause exceeding of the normal operation limits prescribed in the Technical Specifications for Safe Operation. During the period under review, no leaks were detected in the fuel rod claddings at Unit 5.

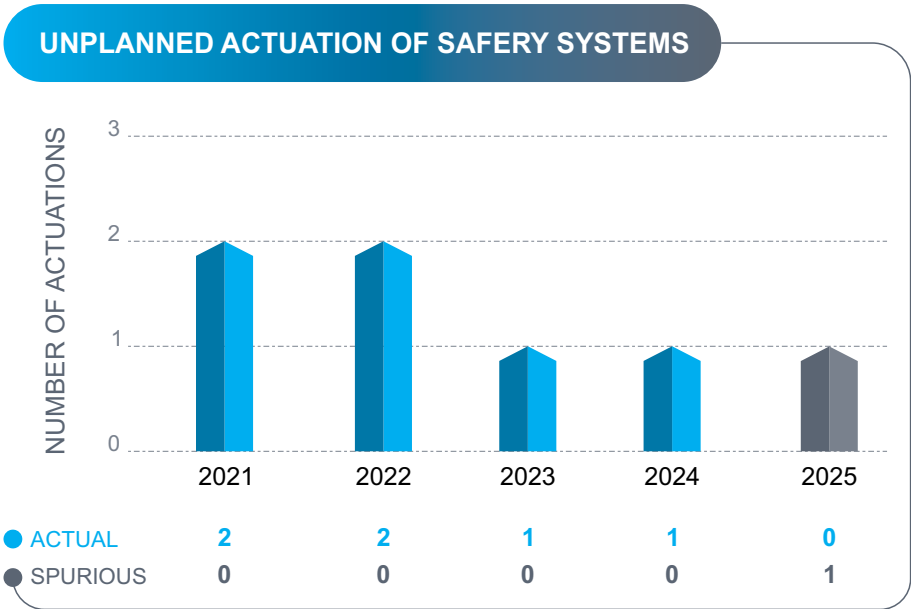


On 28 May 2025, a primary to secondary leak was detected in the third steam generator of Unit 6; on 17 July 2025, the leak reached a maximum rate of 1.788 l/h, with a permissible value of 4 l/h, in accordance with the Technical Specification for Safe Operation of the Unit, and the Unit was shut down as a precautionary measure to eliminate the leak. No leaks were registered during the remainder of the year.

3. Status of the Safety Systems

The results of the periodic tests conducted on the safety systems form the basis for assessing the status of these systems. The results show that the main parameters characterising the safety systems availability to perform their design functions are within the permissible limits and no deviations resulting in inoperability of these systems were found.

The indicator “Risk of impact on safety systems during operation” is determined by the number of unplanned actuations of the systems triggered by an actual parameter. When safety systems are actuated, it is taken into account whether the triggering signal is an actual change in a certain parameter, or it is a spurious signal. In 2025, one event related to unplanned actuation of the safety systems as a result of a spurious signal was registered at Unit 5. The indicator’s steady trend of low levels in the recent years demonstrates that the Units’ SSCs are kept in good condition and the necessary level of safety is maintained.



The regulatory oversight carried during the period did not find any deviations resulting in the systems’ inoperability. Safety systems were found to be well resilient in preventing deviations from normal operation from evolving into accidents.

4. Status of the Containment, Filtered Venting System, Hydrogen Combustion System - Examination, Surveillance and Maintenance Programmes

The implementation of activities related to planning, monitoring and assessment of the current status, determination of the remaining lifetime and limitation of the units’ containment structure material ageing is carried out in accordance with approved ageing monitoring and management programmes. The data on the operational condition of the containments, the results of the visual inspections carried out and the prestressed and deformed condition, as well as the implementation of the testing, surveillance and maintenance programmes, are periodically submitted to the BNRA. As a result, no deviations from the criteria and requirements set out in the approved programmes have been identified.

The operability of the containment filtered venting pressure reduction system is maintained through the performance of various activities, such as annual visual inspections, technical qualification, including the results of the welding joints’ non-destructive testing, and hydraulic tests to confirm the strength. The systems used to measure hydrogen content and the passive autocatalytic recombiners, as well as the system monitoring the concentration of hydrogen, oxygen, carbon oxide and steam, are maintained and operated in accordance with established procedures. As a result of the regulatory oversight carried out, no deviations from the requirements to the systems included in the procedures were identified.

5. Radiation Protection

The principles, standards, and requirements for radiation protection are set out in the Act on Safe Use of Nuclear Energy (ASUNE), the Regulation on Radiation Protection, and the Regulation for Ensuring the Safety of Nuclear Power Plants. Radiation protection in the operation of Kozloduy NPP Units 5 and 6 is ensured through the implementation of a set of technical and organisational measures to limit exposure under all possible operating conditions and to optimise radiation protection, which includes:

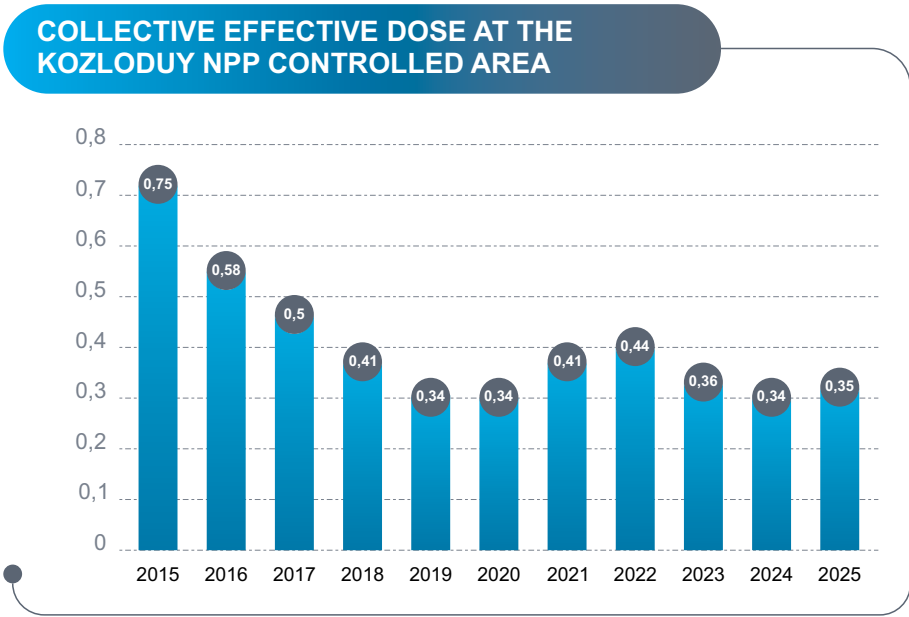
- physical barriers to prevent the uncontrolled spread of radioactive substances;
- zoning of areas and premises, classification of workplaces and access regimes, analysis and assessment of workplace conditions in the controlled and supervised areas in terms of radiation protection;
- radiation monitoring in the different areas and workplaces, individual dosimetry monitoring of occupationally exposed persons;

- Recruitment, and maintenance of qualifications of occupationally exposed persons, specialised training, briefings and initial and subsequent periodic medical surveillance;
- monitoring and evaluation of potential exposure of members of the public;
- maintenance and application of internal documents and rules for the purpose of radiation protection of occupationally exposed persons and members of the public.

Occupational Exposure

Kozloduy NPP carries out systematic individual dosimetric monitoring of occupationally exposed persons. Appropriate methods for monitoring and assessment of occupational exposure and measurement instrumentation of an approved type and subject to metrological control are used. The maximum annual individual effective dose in 2025 was 7.88 mSv which is below the regulatory limit of 20 mSv for occupationally exposed persons. The average annual individual effective dose for occupationally exposed persons is 0.15 mSv.

The collective dose was estimated at 0.35 man.Sv and is below 0.47 man.Sv which is the average collective dose for occupationally exposed persons at Kozloduy NPP over the past decade. This is the result of the effective application of the optimisation principle - keeping occupational exposure as low as reasonably achievable.



Collective effective dose at Kozloduy NPP, 2015-2025

Radioactive Discharges and Environmental Monitoring

Kozloduy NPP carries out radiation monitoring of discharges to the environment and controls the quantity and activity of gaseous and liquid discharges.

The dose constraint for the annual individual effective dose from internal and external exposure of the population, according to the Regulation on Ensuring the Safety of Nuclear Power Plants, is 0.15 mSv. The Kozloduy NPP Units 5 and 6 Technical Specifications for operation set the administrative levels of gaseous and liquid radioactive discharges to the environment, which correspond to an annual effective dose for a member of the public of 0.10 mSv per year (0.05 mSv per year each from gaseous and liquid radioactive discharges).

The results of the monitoring of the atmosphere discharges in 2025 compared with the permitted annual levels are presented in the table below:

	Gaseous discharges	Permitted annual activity levels based on regulations	Gaseous discharges compared to the permitted annual levels (%)
Radioactive noble gases (RNG)	0,68 Tbq	3500 Tbq	0,019
IODINE-131	0,012 Gbq	32 Gbq	0,03
Radioactive long-lived aerosols (LLA)	0,0069 Gbq	29 Gbq	0,024
CARBON-14	0,615 Tbq	27 Tbq	2,27
TRITIUM	0,604 Tbq	180 Tbq	0,33

The activity of gaseous discharges to the atmosphere in 2025 was negligible compared to the permitted annual limits. This fact is evidence that the design ventilation and air-cleaning systems are effective.

The activity of the liquid radioactive emissions released with the non-reusable and waste water into the Danube in 2025 was 0.068 GBq (without tritium) and the activity of the discharged tritium was 24.7 TBq. These values are much lower than the permitted annual levels specified in the Technical Specifications of Units 5 and 6.

The extent and scope of the monitoring of radioactive emissions to the environment is in accordance with the requirements of Art. 35 of the EURATOM Treaty and Recommendation 2000/473/Euratom, taking into account IAEA recommendations and international good practices in this field. The results of the monitoring are verified by the specialised oversight bodies: the National Centre for Radiobiology and Radiation Protection (NCRRP) of the Ministry of Health and the Executive Environment Agency (ExEA) of the Ministry of Environment and Water.

The Bulgarian Nuclear Regulatory Agency exercises independent oversight of Kozloduy NPP radioactive discharges. The radiochemical analyses of samples from the gaseous and liquid discharges are performed by the Institute for Nuclear Research and Nuclear Energy at the Bulgarian Academy of Sciences (INRNE - BAS). The results obtained confirm the results submitted by Kozloduy NPP specialised laboratories. In accordance with Art. 36 of the EURATOM Treaty, the BNRA submits annual reports to the European Commission on the radioactive discharges of the nuclear facilities at the Kozloduy NPP site to the environment.

The results of the environmental monitoring and the radioactive discharges monitoring during the operation of Units 5 and 6 are used to estimate doses from external and internal exposure of the public and of representative individuals. The annual individual effective dose to members of

the public due to radioactive discharges is conservatively estimated at 0.005 mSv for 2025. This value is much lower than the regulatory dose constraint of 0.15 mSv for members of the public.

6. Physical Protection

The physical protection system for each of the nuclear facilities located on the Kozloduy NPP site is an integral part of the site-wide physical protection system. It is designed, organised, and operates as an integrated and coordinated structure in which the individual components – detection, delay, and response – work in tandem to effectively prevent unauthorised access and attacks on nuclear facilities, nuclear material, and radioactive substances.



Photo Kozloduy NPP

The operation and effectiveness of the system are comprehensively verified and assessed for all facilities as part of the ongoing regulatory oversight. The regulatory oversight carried out in 2025, including the on-site inspections conducted, shows that the physical protection system established at Kozloduy NPP fulfils its main functions, meets the established requirements, and ensures an adequate response to the identified potential threats as defined within the scope of the design basis threat. The system is capable of ensuring the timely detection of breaches, the effective delay of intruders, and a timely response by security and response forces, thereby ensuring the protection of nuclear facilities, personnel, and the public.

SPENT FUEL STORAGE FACILITIES - WET SPENT FUEL STORAGE FACILITY, DRY SPENT FUEL STORAGE FACILITY

1. Operation of the Storage Facilities - Compliance with the License Requirements

In 2025, in compliance with the ASUNE requirements and the terms and conditions of the licence for the operation of the Dry Spent Fuel Storage Facility, the Periodic Safety Review of the facility was completed. The results of the review, as well as the planned safety enhancement measures resulting from these findings, were submitted to the BNRA. In this regard, the results of the PSR were approved by order of the Chairman of the BNRA, and the conditions and deadlines for conducting the next PSR of the facility were set.

In accordance with the terms and conditions of the operating licences for the two facilities, the BNRA periodically receives information on the safety status of the facilities. The regulatory oversight which includes both the review and assessment of the incoming information and the performance of on-site inspections shows that the Wet SFSF and Dry SFSF operate in compliance with the safety requirements of the ASUNE and its implementing by-laws.



Dry Spent Fuel Storage Facility, Photo Kozloduy NPP

As at the year-end, a total of 127 baskets containing 1,032 WWER-1000 reactor fuel assemblies and 1,184 WWER-440 reactor fuel assemblies were stored under water at the Wet SFSF. Twenty Constor 440/84 casks containing a total of 1680 WWER-440 reactor fuel assemblies were stored at the Dry SFSF. Over the year, a total of 84 spent fuel assemblies were transported from Unit 5 and Unit 6 for storage in the Wet SFSF.

2. Spent Nuclear Fuel Management. Implementation of the Strategy for Spent Nuclear Fuel and Radioactive Waste Management

The Republic of Bulgaria has been implementing an open nuclear fuel cycle in which once the nuclear fuel has depleted its lifetime in the reactor, it is then moved for initial and then interim storage on-site, after



Spent Fuel Storage Facility, Photo Kozloduy NPP

which it is transported abroad for reprocessing and long-term storage.

The Strategy for Spent Nuclear Fuel and Radioactive Waste Management envisages a steady decrease in the amount of SNF stored at the plant site through annual shipment of at least 50 tonnes of heavy metal in the form of SNF for technological storage and reprocessing. The draft of the updated Strategy for Spent Nuclear Fuel and Radioactive Waste Management takes into account the changes in geopolitical factors that have occurred in recent years, the transition of Unit 5 to a new type of nuclear fuel (RWFA) and analyses the possibilities for expanding the capacity for dry storage of SNF on-site.

In 2025, no SNF was shipped for technological storage and further reprocessing outside of the country.

3. Radiation Protection

In 2025, Caesium-137 was registered in the gaseous discharges through the Wet SFSF ventilation stack with a total activity of 0.0218 MBq which is 0.01 % of the reference level. The Wet SFSF and Dry SFSF radiation monitoring results show that the measured values of the monitored radiation parameters do not exceed the reference levels.

The individual annual effective dose in 2025 was below the authorised limit of 0.10 mSv for occupationally exposed persons in the Wet SFSF and Dry SFSF.

4. Physical Protection

The physical protection of the Wet SFSF and Dry SFSF is an integral part of the physical protection of Kozloduy NPP. Regulatory oversight, including on-site facility inspections, is carried out as part of the oversight of the overall system for physical protection of the Kozloduy Nuclear Power Plant.

STATE ENTERPRISE RADIOACTIVE WASTE

1. Safety in Managing Radioactive Waste from Kozloduy NPP

The radioactive waste generated at the nuclear power plant is managed by Kozloduy NPP until it is transferred to the SE RAW for subsequent management.

The activities with RAW are performed in accordance with the requirements of the Regulation on Safe Radioactive Waste Management and in compliance with a Comprehensive Programme maintained as per Art. 12 of the Regulation. The program provides a comprehensive justification for both the system and the specific planned activities and timelines for radioactive waste management – from the generation of each radioactive waste stream through to its transfer to the SE RAW or regulatory clearance. Established procedures are applied for regulatory clearance of materials.

As at 31 December 2025, 22.3 m3 solid and 1,593 m3 liquid RAW, 140 m3 spent ion exchange resins and 55 m3 sediments were stored at the Kozloduy NPP site.

In 2025, the following amounts of RAW were generated:

- Metal RAW – 23 t;
- Non-metal solid RAW – 676.4 m3;
- Liquid RAW – 344 m3.

All RAW generated during the year was gradually transferred to SE RAW for subsequent management.

The solid and liquid RAW storage facilities at Kozloduy NPP site have sufficient capacity to ensure the normal operation of Units 5 and 6.

Radioactive materials intended for subsequent regulatory clearance are stored under safe conditions and marked appropriately. Established procedures are applied for their regulatory clearance. In 2025, metal components with a total mass of 12.3 t from Kozloduy NPP were granted regulatory clearance by an order of the BNRA Chairman.

2. Fulfilment of the licence conditions

SE RAW performs radioactive waste management in compliance with the conditions of the licences and permits issued for activities under the ASUNE. Structures, systems and components important to safety in the management of RAW from nuclear facilities and nuclear applications are maintained in operable condition.

Personnel recruitment at SE RAW is conducted professionally and is based on the requirements set forth in the job descriptions, as well as on the current personnel recruitment and qualification system. Competent and qualified staff is provided.

The final volume of conditioned RAW for subsequent disposal is reduced to the lowest reasonably achievable level. A programme has been developed prescribing specific technical and organisational measures for safety analyses and assessments, prevention of incidents and accidents, and enhancement of safety in the management of RAW at the Kozloduy NPP site.

No deviations from the dose constraints for occupationally exposed persons at the SE RAW, including deviations from the reference levels defining the work environment, have been registered at the SE RAW.

➤ *Specialised Division Decommissioning Units 1–4 (SD D)*

Specialised Division Decommissioning Units 1–4 (SD D) performs all the activities (dismantling, decontamination, management of materials and RAW) related to the decommissioning of the shutdown Units 1–4 of Kozloduy NPP.

Dismantling activities

In 2025, equipment with a total mass of 2,525 tonnes, including ten steam generators from Kozloduy NPP Units 1-4, was dismantled. Two of the dismantled steam generators were transported to the turbine hall and placed on a purpose-built site for the storage of decontaminated bulky equipment. 650 tonnes of radioactive materials in 50 ISO containers are stored at another site in the turbine hall.

Decontamination activities in the Controlled Area



Size reduction of an upper block cap by means of oxy-fuel cutting, Photo SE RAW

In 2025, preliminary decontamination of 323 t of dismantled equipment was carried out in the Controlled Area in order to meet the criteria for its transfer to the Size Reduction and Decontamination Workshop.

Size Reduction and Decontamination Workshop

In 2025, the Size Reduction and Decontamination Workshop treated radioactive materials weighing 759 t, 690 t of which were decontaminated to the levels for regulatory clearance. The amount of the secondary RAW is acceptable: 18 t of solid RAW and 69 m³ of liquid RAW.

Management of materials and waste from the decommissioning of Kozloduy NPP Units 1-4

In 2025, the BNRA Chairman issued 32 orders for regulatory clearance of materials with total weight of 1,285 t.

➤ ***Specialised Division Radioactive Waste – Kozloduy (SD RAW Kozloduy)***

The SD RAW Kozloduy processes and conditions solid and liquid low- and intermediate-level radioactive waste generated during the operation of Kozloduy NPP Units 5 and 6 and from Kozloduy NPP Units 1-4 decommissioning activities.



Control room in Specialised Division RAW, Photo SE RAW

The conduct of operations of the facility is carried out in accordance with the requirements of the Technical Specifications for safe operation.

In 2025, 983 m³ of solid non-metal RAW, 188 t of metal RAW, and 500 m³ of liquid RAW were processed and conditioned, resulting in a total of 104 packages of conditioned RAW (Reinforced concrete container 1 – 45 pcs, Reinforced concrete container 2 – 2 pcs, and Reinforced concrete container 3 – 57 pcs). All packages are subject to interim storage and meet the requirements for subsequent disposal at the National Radioactive Waste Repository.

➤ ***Specialised Division Permanent Repository for Radioactive Waste – Novi Han (SD PRRAW - Novi Han)***

Specialised Division Permanent Repository for Radioactive Waste – Novi Han carries out activities on management of RAW generated from the use of sources of ionising radiation for business, medical, veterinary, or scientific purposes, or for regulatory functions in the Republic of Bulgaria:

- Receipt of radioactive waste, including preparation for transport, compliance checks, receiving inspection, and characterisation;
- Pre-treatment of solid radioactive waste, including collection, segregation, decontamination;
- Treatment and conditioning of solid RAW;
- Storage of untreated and treated radioactive waste, including low-level radioactive waste;
- Storage of disused sealed sources of ionising radiation;
- Receipt, treatment, and storage of radioactive substances whereof the owner is unknown (as per Art. 73 of the ASUNE).



Removal of sources from ionization fire alarm detectors in the Reception and Preparation Laboratory Complex in Specialised Division Permanent Repository for Radioactive Waste – Novi Han, Photo SE RAW

Radioactive sources declared as RAW are accepted in accordance with the Regulation on the Conditions and Procedure for Delivery of Radioactive Waste to the State Enterprise Radioactive Waste. In 2025, SD PRRAW - Novi Han accepted for storage and subsequent management 1,674 RAW packages containing the total of 2,407 radioactive sources.

The “hot cell” at the SD PRRAW - Novi Han site is used for receiving inspection of disused sealed radioactive sources with a maximum activity of 500 TBq, declared as RAW.

3. Plasma Melting Facility

The plasma melting facility (PMF) is designed for high-temperature treatment of short-lived low- and intermediate level solid radioactive waste. In 2025, the implementation of the planned preliminary tests was completed. 566 m3 of RAW were treated, bringing the volume of the treated RAW to 5.9 m3 solid non-compactible RAW packaged in 37 cylindrical moulds.

4. Radiation Protection

The radiation protection in the Kozloduy NPP Units 1-4 decommissioning and the operation of the RAW management facilities is ensured in accordance with the principles, standards, and requirements for radiation protection as per the Regulation on Radiation Protection and Regulation No. 32 on the conditions and procedure for performing individual dosimetry control of persons working with sources of ionising radiation.

Occupational Exposure

The SE RAW performs systematic individual dosimetry monitoring of occupationally exposed persons in the respective administrative units. Appropriate methods and measurement instrumentation are used for the occupational exposure assessment and monitoring. The instrumentation is of an approved type and subject to metrological control.

In 2025, for the performance of decommissioning activities of Kozloduy NPP Units 1-4, the maximum annual individual effective dose was 5.63 mSv, which is lower than the established dose constraints of 8 mSv for occupationally exposed persons. The average annual individual effective dose for occupationally exposed persons is 0.21 mSv. The collective dose to occupationally exposed persons at the SD Decommissioning Units 1–4 for the past year is 127.72 man.mSv.

A maximum annual individual effective dose of 0.89 mSv was registered in 2025 for the RAW management activities at the SD RAW – Kozloduy. The average annual individual effective dose for the relevant occupationally exposed persons is 0.29 mSv. The collective dose for SD RAW - Kozloduy is 10.49 man.mSv.

The maximum annual individual effective dose recorded in 2025 during the performance of radioactive waste management activities at the SD PRRAW - Novi Han is 0.37 mSv; during the first six months of the year, individual dosimetry monitoring was conducted on 63 occupationally exposed persons, and during the second six months, on 59. The average annual individual effective dose for occupationally exposed persons at the SD PRRAW - Novi Han is 0.03 mSv, and the collective dose is 1.69 man.mSv.

The limits of the annual effective dose and the dose constraints established pursuant to Art. 5, para. 2 of the Regulation on Radiation Protection for each occupationally exposed person are complied with.

Radioactive Discharges and Environmental Monitoring

During the decommissioning of Kozloduy NPP Units 1–4 and the operation of the RAW management facilities, radioactive discharges to the environment are monitored.

The results of the radiation monitoring of the gaseous discharges to the atmosphere showed that in 2025 the annual individual effective dose for members of the public resulting from the decommissioning activities at Units 1-4 was much lower than 10 μ Sv, which was below the negligible radiation risk level. The total activity of the long-lived aerosols discharged in 2025 was over 100 times lower than the investigation level of 6 GBq.

In 2025, the total activity of non-reusable water discharges registered via gamma-spectrometric measurements was 0.024 GBq, which was over 1,000 times lower than the investigation level.

5. Physical Protection.

The regulatory oversight conducted, including on-site inspections, indicates that the physical protection system at the SD Decommissioning Units 1-4 of SE RAW is functioning effectively, fulfilling its main functions, and complying with existing requirements. The results of the inspections confirm that the system provides an adequate level of security against the identified design threat and ensures the protection of facilities and personnel.

NEW NUCLEAR FACILITIES PROJECTS

1. Unit Seven of Kozloduy NPP - Licensing Procedure Stage

The licensing procedure for the construction of Unit 7 of Kozloduy NPP was launched after the BNRA granted a permit to Kozloduy NPP - New Build in 2013 for determining the location of a nuclear facility (site selection). In the period 2013 – 2015, the necessary surveys of potential sites were carried out, as a result of which Site 2 was identified as the most suitable for the construction of a new nuclear power plant.

In 2020, the selected site was approved by an order of the Chairman of the Bulgarian Nuclear Regulatory Agency, which includes a requirement to periodically reassess the characteristics at least once every ten years, applying up-to-date methodologies and data to determine the parameters of external impacts of natural and technogenic origin and their effects on safety.



3D Visualization of Units 7 and 8, Kozloduy NPP – New Build

In 2025, an application was submitted to the Nuclear Regulatory Agency for the issuance of a design permit, accompanied by the required documents to demonstrate the scope of the design activities and to specify the safety standards to be applied in the design of the nuclear facility. The review and assessment of the submitted documents are conducted by the BNRA in accordance with the approved Programme for the Preparation for Issuance of a Nuclear Facility Design Permit within the meaning of Art. 15, para. 4, item 2 of the ASUNE, with the licensee being Kozloduy NPP – New Build EAD.

2. Unit Eight of Kozloduy NPP - Licensing Procedure Stage

In October 2023, the Council of Ministers adopted a decision granting consent in principle under Art. 45, para. 1 of the ASUNE for the construction of Unit 8 of Kozloduy NPP.

In 2025, an application was submitted to the BNRA for the issuance of a site selection permit for a nuclear installation. Following a review and assessment of the submitted documents for compliance with regulatory requirements, the BNRA issued a site selection permit for Unit 8.

At the end of the year, the BNRA received an application for the issuance of an order for the approval of the selected site. A Programme for the preparation of an order pursuant to Art. 33, para.4 of the ASUNE for the approval of a nuclear installation site selected by Kozloduy NPP – New Build EAD was prepared for review and assessment of the accompanying documents.

3. National Repository for Low- and Intermediate-Level Radioactive Waste

The Specialised Division National Radioactive Waste Repository of the SE RAW is accountable for the fulfilment of the conditions set in the construction permit of the facility for the disposal of low- and intermediate-level short-lived RAW.

The Repository is a near-surface multi-barrier engineering facility designed for the disposal of conditioned radioactive waste generated during the operation of nuclear facilities in the country, as well as from the use of sources of ionising radiation for business, medical, scientific, and monitoring purposes.



National Disposal Facility, Photo SE RAW

In 2025, the construction permit for the first stage of the National Repository for the Disposal of Conditioned Radioactive Waste Category 2a at the “Radiana” site was renewed, with its validity extended until May 2026. The scope of the permit includes the construction of structures, systems, and components for primary, auxiliary, and service purposes in accordance with the parts of the facility’s technical design approved by order of the Chairman of the BNRA. These elements are directly necessary for the commissioning and subsequent operation of the first platform of the repository.

RESEARCH REACTOR

The facility was shut down in 1989 and its site has been cleared of nuclear fuel. The performed activities are reduced to maintaining the systems related to radiation protection and site monitoring.

SUMMARY

The regulatory oversight carried out in the past year provides grounds to draw the following general conclusions regarding the state of nuclear safety and radiation protection in the nuclear facilities on the territory of the country:

- The nuclear facilities operation is in compliance with the requirements of the ASUNE and its implementing regulations, as well as in accordance with the terms and conditions of the licences and permits issued.
- The status of the nuclear facilities is in complete accordance with the requirements of the defence-in-depth concept. The physical barriers and levels of protection meet the existing requirements.
- Recommendations and prescriptions made as a result of ongoing and subsequent regulatory oversight are addressed by licence and permit holders within the specified time frames.
- The licensees maintain a training and qualification system that ensures sufficient staff with the necessary qualifications and experience for the safe operation of the facilities.
- Radiation protection during the operation of Units 5 and 6 and the SNF storage facilities and during the decommissioning of Units 1 to 4 of Kozloduy NPP and the management of RAW in the country are ensured in accordance with the regulatory requirements and the conditions of the licences and permits issued.
- Occupational exposure is kept as low as reasonably achievable in accordance with the principle of optimisation. The radiation characteristics of the working environment comply with radiation protection standards.
- The maximum annual individual effective dose recorded in 2025 was more than twice lower than the regulatory limit of 20 mSv/a for occupationally exposed persons.
- The results of environmental radiation monitoring confirm the effectiveness of protective barriers preventing the spread of radioactive substances during the operation of nuclear facilities in the country.
- The assessment of the exposure of members of the public due to radioactive emissions from nuclear installations shows that the annual individual effective dose is below 10 μ Sv which corresponds to the negligible radiation risk level in planned exposure situations.

The infographic features a series of concentric, semi-circular bands in various shades of green and blue, creating a dynamic, wave-like background. In the center, three data callouts are arranged in a vertical stack, each with a colored circular end that points towards the center. The top callout is green, the middle one is teal, and the bottom one is dark blue. The text is in a clean, sans-serif font.

ACTIVITIES INVOLVING SOURCES OF IONISING RADIATION

1,341 valid licences for
activities involving sources
of ionizing radiation

505 valid permits for
activities involving sources
of ionizing radiation

6,403 sources of ionizing
radiation covered by
valid licences and permits

II. ACTIVITIES INVOLVING SOURCES OF IONISING RADIATION

According to the Safe Use of Nuclear Energy Act, all activities involving sources of ionising radiation (SIR) carried out for business, medical, veterinary, scientific purposes or monitoring functions are subject to regulation. The regulation of activities involving sources of ionising radiation is based on the concept of a graded approach, founded on an assessment of radiation risk, with a notification system and a licensing system (issuance of licences, permits, or registration certificates) applied in accordance with the ASUNE.

An activity involving sources of ionising radiation is performed after submitting a notification and receiving a registration certificate, a permit, or a licence for the relevant activity in the cases specified in the ASUNE. Activities involving sources of ionising radiation are not subject to regulation when:

- Radiation risk of the activity is negligibly low and potential for the occurrence of the event which can increase the radiation risk is negligible;
- The control of the activity is not justified and will not lead to additional reduction of the individual dose.

Activities involving sources of ionising radiation are authorised only after it has been demonstrated that they will be conducted and managed in a safe manner, so that the risk to occupationally exposed persons, the public, and the environment is acceptable from the point of view of radiation protection. This includes ensuring appropriate organisational structure, technical and financial resources, and personnel with the necessary qualifications, certification, and competence.

Holders of a licence, permit or registration certificate, including notifiers, are fully responsible for the safety when performing the relevant authorised activities involving sources of ionising radiation.

All issued individual administrative acts related to activities involving sources of ionising radiation and their amendment, renewal, termination or revocation are entered in the public registers under Art. 27 of the Safe Use of Nuclear Energy Act. Submitted notifications relating to activities under Art. 56, para. 2 of the Safe Use of Nuclear Energy Act are also entered in the public registers.



Halcyon (Varian) medical linear accelerator at the PULSE Hospital, Blagoevgrad

In the end of 2025, there were 1,341 active licences for activities involving sources of ionising radiation, distributed in areas as follows:

- for medical and veterinary purposes – 1,159;
- for business and scientific purposes – 102;
- for control functions – 36;
- for transportation of radioactive substances – 38;
- for working with SIR to provide services – 5;
- for production of SIR – 1.

In the end of 2025, there were 505 active permits for activities involving SIR, as follows:

- construction, installation and preliminary testing of a facility with SIR – 413;
- import and export of sources of ionising radiation – 46;
- temporary storage of radioactive substances – 41;
- decommissioning of facilities with radioactive substances – 3;
- modification of design structures, systems and components, related to the radiation protection at facilities with SIR – 2;

Medical radiological equipment for radiotherapy is used in the country - 44 charged particle accelerators, 7 devices for high-dose brachytherapy and one “gamma-knife”. The number of diagnostic and therapeutic X-ray machines listed in the relevant licences is 3,064 with 121 angiography machines and 392 CT machines. As at the end of 2025, there are four cyclotrons for the production of radiopharmaceuticals, two of which are installed in medical institutions and the production is for own needs (University Multiprofile Hospital for Active Treatment Sveta Marina in Varna, and University Multiprofile Hospital for Active Treatment Alexandrovska in Sofia). The other two cyclotrons are for industrial production of radiopharmaceuticals and are operated by the Bulgarian Radiopharmaceutical Company and Curium Bulgaria. Two more cyclotrons for own needs are currently being installed at two medical facilities (University Multiprofile Hospital for Active Treatment Sveti Georgi in Plovdiv, and a second cyclotron at the University Multiprofile Hospital for Active Treatment Sveta Marina in Varna).

For non-destructive testing, 74 gamma flaw detectors (104 in storage) and 81 X-ray flaw defectors (29 in storage) are used. Two gamma-ray irradiators are used for business and scientific purposes. Six gamma-ray irradiators are used for metrological purposes. Eleven charged particle accelerators are used for control functions.

A total of 6,403 sources of ionising radiation are covered by existing licences and permits.

Control of compliance with the regulatory requirements of authorised activities under the ASUNE, as well as control of compliance with the licences and permits issued, is carried out through documentary and/or on-site inspections.

The radiation protection infrastructure in the country for the operation of SIR facilities is in full compliance with internationally applied standards and criteria.

ADMINISTRATIVE CAPACITY

102 employees as
of the end of 2025

16 recruitment competitions
announced in 2025

7 newly appointed
civil servants

More than **90%** of BNRA
staff hold higher education
degrees

III. ADMINISTRATIVE CAPACITY

1. HUMAN RESOURCES

Ensuring and maintaining the necessary administrative and technical expertise in the nuclear field is a fundamental requirement established by the national legislation, applicable international conventions, and European Union legislation. The Agency’s activities are aimed at maintaining an efficient, stable, and competent administration capable of performing its assigned functions in accordance with regulatory requirements. Maintaining a high level of administrative capacity is a key factor in ensuring compliance with established rules and standards in the field of nuclear safety and radiation protection.

1.1. Human Resource Development

Nuclear safety requires highly qualified experts capable of competently monitoring, analysing, and evaluating activities related to the use of nuclear energy and sources of ionising radiation. Therefore, human resource management at the Nuclear Regulatory Agency is based on a systematic long-term approach.

A systematic approach to building administrative capacity is a key factor in the sustainability of the regulatory authority. This involves the consistent development of structures, mechanisms, and processes that ensure the availability of a sufficient number of qualified specialists in all areas of activity. Clear policies on training, succession planning, and competency assessment create the conditions for the effective performance of the regulatory body’s control, licensing, inspection, and analytical functions.

The Strategy for building professional capacity at the BNRA 2022–2032 provides the necessary framework for planning, recruitment, training, retention, and professional development of personnel. It identifies the key competencies required to perform regulatory functions, as well as potential risks associated with a shortage of expertise, staff turnover, or loss of institutional memory.



In 2025, the implementation of the Strategy’s objectives continued, with a focus on recruiting and developing young engineering professionals with appropriate training and increasing remunerations.

In 2025, sixteen competitions for vacancies were advertised. Seven civil servants were appointed. Thus, at the end of 2025, the number of employees was 102. More than 90% of all those working in the BNRA have a university degree. More than half of the Agency’s employees have a rank higher than the minimum required for the job position, with an average professional experience in specialised administration of more than 20 years.

Internship Programmes

In 2025, the BNRA continued to offer internship programmes for students from Bulgarian universities.

In the framework of the centralised campaign for student internships in the state administration, one student conducted internships in two of the administrative units of the specialised administration: Emergency Planning and Preparedness Division to the Nuclear Safety Department, and Radiation Protection Department. The internships lasted 2 weeks in total and took place from 30 June to 11 July 2025.



Three students from the Faculty of Geology and Exploration of the University of Mining and Geology St. Ivan Rilski, Sofia, the Faculty of Physics of Sofia University St. Kliment Ohridski, and the Faculty of Chemistry and Pharmacy of Sofia University St. Kliment Ohridski undertook paid internships in the Safety Assessments and Analyses, Radiation Protection and Nuclear Safety Departments between the 14th of July and the 13th of August 2025. In the course of the internship, the students gained a close-up look at the work of the Agency's inspectors and had the opportunity to gain practical experience. In the specialised Department where they were assigned, the young people were tasked to work on an internship case study which they presented and defended to BNRA colleagues at the end.

National Strategy for Human Resource Development in the Nuclear Sector 2022-2032

The Nuclear Regulatory Agency, as the coordinating institution, continued to carry out its functions related to the National Strategy for Human Resources Development in the Nuclear Sector 2022–2032. Working meetings were organised and conducted with experts from the Ministry of Energy, the Ministry of Education and Science, the Employment Agency, Sofia University St. Kliment Ohridski, Technical University - Sofia, INRNE-BAS, Kozloduy NPP and SE RAW, in order to discuss the implementation of activities included in the first 3-year plan for the implementation of the strategy. Efforts are being made to prioritise vocational education. A new list of professions in vocational education and a new framework for the State Educational Standards were developed.

The Strategic Vision for the Development of Dual Vocational Education and Training (DVET) in

Bulgaria-2030 was adopted, and a number of changes were made to the regulatory framework to improve it.

In collaboration with the Ministry of Education and Science and Kozloduy NPP, substantial support was provided for the organisation of national competitions and Olympiads in physics and vocational fields. The Autumn National Physics Competition and the National Competition Best Young Technician in Mechanical Engineering were held. In June, Bulgaria hosted the European Physics Olympiad, which included participants from 48 countries.

A number of changes were also made in higher education. The funding coefficients for the academic fields of mathematics, physical science, information and computer sciences, and mechanical engineering have been increased.

School on Nuclear Regulation

For the second consecutive year, the BNRA, in partnership with the Centre of Nuclear Competences Kozloduy, organised the School on Nuclear Regulation. The event took place in Borovets from 30 September to 2 October and was attended by 24 students from Bulgarian universities, faculty members from Sofia University St. Kliment Ohridski, the Technical University of Sofia, and Plovdiv University Paisii Hilendarski, as well as experts from Kozloduy NPP, the State Enterprise Radioactive Waste, and Kozloduy NPP – New Build. In addition to BNRA staff, the lecturers included leading national and international experts with extensive experience in Bulgarian, European, and international institutions such as the International Atomic Energy Agency (IAEA), the U.S. Nuclear Regulatory Commission, and the regulatory authorities of Poland and the Czech Republic.



The topic was Licensing of Innovative Nuclear Projects. Over the course of three days, participants had the opportunity to familiarise themselves with the regulatory process, the national legislative framework, as well as global standards and regulatory regimes in other countries. Solving practical case studies in teams with experts from nuclear facility operators, university professors, and BNRA staff allowed the students to gain real-world knowledge and skills, as well as an in-depth understanding of nuclear regulatory processes.



1.2. Training and Qualification

Specialised training is provided to maintain and improve the qualifications of the staff of the BNRA. A systematic approach to training based on internationally recognised methodology is applied.

The training process includes three main areas:

➤ *Training by the Institute of Public Administration (IPA)*

In 2025, the staff of the Nuclear Regulatory Agency refreshed and enriched their knowledge by participating in courses organised by the IPA in the field of public policies, administrative services, digital competence and cyber security. In addition, with the assistance of IPA, the course Stress Management – Awareness, Recognition and Coping with Professional Burnout Syndrome was organised and conducted specifically for the BNRA.

➤ *Specialised Training*

In 2025, 10 lecture training courses were held in accordance with the approved annual plan for specialised training, 6 of which were conducted by external lecturers.

➤ **Training Provided by International Organisations and/or Regulatory Bodies in compliance with Bilateral Cooperation Agreements**

During the past year, BNRA employees participated in 15 training courses organised by: the International Atomic Energy Agency (12 courses with 13 employees participating), the U.S. Nuclear Regulatory Commission (2 courses with 7 employees participating), and Nuclear Energy Agency (NEA) of the Organisation for Economic Cooperation and Development (1 course with 1 employee participating).

1.3. Knowledge Management

Knowledge management is an integrated, systematic approach for identification, acquisition, transformation, development, dissemination, use, sharing, and retention of knowledge related to achieving the main objectives of the Agency, namely, a competent and efficient process of regulating the nuclear and radiation safety in the country.

In accordance with the BNRA Management's Knowledge Management Policy Statement adopted in 2024, in 2025, a Knowledge Management Procedure was implemented and put into effect at the BNRA,



with the aim of providing a detailed description of the approaches and activities for identifying, preserving, storing, and transferring knowledge within the regulatory body.

1.4. Knowledge Sharing Networks

Participation in global and national networks for exchange of experience and knowledge enables the BNRA employees to enhance their competences, learn from the experience of their colleagues, and exchange best practices and professional ideas. This often leads to specific proposals for improving various aspects of the BNRA's activities.

At the national level, BNRA employees traditionally participated in events organised by non-governmental organisations in the sector – BULATOM, the Bulgarian Nuclear Society, the Bulgarian Energy and Mining Forum, the Union of Physicists, etc., where they presented information on the Agency's activities and developments in the regulatory process.



During the annual conferences of BULATOM and the Bulgarian Nuclear Society, with the support and cooperation of the BNRA, special emphasis was placed on the sustainable development of human resources and training and career opportunities in the nuclear sector. The event agendas included special sessions focused on a young audience, during which attendees were also briefed on the results of the first three-year plan on the implementation of the National Strategy for Human Resources Development in the Nuclear Sector 2022–2032.

At the international level, representatives of the BNRA actively participated in the working groups of the IAEA, WENRA, ENSREG, and the NEA, with the aim of exchanging knowledge, experience, and best practices with colleagues from the global nuclear community.

At the organisational level, the following permanent topical expert groups were established and are operating within the BNRA: Nuclear Power Plants Events Analysis Group, Risk Committee, Integrated Management System Group, Communications Policy Implementation Group, and Knowledge Management Committee.

2. FINANCIAL RESOURCES

Annually, the budget of the BNRA is determined by the State Budget of the Republic of Bulgaria Act for the respective year.

2.1. Revenues

The revenues generated by the Nuclear Regulatory Agency come from fees charged for issuing licences and permits under the ASUNE in accordance with the Tariff of Fees Collected by the Nuclear Regulatory Agency under the Safe Use of Nuclear Energy Act.

The 2025 State Budget of the Republic of Bulgaria Act allocated BNRA's revenues at BGN 10,500,000.

For the period from 1 January 2025 to 31 December 2025, the BNRA budget received revenues from state fees amounting to BGN 14,865,751; revenues from interest, fines and sanctions amounting to BGN 28,811; other non-tax revenues amounting to BGN 23,480.

The over-execution of the revenue for 2025 from state fees is the result of fees collected for permits issued, which could not be foreseen, for a design modification in order to improve the safety of Kozloduy NPP, as well as fees for a permit issued to the Kozloduy NPP – New Build for the selection of a location for a nuclear facility (siting).

2.2. Expenditures

Under the State Budget of the Republic of Bulgaria Act for 2025, functional area Regulation of Nuclear Safety and Radiation Protection of the Republic of Bulgaria, budget programme Regulation and Oversight of Nuclear Safety and Radiation Protection of the Republic of Bulgaria, the BNRA expenditures were set to BGN 10,240,700, including personnel expenditure amounting to BGN 6,569,300 and capital expenditures amounting to BGN 162,400.

By Decree No. 207 of 9 October 2025 of the Council of Ministers, on the basis of Art. 109 para.5 of the Public Finance Act, internal offset changes were made to the budget of the Nuclear Regulatory Agency for 2025 by increasing the personnel expenditure at the expense of the current maintenance expenditure by BGN 220,000 for the increase of staff remuneration. The Minister of Finance was notified of this by letter No. 02-00-206 dated 15 October 2025.

By Order No. ПД-22-155 dated 19 August 2025 of the Chairman of the Agency pursuant to Art. 112, para. 2 of the Public Finance Act, the expenditure allocated to acquisition of fixed assets was increased by BGN 24,389 on account of a reduction of maintenance and other current expenditure which the Minister of Finance was notified of by letter No. 02-00-171 dated 19 August 2025. The changes made to the Agency's budget regarding the increase in expenditures for electronic government and the information and communication technologies used were coordinated in advance with the Minister of e-Government in accordance with the Rules for the Preliminary Coordination of Expenditures of Administrative Bodies in the Field of e-Government and the Information and Communication Technologies used.

Following the adjustments made to the budget of the BNRA as of 31 December 2025, according to the updated revised plan, the total amount of the expenditure was BGN 10,240,700, including personnel expenditure amounting to BGN 6,789,300 and capital expenditure amounting to BGN 186,789.

The reported expenditure for 2025 went to cover the Agency's current maintenance costs, remuneration of the staff, social and health insurance contributions, expert assistance used in the Regulation of Nuclear Safety and Radiation Protection of the Republic of Bulgaria functional area, membership fee of the Republic of Bulgaria paid to the International Atomic Energy Agency, acquisition of fixed tangible assets, etc. Expenditure totalled BGN 9,733,036.

3. PUBLIC RELATIONS AND ACCESS TO PUBLIC INFORMATION

In order to strengthen the public trust, the Nuclear Regulatory Agency implements a policy of openness and transparency and informs the public about the nuclear safety and radiation protection on a regular basis.

The main priority in 2025 still was ensuring nuclear safety and radiation protection in the country. In its implementation, the Agency followed as basic principles transparency, impartiality in its work and open dialogue with all interested parties. We worked for strengthening trust and establishing the BNRA's image as an independent regulatory body with effective mechanisms for reporting on its activities to the public.

In early 2025, a new communication plan for the BNRA was developed based on the results of a public opinion survey conducted the previous year. It includes measures to increase recognisability and transparency, a stronger presence on digital platforms, and partnerships with non-governmental organisations and the scientific community.

The BNRA is striving to stay abreast with modern trends in the field of public communications, applying the best international practices in the field. The communication policy is aimed at building public trust and a positive attitude toward the activities of the BNRA over the long term through open dialogue with all stakeholders, including the media, institutions, and citizens. The website of the Agency plays a major role in this process. In 2025, the website featured news, current information, regulatory documents, reports, and more. It covered important events related to the nuclear and radiation safety of activities and facilities, as well as the Agency's overall work.

The BNRA actively developed its communication with stakeholders through its social media profiles - a Facebook page and a profile on the professional social network LinkedIn - where important events related to nuclear and radiation safety, as well as the BNRA's activities, were covered.

During the year, we enhanced our public communication through collaboration with the on-line platform BG Science to promote the image of the Nuclear Regulatory Agency.



In implementation of the communication plan, in February 2025, the BNRA held its traditional annual press conference at which its Chairman presented the key highlights of the regulator's activities during the past year to journalists.

In March, the results and final report of the International Atomic Energy Agency (IAEA) mission to review Bulgaria's regulatory framework in the nuclear sector, the so-called IRRS (Integrated Regulatory Review Service) mission, were presented at a briefing with journalists.

In October, the traditional seminar for journalists was held, attended by 15 representatives of leading Bulgarian media (both national and regional). During the two-day seminar, the journalists were briefed on the regulator's activities and the BNRA's preparations for innovative projects - the AP 1000 and small modular reactors, and visited the "Radiana" site of the National Radioactive Waste Repository.



During the year, five requests for access to public information were registered with the Bulgarian Nuclear Regulatory Agency, all of which were granted the requested information within the statutory deadline. Four of the registered requests for access to public information were filed by natural persons, and one was filed by a legal entity.

BNRA ACTIVITIES

40 inspections at nuclear facilities.

24 inspections at sites with sources of ionizing radiation

245 new licences issued for activities involving sources of ionizing radiation

457 new permits issued for activities involving sources of ionizing radiation

More than **15,000** documents submitted by Bulgaria to the INIS Repository since the system was established

IV. BNRA ACTIVITIES

1. Regulatory Framework Development

In 2025, the following amendments to existing regulations were drafted and adopted by Decrees of the Council of Ministers:

- The amendments to the Regulation on Ensuring the Safety of Nuclear Power Plants stem from the requirements of the Act on Amendment and Supplement to the Safe Use of Nuclear Energy Act, promulgated in the State Gazette No. 27 of 29 March 2024, as well as the harmonisation of the regulatory framework with the standards of the International Atomic Energy Agency (IAEA) and the safety reference levels of the Western European Nuclear Regulators' Association (WENRA).
- The Regulation on the Procedure for Issuing Licences and Permits for the Safe Use of Nuclear Energy, with the amendment and supplement, ensures consistency between the legislative and regulatory framework in the field of the safe use of nuclear energy, as well as compliance with the provision of § 13 of the Act on the Implementation of the Provisions of the Safe Use of the Nuclear Energy Act.
- A completely new Tariff of Fees Collected by the Nuclear Regulatory Agency under the Safe Use of Nuclear Energy Act was developed. The change consists of an increase in the amount of the fees so that they reflect the significance and complexity of the activities carried out by the regulatory body, current economic conditions, and the need to sustainably maintain its expert capacity. The increase is justified and proportionate to the scope and complexity of the activities performed and is not intended to impose a disproportionate financial burden on users.
- Rules of Procedure of the Nuclear Regulatory Agency. By Decree of the Council of Ministers, the number of staff of the BNRA was increased by 20 positions. Subsequently, an amendment to the Rules of Procedure redistributed the staff positions among the various departments in order to ensure effective, independent, and timely regulatory oversight and licensing, in the context of the increased focus on the development of nuclear energy in Bulgaria, as well as the Agency's growing workload, while strictly adhering to international standards and national regulations.

In 2025, the review and update of regulatory guides continued. By orders of the Chairman of the BNRA, three guides were enacted and published:

- Guide for the Assessment of Radiation Exposure and Criteria for Operational Control upon the Importation into the Country of Raw Materials, Goods, and Other Materials with Elevated Levels of Natural Radionuclides;
- Guide for a realistic assessment of the radiation impact of gaseous and liquid emissions in the environment during the operation of nuclear facilities;
- Guide for radiation protection when working with open sources.

2. Inspections at Nuclear Facilities

In 2025, in accordance with the BNRA's inspection activities plan, a total of 40 inspections were conducted at the nuclear facilities. A list of the inspections is provided in Appendix No. 2.

Results of the major inspections conducted at Kozloduy NPP:

Preparedness of Units 5 and 6 for Start-Up and Operation after the Outages

In 2025, in compliance with the conditions of the licences for operation of Units 5 and 6, the units were inspected to determine their readiness for start-up and operation following annual refuelling outages. The scope of the inspections included maintenance activities carried out, design modifications, implementation of measures of the integrated safety improvement programmes of the units, non-destructive examination of equipment, monitoring of the implementation of technical surveillance programmes for high-risk facilities, as well as the implementation of corrective actions from event analysis reports. The housekeeping and the condition of the premises and equipment, as well as the readiness of the systems for start-up and operation after the preventive and corrective maintenance were inspected. The inspections did

not reveal any non-compliance with requirements or deviations that would prevent the safe start-up and operation of the units. Recommendations were made aimed at the optimisation of the processes of preparation and registration of reporting documents for the implemented activities and the improvement of the oversight carried out for compliance with the internal documents' requirements.



Conduct of operations. Operational relationships and operating documentation

The goal of the inspection carried out is to check the organisation and the implementation of activities related to maintaining, documenting, and monitoring the operational relationships. A review was conducted of the documents governing the organisation and implementation of activities related to conduct of operations, their documentation, and the performance of periodic monitoring. The organisation, implementation, and documentation of activities related to the analysis and evaluation of results of the conduct of operations were inspected. The goal of the inspection was to verify that the documents comply with existing requirements in terms of their scope, sufficiency, completeness, applicability, and maintenance of their current status.

As a result of the inspection carried out, it was established that the necessary organisation was in place and the activities are performed in compliance with established requirements. Recommendations were made for improving the performance effectiveness.

Implementation of production-related activities for the approval of the Dry SFSF PSR results

The purpose of the inspection was to assess the circumstances contained in the application submitted by Kozloduy NPP and the documents attached to it for the approval of the results of the conducted periodic safety review of the Dry SFSF.

In the framework of the inspection, it was established that the general requirements for the issuance of an order as per Art. 37(c) para. 2 of the ASUNE contained in the Regulation on the Procedure for Issuing Licences and Permits for the Safe Use of Nuclear Energy have been met, and the conditions of the current licence for operation of the facility have been fulfilled. In this respect, the implementation of activities to improve the safety of the facility, as well as the planned activities for the period until the next PSR of the facility, were verified. It was found that the application for the issuance of an order was accompanied by the

documents required by the law and the regulation, the necessary amendments to the licence could be made, including its conditions and annexes, the fulfilment of the licence conditions and the conditions for the safe operation of the DSFSF were confirmed, and the necessary measures to improve the safety of the facility were envisaged.

On the basis of the inspection results, no non-compliances or deviations from the requirements have been identified that would preclude the issuance of an order for the approval of the Dry SFSF PSR results.

Operation, maintenance and ageing management of the containments, service water system for safety related consumers, reliable power supply systems, and fire notification and fire suppression systems of Units 5 and 6

During the year, four inspections were carried out covering the organisation and implementation of activities related to the operation, maintenance, and ageing management of the following systems: reliable power supply of consumers of Safety Systems; fire notification and fire suppression systems; service water system for safety related consumers, as well as the containments of the units. A review of the documents governing the activities was conducted to verify their compliance with existing requirements regarding their scope, sufficiency, completeness, and maintenance of their current status. As a result of the inspections carried out, it was established that the necessary organisation was in place and the implementation of the activities complied with the requirements. Recommendations were made aimed at improving the performance effectiveness.

Performance Indicator System. System efficiency, internal indicators

The inspection was conducted to review the organisation and management of the system of performance indicator system for Kozloduy NPP effective management self-assessment. The scope of the inspection included document requirements, the establishment of criteria for selecting indicators, the structure of the system, as well as the functions, responsibilities, and obligations of the nuclear power plant's personnel. The activities carried out in analysing the indicators, determining the status and trends, and identifying corrective and preventive actions to address identified negative deviations were reviewed. Recommendations were made aimed at updating internal documents and improving the process for evaluating the effectiveness of the implemented



preventive and corrective actions set as a result of identified adverse deviations in the status and trends of the indicators.

Control over reporting the maintenance and repair activities and introducing changes to the design of SSCs of Units 5 and 6

The scope of the inspection includes the documents governing the control process for reporting on maintenance and repair activities and implemented design changes, specific requirements imposed on contractors, the information systems and databases used, as well as an assessment of the effectiveness of the system in place for reporting maintenance and repair activities and the technical solutions implemented. A review was conducted of the documents in effect at Kozloduy NPP that establish the requirements regarding deadlines for preparing reporting documents, coordination between administrative units and departments at the plant and with contractors/external organisations, control over the completeness and quality of records, and evaluation of the effectiveness of the performed maintenance and repair activities and the implemented technical solutions. The main findings are that the requirements of the licensee's management system are being met, with documents regulating the control process for reporting activities being applied. Recommendations were made aimed at optimising the process of preparing reporting documents for the performed maintenance and repair activities and making design changes, as well as at improving the efficiency of the information systems, databases, and file structures used at Kozloduy NPP.

State Enterprise Radioactive Waste

In pursuance of the annual inspection plan for 2025, ten inspections were carried out in the specialised divisions of the SE RAW, covering the following topics:

- Application of requirements for considering the relations between all the steps in management of RAW from Kozloduy NPP taking into consideration the options for its subsequent disposal. Acceptance criteria.
- Compliance with the requirements for radiation protection in occupational exposure in SD Decommissioning Units 1-4;
- Readiness for the relicensing of the SD RAW - Kozloduy;
- Readiness for the licensing of the Plasma Melting Facility (PMF);
- Readiness of SE RAW to obtain a licence for decommissioning of SD Permanent Repository for Radioactive Waste – Novi Han;
- safe management of radioactive waste and radioactive materials, including regulatory clearance of materials.
- activities related to construction of National Radioactive Waste Repository.

In 2025, an inspection was conducted at SD National Radioactive Waste Repository of SE RAW to assess the current status of construction activities for the first stage of the National Radioactive Waste Repository in accordance with the construction permit, as well as the readiness to submit documents to the Nuclear Regulatory Agency for the issuance of a permit to commission the facility. The following was established as a result of the inspection:

- construction and installation works have been fully completed;
- finishing and corrective work is being carried out;
- individual tests are being conducted;
- documentation is being prepared to obtain Form 16 under the Spatial Development Act to establish the facility's suitability for use, which must be attached to/submitted with the application/request to the BNRA for a permit to commission the National Radioactive Waste Repository.

In early 2025, two inspections were conducted regarding the readiness of SE RAW for licensing and relicensing of the Plasma Melting Facility and the SD RAW - Kozloduy, and at the end of the year, for the

SD PRRAW – Novi Han regarding the issuance of a decommissioning licence.



National Disposal Facility, Photo SE RAW

3. Inspections at Sites with Sources of Ionising Radiation

Inspection activity is a core process in the BNRA's Management System which takes into account the current status: achieved results or difficulties and omissions on the part of applicants and holders of licenses, permits, and registration certificates under the ASUNE, as well as on the part of persons who have submitted notifications for activities as per Art. 56, para. 2 of the Act.

The main principles when conducting inspection activities are:

- application of a graded approach to the frequency, scope, resources and methods of inspection.
- covering all facilities and activities involving sources of ionising radiation, as well as the different stages of their life cycles;
- allocation of responsibilities and duties for planning, implementation, and monitoring of the inspections conducted, as well as for reporting of the results;
- communication with applicants and holders of licences, permits and certificates of registration under the ASUNE for activities involving sources of ionising radiation, as well as with persons who have submitted notifications for activities as per Art. 56 para. 2 of the Act, including information exchange with specialised regulatory authorities;
- maintaining an honest and open dialogue with all stakeholders, mutual understanding and respect, and good-faith and constructive cooperation in the field of radiation protection for activities involving sources of ionising radiation.



Hot Cell in Cyclotron Complex – town of Panagyurishte

The purpose of the inspections is to verify and establish, at a facility with sources of ionising radiation and during activities involving such sources, compliance with the conditions of issued licences, permits, or registration certificates, as well as compliance with regulatory requirements for radiation protection and the rules for safe work with sources of ionising radiation.

In 2025, 22 planned and 2 unplanned inspections for activities involving sources of ionising radiation were carried out. Additional 8 inspections were carried out to verify the readiness of new SIR sites to be commissioned. A new cyclotron complex for industrial production of radiopharmaceuticals intended for use in nuclear medicine has been commissioned. The facility is in the town of Panagyurishte and is operated by the Bulgarian Radiopharmaceutical Company.

In 2025, 10 new mobile linear accelerators for inspecting vehicles, containers, and cargo were delivered and installed at border checkpoints; by the end of the year, the process of putting them into operation and licensing their use had begun.

Readiness checks for commissioning were conducted at the following sites with sources of ionising radiation in 2025:

- Multiprofile Hospital for Active Treatment Puls (Blagoevgrad) – Nuclear Medicine Department;
- Acibadem City Clinic University Multiprofile Hospital for Active Treatment Tokuda (Sofia) – Bunker with linear accelerator and system for verification of radiotherapy to the Radiotherapy Department;
- TPP Bobov Dol (Kyustendil region, municipality of Bobov dol, Golemo selo) – Gamma-flaw detectors storage facility in Russe;
- Multiprofile Hospital for Active Treatment Puls (Blagoevgrad) - Bunker with linear accelerator to the Radiotherapy Department;
- Bulgarian Radiopharmaceutical Company (Sofia) – cyclotron complex in the town of Panagyurishte with a cyclotron and a radiochemical laboratory for industrial production of radiopharmaceuticals;
- Customs Agency – 3 facilities with sources of ionising radiation;
- Medical Institute of the Ministry of Interior (Sofia) – Nuclear Medicine Department.

In 2025, three inspections on compliance with regulatory requirements for radiation protection in activities with materials with increased content of natural radionuclides were carried out at the following sites:

- Oil and Gas Exploration and Production Plc. (Sofia);
- Khan Asparuh JSC (Ispirih)
- Ecoengineering - RM (the village of Eleshnitsa, municipality of Razlog).

The results of the inspections carried out in 2025 were documented in the inspection reports in accordance with the requirements of the ASUNE. Thirty-three records of finding were prepared to document the results of the inspections carried out. Depending on the nature of the irregularities and deviations from the regulatory requirements and the conditions of the administrative acts issued under the ASUNE, appropriate instructions and recommendations were given. One administrative violation act was issued and served. No coercive administrative measures were imposed.

In 2025, inspections were conducted on the condition of the physical protection systems at the following facilities with sources of ionising radiation: the Gamma – Sterilisation Plant of Sopharma, Sofia, and the gamma flaw detector storage facilities at Control Ltd., Haskovo.



Cyclotron Complex – town of Panagyurishte

It was established that the physical protection systems at the inspected facilities are maintained and operated in accordance with existing requirements.

4. Licences and Permits for Performing Activities at Nuclear Facilities

Kozloduy NPP

The implementation of the regulatory and permit regime involves reviewing and assessing the documents submitted by the applicant to determine their compliance with safety requirements. The results of these reviews and assessments are documented in reports and serve as the basis for regulatory decisions. During the year, a total of over 130 expert assessments of compliance with requirements were conducted, including assessments on the basis of which 58 permits were issued for the performance of activities at nuclear facilities.



Separately, an assessment was conducted of 35 technical solutions for introducing changes to SSCs to determine whether they fall within the scope of the permit regime under the ASUNE.

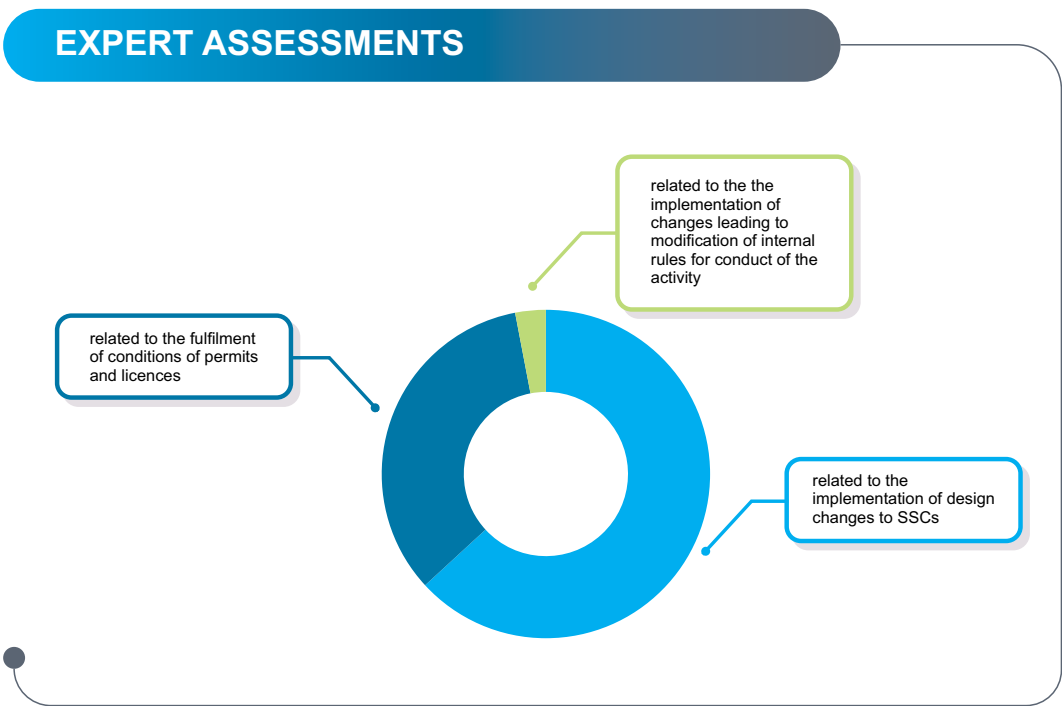
The permits issued during the year are broken down as follows:

- for activities leading to modification of structures, systems, and components important to safety - 49, including 23 for Unit 5, 24 for Unit 6, 1 for activities at both units, and 1 for the Wet SFSF;
- for activities leading to modification of internal rules for conduct of the activity, including procedures, programmes, technical specifications and other documents attached to the operating licences – 4;
- for transport of nuclear material – 3;
- for import of nuclear material – 1;
- for transit of nuclear material – 1.

The key activities governed by the issued permits relate to the following:

- modernisation of the emergency and alarm protection instrumentation, automatic power regulator and reactor-power limiting device at Unit 6;
- replacement of hydraulic snubbers;
- replacement of components of systems important to safety (replacement of valves, electric valves actuators, control valves and heat exchangers);
- modernisation of equipment of the systems measuring the radioactive noble gases in the gaseous emissions through the ventilation stacks of Units 5 and 6;
- update of the libraries containing neutron-physics constants for RWFA fuel assemblies in mixed cores with TVSA fuel assemblies;
- modernisation of the Control Rod Drive System of Unit 6;
- implementation of new revisions of the Technical Specifications for Safe Operation of the units;
- measures to improve the reliability of the power supply to the polar crane at the Wet SFSF.

As part of the follow-up monitoring under the ASUNE, 45 assessments were conducted to verify compliance with the conditions of the operating licences issued for nuclear facilities.



In 2025, RWFA fuel assemblies were loaded in Unit 5 reactor core for the second time in compliance with the programme for a phased transition to operation with a new type of nuclear fuel. For this purpose, the relevant analyses and justifications were submitted to the BNRA which demonstrated the implementation of the safety requirements during the second transition fuel cycle. The operating experience gained so far from the phased transition to RWFA nuclear fuel shows that the main parameters of operation of the reactor installation are maintained within the established design limits while complying with the applicable nuclear safety and radiation protection criteria. The Nuclear Regulatory Agency continues to exercise close oversight of the phased introduction of the new fuel through the review of periodically submitted information, analysis of operational data, and on-site inspections, with the aim of ensuring that a high level of safety is maintained during the operation of Unit 5.



Turbine Hall of Unit 6, Photo Kozloduy NPP

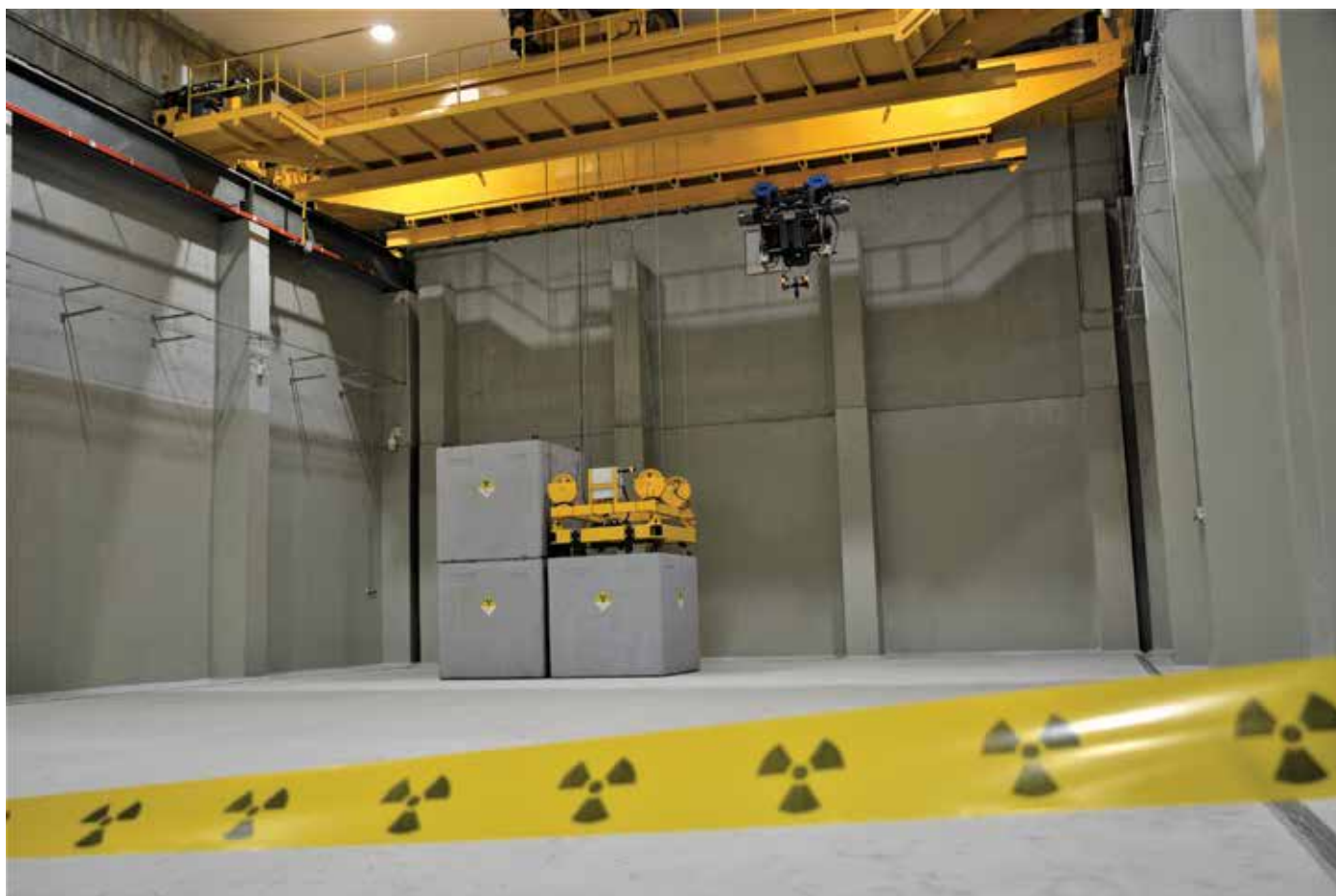
In compliance with the requirements of the ASUNE, during the past year a review and an evaluation were performed of the submitted results from the Dry Spent Fuel Storage Facility Periodic Safety Review, as well as of the actions foreseen for the enhancement of the facility's safety. Based on the review carried out the results and the foreseen measures were approved by order of the BNRA Chairman and conditions and deadlines for conducting the next PSR of the facility were set.

State Enterprise Radioactive Waste

In March 2025, the BNRA Chairman issued a licence for the operation of the plasma melting facility with a validity of 10 years. The current licence is the first one for this facility. The facility is crucial for minimising the amount of radioactive waste generated in the country.

At the end of April 2025, the BNRA Chairman renewed the licence for operation of the SD RAW Kozloduy for a period of 10 years.

At the end of the year, in December 2025, the BNRA Chairman issued a decommissioning licence to the State Enterprise Radioactive Waste through the SD PRRAW – Novi Han for a period of five years; this is the first such licence issued for this nuclear facility. The period of validity is consistent with the goals set in the Strategy for SNF and RAW Management until 2030.



National Disposal Facility, Photo SE RAW

In 2025, a permit was issued for the Reconstruction of Site No. 2 for the Interim Storage of ‘Heavy’ Radioactive Waste Containers.

During the calendar year, a number of permits were renewed in stages, including a permit for the construction of the first stage of the National Radioactive Waste Repository, a permit for the storage of radioactive waste in Spray Pond 1, and a permit for a steam generator fragmentation area in the turbine hall.

Specialised Training Licences and Certificates of Competency

In 2025, the licence for RAD Protect Ltd. to conduct specialised training and issue certificates of competence for activities involving sources of ionising radiation was renewed.

In accordance with the requirements of the ASUNE, in 2025 the qualification examination board appointed by the Chairman of the BNRA held 11 meetings. As a result, 25 certificates of competence were issued to individuals performing activities at nuclear facilities. Twenty-two of them were issued for operational personnel and 3 for management personnel. One certificate was also issued for a qualified expert in radiation protection. Information on the issued certificates is available in the public register maintained by the BNRA.

The holders of licences for specialised training issued a total of 3,586 certificates of competency, certifying their holders have passed initial and continuing specialised training to perform activities in nuclear facilities and with sources of ionising radiation. Information on the certificates and their e-signed copies are available in the BNRA’s e-service system.

The regulatory oversight carried out over the past year, including inspections of licence holders (Kozloduy NPP, Medical University – Varna, and RAD Protect OOD), shows that the activities are in compliance with regulatory requirements and the conditions of the issued licences.

5. Licences and Permits for Activities Involving Sources of Ionising Radiation

The regulatory review of the applications and submitted documents for the issuance of licences, permits, and certificates of registration for activities involving sources of ionising radiation, as well as of notifications filed pursuant to Art. 56 para.2 of the ASUNE, is conducted in accordance with the “Procedure for Regulatory Review of Documents for Activities Involving Sources of Ionising Radiation” approved by the Chairman of the Nuclear Regulatory Agency. When determining the scope, level of detail, duration, and resources required to conduct a regulatory review of applications and documents, a graded approach is applied, taking into account the level of radiation risk for a specific activity involving sources of ionising radiation, in accordance with the guidelines set forth in the guidance document “Application of a Graded Approach to Activities Involving Sources of Ionising Radiation – PP-25/2023.”



Halcyon (Varian) medical linear accelerator at the PULSE Hospital, Blagoevgrad

During the regulatory review of applications and documents, the compliance of the declared activity involving sources of ionising radiation with the regulatory requirements for ensuring radiation protection applicable to the activity is assessed. The regulatory review includes a formal regularity review, a substantive review, an analysis and an assessment of the submitted documents.

In 2025, a total of 1,154 reports from regulatory review of documents submitted to the BNRA by applicants for activities involving sources of ionising radiation were prepared. A total of 245 licences for activities involving sources of ionising radiation (divided into review areas) were issued, as follows:

- 212 for medical and veterinary purposes;
- 26 for business and scientific purposes and for control functions;
- 6 for the transport of radioactive substances;
- 1 for production of SIR.

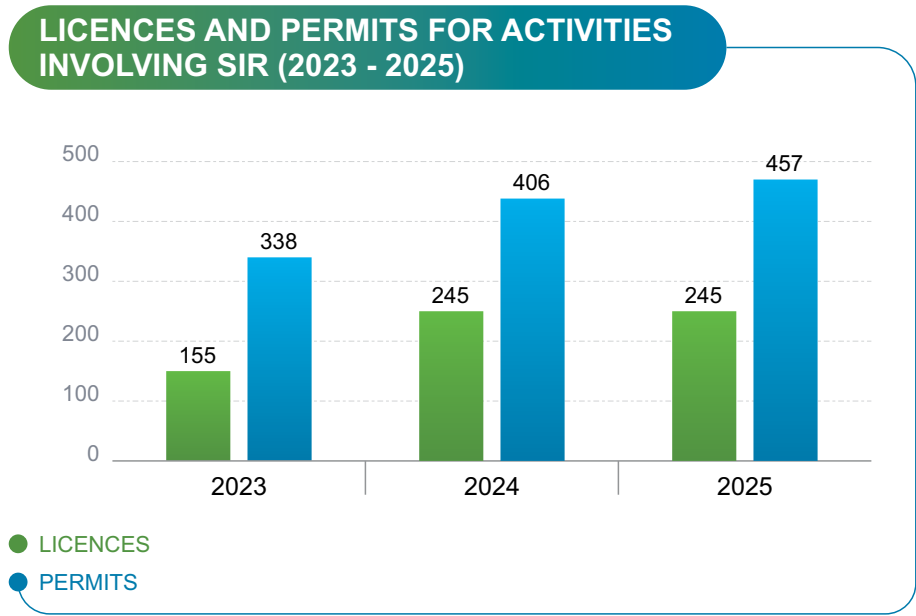
By orders of the BNRA Chairman, 205 licences were amended and 22 licences for activities involving sources of ionising radiation were terminated.

In 2025, a total of 457 permits for the following activities involving sources of ionising radiation were issued:

- temporary storage of radioactive substances – 13;

- modification of design structures, systems and components, related to the radiation protection at sites with SIR - 1;
- site construction, assembly and pre-testing of sources of ionising radiation – 350;
- individual shipment and transit of radioactive substances – 6;
- import and export of sources of ionising radiation – 83;
- decommissioning of a radioactive substances installation – 4.

By orders of the BNRA Chairman, 12 permits for activities involving sources of ionising radiation were amended.

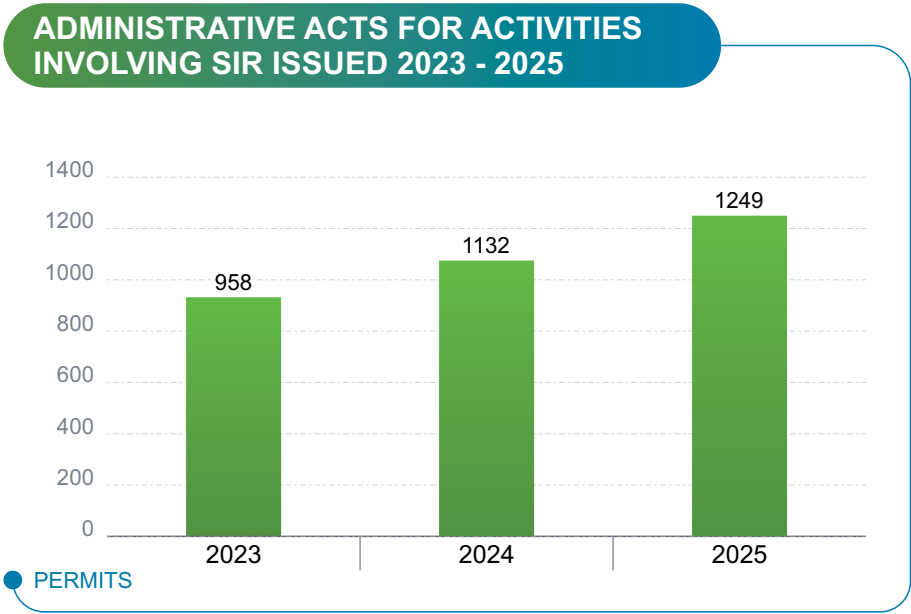


The number of the permits issued for activities involving sources of ionising radiation has increased with 35% compared to the previous two years. For the same period, the number of the licences issued for activities involving sources of ionising radiation increased with 58%.

In 2025, 30 registration certificates were issued under Art. 56, para. 3 of the Safe Use of Nuclear Energy Act for work with sources of ionising radiation for the purpose of maintenance, installation, dismantling, measurements, construction and repair activities. 178 notifications for performing activities of insignificant radiation risk and activities involving materials with increased content of natural radionuclides were registered in the public register under Art. 27, para. 2 of the Safe Use of Nuclear Energy Act.

Pursuant to Council Regulation (EURATOM) 1493/93 on shipments of radioactive substances between Member States, a total of 100 import declarations for radioactive sources were processed and certified.

Public registers are kept of all licences, permits and registration certificates issued by the BNRA Chairman, as well as all submitted notifications for performing activities under Art. 56, para. 2 of the Safe Use of Nuclear Energy Act.



In 2025, a total of 1,249 administrative acts under the Safe Use of Nuclear Energy Act related to regulating activities involving sources of ionising radiation were issued. The number has increased with 30% compared to the previous two years.

6. Nuclear Material Accounting and Control

The safeguards system under the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) is applied in accordance with the signed Agreement on Safeguards Implementation between the EURATOM countries, the IAEA, and the Republic of Bulgaria. Taking into account the information submitted in implementation of the Agreement and the Additional Protocol thereto, and on the basis of the performed inspections, assessments and analyses, the IAEA concludes whether Bulgaria meets the requirements of the NPT.



Spent Fuel Storage Facility, Photo Kozloduy NPP

In connection with the Agreement, Bulgaria provides to the European Commission information on the nuclear materials control and accounting. After reviewing and verifying this information, the European Commission in turn submits it to the IAEA. Reports are prepared for the material balance areas subject to reporting – Kozloduy NPP, SD Decommissioning Units 1-4 at the SE RAW, SD PRRAW - Novi Han, one material balance area for the interim storage of RAW representing nuclear material for safeguards purposes at the SD Decommissioning Units 1-4 related to the preparation for decommissioning of the SD PRRAW - Novi Han, the line for regeneration and clean-up of ion-exchange resins – village of Eleshnitsa, the Institute for Nuclear Research and Nuclear Energy (INRNE), as well as the designated material balance area for sites with small quantities of nuclear material on the territory of the entire country, whose operator is the BNRA.

During the period, the BNRA met on time its obligations under the Agreement to prepare and submit to the EC monthly and annual reports on the quantities of nuclear material in the material balance area, for which it is directly responsible. The BNRA organised the receipt of the necessary information from the licensees, its subsequent processing, as well as the submission of the updated declarations under the Additional Protocol of this area. The relevant declarations under the Additional Protocol were sent to the IAEA and the EC in a timely manner.

In 2025, nine inspections were carried out at the Kozloduy jointly with IAEA and EC inspectors to check the compliance with the Safeguards and the Additional Protocol. The inspections confirmed the conformity between the nuclear material declared in the reporting documents and the available nuclear material in terms of quantity, enrichment, type, and isotopic composition.

Over the review period, EURATOM's inspectors conducted a comprehensive documentary review of all sites in the material balance area, including sites with small quantities of nuclear material. Eight joint inspections were conducted by the IAEA, EURATOM and BNRA inspectors in the towns of Sofia, Varna, Shumen, Stara Zagora, Plovdiv, and the village of Bogomilovo. It was found that the small quantities of nuclear material available on-site comply with the declared quantities and oversight performed on them meets requirements.

The activities related to the decision of the Council of the EU to revise Commission Regulation (Euratom) No. 302/2005 on the application of Euratom safeguards was completed with the adoption of a new Commission Regulation (Euratom) No. 2025/974 of 26 May 2025 which entered into force effective as on 6 July of the same year. The new regulation applies a graded approach to reduce the burden on holders of small quantities of nuclear material, introduces new requirements regarding the formats and deadlines for declaring key technical characteristics, and introduces provisions for applying the concept of incorporating safeguard considerations early in the design processes for certain facilities, including during construction, major design changes, and decommissioning. An adaptation of the provisions has been made and annexes regarding for the new types of installations expected to be commissioned in the near future (geological repositories, encapsulation plants, new types of reactors) have been added.

7. Emergency Preparedness

Pursuant to the Disaster Protection Act, a Unified Rescue System (URS) has been set up in the Republic of Bulgaria aimed mainly at performing activities ensuring public protection. The BNRA is part of this system, and in the event of a nuclear accident or radiological emergency, the BNRA Chairman participates in the National Task force (NT).

To fulfil its obligations as BNRA Chairman under the ASUNE and arising from the Convention on Early Notification of a Nuclear Accident, the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, and the National Disaster Protection Plan, the BNRA maintains an emergency response team. In case of a nuclear accident or radiological emergency, the main functions of the team are related to notifying the IAEA and the European Commission, analysing the incoming data, forecasting the accident evolution, estimating the consequences, and preparing justified proposals to the National Task force

on applying protective measures. Over the review period, members of the emergency team underwent number of trainings on emergency planning and preparedness on a national level, protective measures and criteria for their implementation, bilateral agreements and notification of international organisations in order to maintain the required knowledge and skills.



In 2025, the BNRA and Kozloduy NPP emergency response teams conducted six joint trainings aimed at verifying the preparedness of the teams to perform their designated functions and test the communication devices. During the review period, the BNRA representatives participated in all ConvEx series exercises organised by the IAEA, as well as in the ECUREX 2025 exercise organised by the European Commission, which was held in conjunction with the ConvEx-3 exercise organised by the IAEA.



ConvEx-3 Full-Scale International Emergency Response Exercise, Photo Civil Protection

Over the past period, the BNRA registered 20 cases related to cargoes containing materials with elevated content of radioactive isotopes detected at border checkpoints or at the entrances of large metallurgical companies. In nine of these cases, the higher cargo activity levels resulted from the presence of natural radioactive isotopes K-40, Ra-226, and Th-232. In six of the cases, orphan sources were detected; in two of these, the cargoes were not allowed to enter Bulgarian territory. In the remaining five cases, the cargoes were allowed to enter the country territory following statements from the competent authorities. The response in each case complied with the established inter-agency procedures, and none of these cases caused any radiation consequences or hazard for the public and the environment.

8. Small Modular Reactors

The BNRA is an active participant in the Nuclear Harmonisation and Standardisation Initiative (NHSI), launched by the IAEA Director General, in support of the harmonisation and standardisation of regulatory and industrial approaches to facilitate the safe and successful deployment of small modular reactors (SMRs) worldwide. A representative of the BNRA has been included in Working Group 2: Multinational pre-licensing joint review of SMRs.

The Nuclear Regulatory Agency is a partner and beneficiary of the NEXT (Nuclear Expediting the Energy Transition) and PHOENIX programmes under the U.S. Department of State's FIRST (Foundational Infrastructure for the Responsible Use of Small Modular Reactor Technology) initiative. The initiative aims to provide technical assistance to partner countries intending to deploy SMRs, and includes specific measures to support the development of administrative capacity for the licensing and regulation of SMRs. The BNRA has also begun participating in the SPRING programme under the FIRST initiative, which focuses on the Hitachi BWRX-300 SMR.

The Chairman of the BNRA participated in the Fourth International Nuclear Conference with Exposition: SMR and advanced nuclear technologies for industrial applications. The conference was organised by the Bulgarian Energy and Mining Forum and the Canadian Chamber of Commerce in Bulgaria and brought together officials from European institutions, energy and scientific organisations from the country, and industry representatives, united by a common interest in the implementation of innovative SMR technologies.

9. Nuclear Harmonisation and Standardisation Initiative (NHSI)

The Nuclear Regulatory Agency participated in the plenary meeting of the IAEA's Nuclear Harmonisation and Standardisation Initiative held from 4 to 6 December 2025. The purpose of the meeting was to update the participants on the outcomes of Phase 2 of the Initiative, and collect feedback on proposed future activities.

The Regulatory Track aims to develop a Global Framework for Advanced Reactor Reviews (GFARR) which will define a common scope and criteria for regulatory reviews. The highlights of the track's work for 2025 are:

- Launch of Phase II with the support of over 25 regulatory authorities and industry;
- Launch of a pilot multinational pre-licensing joint review — the EAGLES-300 NHSI International Pre-Licensing Pilot Project;
- Development of the Regulatory Cooperation Toolkit;
- SMR Regulation and Cooperation Hub – a centralised on-line hub providing key information on completed national or multinational regulatory reviews of SMRs and information on regulatory readiness for SMRs;
- Finalisation of the Global Framework for Advanced Reactor Reviews (GFARR) Blueprint;
- The establishment of the Nuclear Security Working Group;
- Three technical documents on regulatory cooperation have been published (or are close to publication).

10. Interaction and Coordination with Other State Bodies for Specialised Control

The BNRA Chairman interacts and coordinates the Agency's actions with the specialised control bodies pursuant to the ASUNE - the Minister of Health, the Minister of Environment and Water, the Minister of Interior, the Minister of Defence, the Minister of Transport, the Minister of Education and Science and the Chairman of the State Agency for National Security at:

- Preventive, ongoing and subsequent oversight on nuclear facilities and sites with SIR for their compliance with the regulatory requirements for ensuring radiation protection and physical protection and undertaking corrective actions in the event of identified deviations;
- Control of high-activity sources (category 1, 2 and 3 sealed sources) and prevention of illicit trafficking of radioactive materials;
- Analyses and assessments of radiation and physical protection at the nuclear facilities and sites with SIR;
- Maintaining emergency preparedness and response in the event of incidents and accidents;
- Informing the public on issues related to radiation protection in the country.

The interaction between the BNRA and the specialised control bodies include:

- Operational exchange of information and mutual notification in cases where intervention by different authorities is required;
- Joint inspections;
- Cooperation in solving problems, agreement and coordination of actions and work organisation for completion of tasks related to radiation and physical protection, emergency planning and response, which are within the competence of different authorities.

Licences and permits for activities at sites with high-activity sources and radioactive substances are issued by the BNRA Chairman after coordination with the competent authorities from the Ministry of Interior regarding the physical protection. Inter-institutional procedures establishing the response procedure of the specialised oversight bodies are applied for events related to orphan sources or illegal trafficking of radioactive materials.

The BNRA provides on a regular basis and on-demand information to the Ministry of Health, the Ministry of Interior and the State Agency for National Security about the issued licences, permits and registration certificates for activities involving sources of ionising radiation, and the individuals performing these activities.

11. International Cooperation

International Atomic Energy Agency (IAEA)

IAEA General Conference

The 69th Regular Session of the IAEA General Conference was held from 15 to 19 September 2025 in Vienna, Austria. The Bulgarian delegation was led by the BNRA Chairman, Tsanko Bachiyski.



During the General debate and Annual Report session, the Chairman of the BNRA delivered a national statement in the plenary hall. In his speech he highlighted that our country considers nuclear safety and security of the nuclear facilities a major factor for developing nuclear energy. Bulgaria supports and strictly complies with the internationally recognised safety and security standards in the nuclear sector in the operation of Units 5 and 6 of the Kozloduy NPP, as demonstrated within the IAEA OSART Mission at the end of 2024 at our nuclear power plant. The findings of the 2024 IAEA IRRS mission report were noted stating that Bulgaria has a comprehensive and robust regulatory framework for nuclear and radiation safety covering all facilities and activities and highlighted BNRA as a very mature and competent regulator, with a culture of continuous improvement, which fulfils its statutory obligations without undue influence.

Eighth Review Meeting of the Contracting Parties to the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management

The Eighth Review Meeting of the Contracting Parties to the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (Joint Convention) was held from 17 to 28 March 2025 in Vienna. National reports on the fulfilment of the obligations under the Joint Convention were provided by the countries which have ratified it.

The National Report of the Republic of Bulgaria, reflecting the current status, achievements, and challenges facing the safe management of spent fuel and radioactive waste in Bulgaria, was presented by the Chairman of the BNRA as head of the Bulgarian delegation for the review. The report was accepted without recommendations, demonstrating that our country is successfully fulfilling its obligations under the Joint Convention. The conclusions of the 8th Review Group's report noted that Bulgaria has established a legislative and regulatory framework for the management of spent nuclear fuel and radioactive waste in accordance with the IAEA safety standards.

The construction and operation of the Plasma Melting Facility for the treatment of radioactive waste from the SE RAW was recognised as a good practice. The facility is cited as an example of the implementation of innovative technologies in radioactive waste management, which allows for a significant reduction in the volume of radioactive waste and the production of a chemically and mechanically stable product for subsequent storage. The recognition of Bulgaria's good practices under the Joint Convention is a significant achievement, placing Bulgaria among the 15 countries with good practices highlighted during the 8th Review.

Two Areas of Good Performance by Bulgaria were also highlighted:

- The establishment of an e-register for the accounting and control of sources of ionising radiation, which enables real-time registration and traceability of these sources. This optimises operational interaction and communication between the BNRA and companies conducting activities involving sources of ionising radiation, and automates the processes for exchanging information related to the ongoing control and inventory of the sources of ionising radiation;
- Sustainable practical implementation of the concept of regulatory clearance of materials during the decommissioning process.

Fulfilment of the Obligations of the Republic of Bulgaria under the IAEA Conventions and EU Directives

The BNRA submitted within the established deadlines:

- Tenth National Report of the Republic of Bulgaria under Convention on Nuclear Safety;
- Action Plan for ENSREG Topical Review II on "Fire Protection"

Participation in IAEA Activities

BNRA representatives were regularly involved in the working bodies (committees, working groups), regularly performing their duties and obligations as national coordinators under the IAEA Conventions, Safeguards System and various IAEA information systems. BNRA employees participated in a number of events (technical meetings, seminars, etc.) organised by the IAEA on various topics within the field of nuclear

safety and radiation protection.

Technical Cooperation

In 2025, the implementation of the two national projects for the 2024-2025 cycle under the IAEA Technical Cooperation Programme, for which the BNRA is the coordinator for Bulgaria, continued.

- BUL6015 Enhancing the Capacity of Cyclotron and Small Scale Radiopharmaceutical Production. The beneficiary of the project is Alexandrovska University Hospital with a total budget of EUR 674,580;

- BUL5020 Increasing the Yield and Quality of Main Vegetable Crops through Nuclear Technology to Withstand the Impacts of Climate Change, with the Institute of Vegetable Crops - Maritsa, the town of Plovdiv, being the beneficiary with a total budget of EUR 410,020.

- Two new proposals for national projects were approved for the 2026-2027 cycle:

- BUL0014 Introducing Innovative Methods to Boost Interest Towards Nuclear Science and Technology in Secondary Schools The beneficiary of the project is Kozloduy NPP EAD with a total budget of EUR 89,769;

This project is being implemented with the active support of the BNRA.

- BUL7003 Building Capacity in Isotope Hydrology to Improve Water Cycle Understanding for Climate Change Adaptation and Integrated Water Resources Management, with the National Institute of Meteorology and Hydrology being the beneficiary with a total budget of EUR 355,040.

As part of technical cooperation with the IAEA, scientific visits were conducted during the year by experts from the national regulatory authorities of Iran, Armenia, Lithuania, Pakistan, Uzbekistan, and Belarus to learn about the agency's experience in various regulatory aspects, such as emergency planning and preparedness, radiation protection, and administrative capacity building, which demonstrates the BNRA's growing international standing.



The BNRA hosted the Regional Training Course on Train-the-Trainers for Radiation Protection Officers organised by the IAEA. The event was attended by 29 experts from IAEA member states in Europe and Central Asia, including representatives from Bulgaria.

Cooperation with the European Union Structures

European Nuclear Safety Regulators Group (ENSREG)

Last year, representatives of the BNRA took part in the plenary sessions of the organisation and in activities performed by the Improvements in the Transparency Arrangements Working Group of ENSREG.

Western European Nuclear Regulators Association (WENRA)

The BNRA Chairman participated in WENRA's spring session, and BNRA experts were actively involved in activities performed by Reactor Harmonization Working Group, Working Group on Waste and Decommissioning, and Working Group on Recruitment and Skills Management of WENRA.

Nuclear Energy Agency (NEA) of the Organisation for Economic Co-operation and Development (OECD)

BNRA's representatives continued to be involved in the NEA committees and working groups activities within its competence. The BNRA also participated in the activities of the permanent Interdepartmental Coordination Mechanism for Bulgaria's Accession to the Organisation for Economic Co-operation and Development (OECD).

Bilateral Cooperation

The strategic partnership between the Bulgarian BNRA and the U.S.NRC continues within the ongoing joint Action Plan of the two regulatory bodies. Several meetings with US NRC senior representatives have been held, including with the Commissioner David Wright. Various issues concerning our bilateral cooperation were discussed at the meeting, as well as the specific amount of support that US NRC provides the BNRA for building the required administrative and technical capacity to meet the challenges associated with the development of Bulgaria's nuclear programme.

The relationship between the BNRA and the US National Nuclear Security Administration was strengthened, and trainings in the field of nuclear security and guarantees for BNRA and Kozloduy NPP experts were planned.



At the end of September 2025 in Sandanski the first of a kind four-party working meeting of regulatory bodies from the South-Eastern Balkans – Greece, North Macedonia, Cyprus and Bulgaria was held.

During the two-day meeting, the experts discussed the institutional framework and the regulations of the four countries, their harmonisation with the European Union law, inspection activity of the regulatory bodies, and radioactive waste management. Best practices were shared regarding cross-border issues related to goods transportation and transit passage, border control and communication in case of illicit traffic between neighbouring countries, specific case studies, and preparedness for response to contingencies.

As a result, preparedness to exchange information and experience in the field of radioactive waste management was expressed, and to participate in inspections organised by the regulatory bodies.

In May 2025, BNRA delegation a working visit to Athens was held at the invitation of the Greek Atomic Energy Commission Chairman. During the visit the two regulators shared experience and good practices, discussed the challenges and the development in the field of radiation protection and radioactive waste management.

On 19 and 20 May, experts from National Nuclear Regulator of South Africa visited the BNRA. The visit was held within the Support for the National Nuclear Regulator of South Africa Project, organised and funded in the framework of the European Instrument for Nuclear Safety Cooperation.



During the visit, the BNRA experts shared Bulgaria's experience and best practices in the field of regulation and licensing, safety analysis, modernisation and decommissioning of nuclear facilities, radioactive waste management, and other important regulatory topics. Issues related to licensing of the facility for low- and intermediate-level radioactive waste disposal, practices for informing stakeholders and the public, as well as international cooperation were discussed. Following the visit, an on-line meeting on emergency planning and preparedness issues was held in October with lecturers – experts from the BNRA.

International training

BNRA is committed to continuously improving the professional competence of its employees. The development of administrative capacities at the BNRA was prioritised in connection with the preparation

for licensing the AP-1000 technology within the plans for construction of new nuclear facilities at the Kozloduy NPP site. In April 2025, jointly with the US NRC, the first of its kind in Europe regional training course on AP-1000 reactor technology was organised in Sofia and led by instructors from the US NRC Technical Training Centre. 30 experts from the nuclear regulators of Bulgaria, Ukraine, Slovakia, Slovenia and Sweden participated in the training. BNRA experts participated also in an on-line training on AP-1000 probabilistic safety assessment organised by US NRC.



In May 2025 BNRA hosted two national workshops organised jointly with IAEA lecturers:

- ***National Workshop on Nuclear Law (13-15 May)***

The workshop purpose was to support the national legal framework governing the safe and secure use of nuclear energy. The four main pillars of the nuclear law - nuclear safety, nuclear security, safeguards, and civil liability for nuclear damage were discussed during the workshop. The legal framework for construction of new nuclear units, including small modular reactors, was also considered.

- ***National Workshop on Safety Culture Self-Assessment (7-11 July)***

The workshop agenda was focused on the need for regulatory bodies to conduct safety culture self-assessments and on the approaches and methodology for self-assessments effective planning, conduct and analysis.

Apart from BNRA experts, representatives of relevant Bulgarian institutions including Ministry of Energy, Ministry of Foreign Affairs, Bulgarian Energy Holding, Kozloduy NPP, Kozloduy NPP – New Build EAD, State Enterprise Radioactive Waste, etc. participated in the workshop.

BNRA experts participated also in more than 30 workshops and training courses on various topics organised by IAEA and other international nuclear organisations.

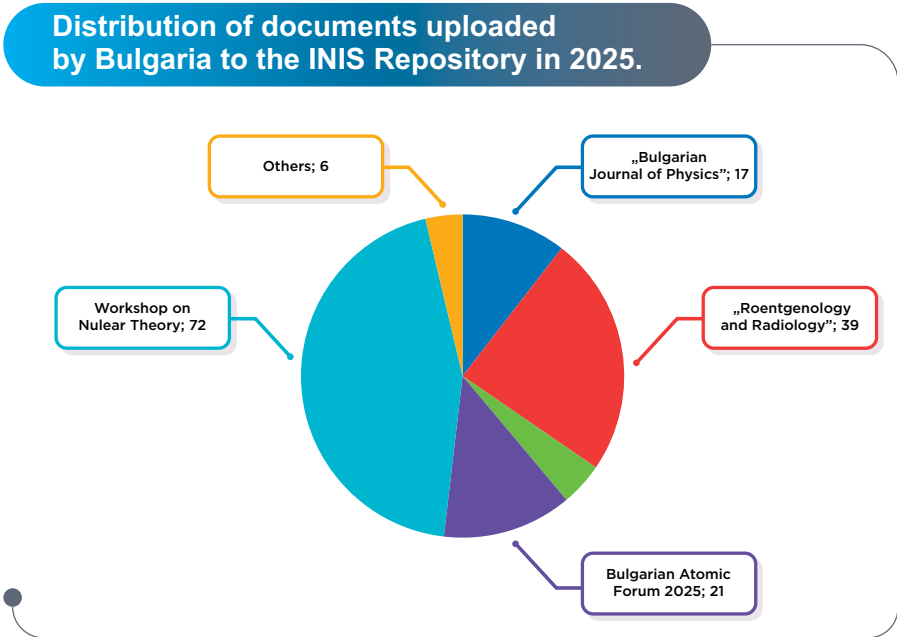


INIS National Centre

Bulgaria has been a member of the IAEA International Nuclear Information System (INIS) since its establishment in 1970. The National INIS Centre is responsible for uploading inputs to the system from Bulgaria. Access to documents in the INIS repository is free and unrestricted via the Internet at: <https://inis.iaea.org/>

In January 2025, the new INVENIO system for input data processing and extracting data from INIS repository was launched. The INVENIO platform is open software that member states can also use as a national nuclear repository. INVENIO provides opportunity to receive and extract data from INIS.

In 2025, over 500 documents were reviewed and categorised, 162 of which were referred to INIS. Of these documents, 138 are articles published in specialised Bulgarian magazines, and 24 documents are reports from the 2025 Bulgarian Atomic Forum and books containing summaries of various events held in Bulgaria, the subject matter of which fall within the scope of INIS. Thus, the total number of documents in INIS Repository uploaded by Bulgaria since the systems creation has reached over 15,000, including over 3,500 full-text documents.



APPENDIX 1

List of operational events, which occurred in the nuclear facilities in 2025, reported to the BNRA

№	DATE	SITE	DESCRIPTION	INES
1.	28 February 2025	Unit 5	Planned taking out of service of Safety System Train 1	0
2.	18 March 2025	Unit 5	A pump from the emergency boron injection system in the primary circuit failed to switch off from the control switch	0
3.	11 August 2025	Unit 5	Unplanned actuation of fire notification and fire suppression systems of Safety System Train 3	0
4.	03 November 2025	Unit 5	Defective power supply unit of the cabinet of safety control system train 1	0
5.	29 November 2025	Unit 6	A steam-generator emergency feedwater pump from the safety system train 3 was taken out of stand-by mode	0
6.	21 December 2025	Unit 6	Disconnection of Unit 6 generator from the national grid	0

APPENDIX 2

Nuclear Facilities Inspections in 2025

№	Site	Period	Inspection Topic
1.	Kozloduy NPP	05 – 07 March 2025	Operation, maintenance and ageing management of the service water system for safety related consumers (QF/VF)
2.	Kozloduy NPP	24 – 25 March 2025	Surveillance of fresh nuclear fuel transportation
3.	Kozloduy NPP	26 March – 03 April 2025	Current state of the automated system for determining the nuclide composition and concentration of radioactive noble gases in the gaseous emissions at Units 5 and 6 (NGM 2000)
4.	Kozloduy NPP	09 – 10 April 2025	Surveillance of fresh nuclear fuel transportation
5.	Kozloduy NPP	22 – 25 April 2025	Fire detection and fire suppression systems. Operation, maintenance and ageing management
6.	Kozloduy NPP	30 April – 14 May 2025 r.	Inspection in connection with an order to assign a preliminary inspection of Vratsa Regional Prosecutor's Office
7.	Kozloduy NPP	07 – 08 May 2025	Application of the Safeguards under the Treaty on the Non-Proliferation of Nuclear Weapons – jointly with the IAEA and EC inspectors, Units 5 and 6, Fresh Fuel Storage Facility - 3
8.	Kozloduy NPP	30 May. – 05 June 2025	Application of Safeguards under the Treaty on the Non-Proliferation of Nuclear Weapons – jointly with the IAEA and EC inspectors, Unit 5
9.	Kozloduy NPP	02 – 04 June 2025	Preparedness of Unit 5 for start-up and operation following 2025 outage
10.	Kozloduy NPP	17 – 19 June 2025	Radiation Protection. Organisation and supervision of activities
11.	Kozloduy NPP	03 July 2025	Application of the Safeguards under the Treaty on the Non-Proliferation of Nuclear Weapons – jointly with the IAEA and EC inspectors, Units 5 and 6, Fresh Fuel Storage Facility-3
12.	Kozloduy NPP	09 – 10 July 2025	Performance indicators system for effective management self-assessment
13.	Kozloduy NPP	03 – 05 August 2025	Application of the Safeguards under the Treaty on the Non-Proliferation of Nuclear Weapons – jointly with the IAEA and EC inspectors, SFSF

№	Site	Period	Inspection Topic
14.	Kozloduy NPP	12 – 14 August 2025	Implementation of production-related activities for the approval of the Dry SFSF PSR results
15.	Kozloduy NPP	03 – 04 September 2025	Application of the Safeguards under the Treaty on the Non-Proliferation of Nuclear Weapons – jointly with the IAEA and EC inspectors, SFSF
16.	Kozloduy NPP	09 September 2025	Application of the Safeguards under the Treaty on the Non-Proliferation of Nuclear Weapons – jointly with the IAEA and EC inspectors, SFSF
17.	Kozloduy NPP	01 – 03 October 2025	Emergency Planning and Preparedness
18.	Kozloduy NPP	14 – 16 October 2025	Operation and ageing management of reliable power supply systems of the safety systems' equipment
19.	Kozloduy NPP	27 – 28 October 2025	Application of the Safeguards under the Treaty on the Non-Proliferation of Nuclear Weapons – jointly with the IAEA and EC inspectors, Units 5 and 6, Fresh Fuel Storage Facility-3
20.	Kozloduy NPP	05 – 06 November 2025	Control over reporting the maintenance and repair activities and introducing changes to the design of Units 5 and 6 SSCs
21.	Kozloduy NPP	05 – 06 November 2025	Conduct of operations. Operational relationships and operating documentation
22.	Kozloduy NPP	18 – 20 November 2025	Inspection of the adherence to the requirements of License Series CO, No. 5794, when performing continuing specialised training
23.	SD RAW-Kozloduy	18 – 20 November 2025	Emergency Planning and Preparedness
24.	Kozloduy NPP	18 – 21 November 2025	Application of the Safeguards under the Treaty on the Non-Proliferation of Nuclear Weapons – jointly with the IAEA and EC inspectors, Units 5 and 6, Fresh Fuel Storage Facility-3
25.	Kozloduy NPP	24 – 27 November 2025	Preparedness of Unit 6 for start-up and operation following 2025 outage
26.	Kozloduy NPP	24 – 28 November 2025	Application of the Safeguards under the Treaty on the Non-Proliferation of Nuclear Weapons – jointly with the IAEA and EC inspectors, Units 5 and 6, Wet SFSF, Dry SFSF
27.	Kozloduy NPP	08 – 09 December 2025	Assessment of the effectiveness of preventive and follow-up measures taken based on the SSCs' behaviour during operation
28.	Kozloduy NPP	08 – 12 December 2025	Ensuring the physical protection of Kozloduy NPP
29.	Kozloduy NPP	09 – 11 December 2025	Operation, maintenance and ageing management of Units 5 and 6 containments

№	Site	Period	Inspection Topic
30.	SD Decommissioning Units 1-4	15 – 17 December 2025	Securing the physical protection at SD Decommissioning Units 1-4
31.	SE RAW, Headquarters	22 – 23 December 2025	Compliance with the requirements set out in Chapter 10, Management System, of the Regulation on Safety in Radioactive Waste Management
32.	SE RAW, SD RAW – Kozloduy	25 – 26 November 2025	Application of requirements for considering the relations between all the steps in management of RAW from Kozloduy NPP taking into consideration the options for its subsequent disposal. Acceptance criteria
33.	SE RAW, SD Permanent Repository for Radioactive Waste – Novi Han	12 December 2025	Readiness of SE RAW to obtain a licence for decommissioning of SD Permanent Repository for Radioactive Waste – Novi Han
34.	SE RAW, SD Decommissioning Units 1-4	27 – 28 November 2025	Compliance with the requirements for radiation protection in occupational exposure in SD Decommissioning Units 1-4
35.	SE RAW, SD RAW – Kozloduy Kozloduy NPP	16 – 17 June 2025	Application of regulatory requirements for RAW minimisation during their generation and subsequent processing and disposal
36.	SE RAW, SD RAW – Kozloduy Kozloduy NPP	18 – 19 June 2025	Compliance with safety requirements when storing RAW at Kozloduy NPP site
37.	SE RAW, SD Permanent Repository for Radioactive Waste – Novi Han	04 – 06 June 2025	Application of safety requirements when accepting and subsequently managing RAW from nuclear applications. Mid-term planning of activities carried out at SD Permanent Repository for Radioactive Waste – Novi Han
38.	SE RAW, SD National Radioactive Waste Repository	08 – 10 April 2025	Activities related to construction of National Radioactive Waste Repository
39.	SE RAW, SD RAW – Kozloduy	24 – 26 March 2025	Readiness to renew the operating licence for RAW management facility through SD RAW - Kozloduy within SE RAW
40.	SE RAW, Plasma melting facility	25 – 26 February 2025	Readiness for issuing an operating licence for treatment and conditioning of RAW with a high-volume reduction factor

ABBREVIATIONS

NPP	Nuclear Power Plant
RS	Reactor Scram
UNAP	Updated National Action Plan
NEA	Nuclear Energy Agency
BNRA	Bulgarian Nuclear Regulatory Agency
BAS	Bulgarian Academy of Sciences
SFP	Spent Fuel Pools
PSA	Probabilistic Safety Analysis
WWER	Water-Water Energy Reactor
NA	Naval Academy
MMA	Military Medical Academy
WChR	Water Chemistry Regime
NFSCP DG	National Fire Safety and Civil Protection Directorate General
SANS	State Agency for National Security
SMR	Small Modular Reactors
NPT	Treaty on the Non-Proliferation of Nuclear Weapons
SE RAW	State Enterprise Radioactive Waste
EC	European Commission
EU	European Union
URS	Unified Rescue System
ASUNE	Act on Safe Use of Nuclear Energy
CSA	Civil Servants Act
EEA	Executive Environment Agency
SIR	Sources of Ionising Radiation
INES	International Nuclear and Radiological Event Scale
IRT-2000	Research Reactor at INRNE- BAS
IPA	Institute of Public Administration
INRNE	Institute for Nuclear Researches and Nuclear Energy
SSCs	Structures, systems, and components
CCI	Complex Chemical Indicator
CNS	Convention on Nuclear Safety
IAEA	International Atomic Energy Agency
MHAT	Multidisciplinary Hospital for Active Treatment
MI	Ministry of Interior
MH	Ministry of Health

MEW	Ministry of Environment and Water
CM	Council of Ministers
NEK	Natsionalna Elektricheska Kompania EAD
NRSIR	National Register of SIR
RTCEPESA	Regulation on the Terms and Conditions for Evaluation of the Performance of Employees in the State Administration
NRWR	National Radioactive Waste Repository
NCRBRP	National Centre of Radiobiology and Radiation Protection
NH	National Headquarters
OECD	Organisation for Economic Co-operation and Development
JINR	Joint Institute for Nuclear Research - Dubna
SNF	Spent Nuclear Fuel
PRRAW	Permanent Repository for RAW
RAW	Radioactive Waste
SSs	Safety Systems
PMF	Plasma Melting Facility
TPR	Topical Peer Review
UMHAT	University Multidisciplinary Hospital for Active Treatment
RAWTF	Radioactive Waste Treatment Facility