

ANNUAL REPORT 2018



NUCLEAR
REGULATORY AUTHORITY
OF THE SLOVAK REPUBLIC

ANNUAL REPORT 2018

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NUCLEAR
REGULATORY AUTHORITY
OF THE SLOVAK REPUBLIC

DEAR READERS,

Nuclear Regulatory Authority of the Slovak Republic has built a position of an independent, professionally skilled and internationally recognized regulator of nuclear safety throughout its existence, the 25th anniversary of which we celebrated in 2018.

As in previous years, in 2018 we devoted ourselves to creating a legislative environment for peaceful use of nuclear energy, review and assessment of safety documentation, control of ensuring nuclear safety at license holders, international activities in the area of our competence and last but not least, communication with the public.

We have reviewed and assessed documentation relating to nuclear installations that are operated, under construction, in decommissioning, as well as nuclear installations designed for radioactive waste management. Equally important were the review and assessment activities in the field of physical security of nuclear materials and in the field of emergency planning and preparedness. The Authority also acts as a special Building Office for the constructions of nuclear installations and structures related to nuclear installations, so we also performed activities in this area.

In 2018, the Authority issued 370 Decisions. Of this number, majority of the decisions, namely 124 decisions concerned the nuclear power plant under construction, Mochovce 3&4. The cold hydro test was successfully completed in August 2018 on Unit 3 of this power plant. Subsequently, in December 2018, the hot hydraulic test was started, one of the most important tests to be carried out on nuclear installation as part of the preparation for commissioning. ÚJD SR approved the program of hot hydrotest, which included requirements for preparedness of equipment and systems before the hot hydrotest, a detailed description of the course of the hydrotest and success criteria for individual tests of equipment that are carried out during a hot hydrotest. Following that the Authority closely monitored, in a form of inspections, the preparation and the course of the hot hydraulic test, the completion of which was scheduled for March 2019. Important milestones in the process of preparation for the commissioning were the permissions, issued through ÚJD SR decisions, for an early use of the fresh fuel node and commissioning in the range of fresh fuel node, as well as the permission to handle nuclear materials in the fresh fuel node.

As regards inspection activity, nuclear safety inspectors carried out 200 inspections, while ÚJD SR did not have to

proceed to limit the scope or validity of the permit and did not stop the operation of any nuclear facility. After summarizing the results of inspections, and on the basis of summary assessment of safety indicators of ÚJD SR, it can be stated that in 2018 nuclear installations in the Slovak Republic were operated safely and reliably.

In the framework of international cooperation, in 2018 ÚJD SR fulfilled the tasks and obligations resulting from the membership of Slovakia in the EU. In 2018, the first ever topical peer review of nuclear power plants in the field of ageing management programs for nuclear power plants, was conducted. ÚJD SR, in cooperation with the operator, prepared and sent to the EC, the National Assessment Report of the Slovak republic for the Purposes of topical Peer Review on Ageing Management. The peer review fulfilled the objectives set out in the Council Directive 2014/87/Euratom, and we can say that the nuclear power plants in Slovakia were assessed very well. In general, areas for improvement for NPPs have been identified, but no major deficiencies.

Cooperation with international organizations in the field of peaceful uses of nuclear energy can also be seen in 2018, as in the previous years, as very successful.

At the end of May 2018, the 6th Review Meeting of the Parties to the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management took place at the headquarters of the International Atomic Energy Agency in Vienna. At this meeting, the Sixth National Report of the Slovak Republic was discussed, drafted in accordance with the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management. Representatives of the Parties to the Joint Convention, who were in the group together with Slovakia, highly rated the quality of the national report, its transparency, as well as the level of nuclear waste management in the SR, and also the amount of information provided.

In September, the 62nd IAEA General Conference was held, where I was taking a position of the President of the General Conference. ÚJD SR was the guarantor that there was competent representation in the plenary session, the plenary committee, at key accompanying events and bilateral and multilateral meetings throughout the entire meeting of the IAEA GC.

At the end of this summary of our activities I would like to thank my colleagues – all employees of the ÚJD SR, for their active work in the benefit of the Authority, because it was mainly thanks to their efforts that we have achieved our goals.

1. LEGISLATIVE ACTIVITY

In 2018, the Nuclear Regulatory Authority of the Slovak Republic (ÚJD SR) worked on drafting of three new decrees. In January 2018, the ÚJD SR Decree No. 9/2018 Coll., amending and supplementing Decree No. 55/2006 Coll. on details of emergency planning in the event of an incident or an accident as amended by Decree No. 35/2012 Coll. with effect from 1 February 2018, was published in the Collection of Laws. In February 2018, the ÚJD SR Decree No. 76/2018 Coll., laying down special materials and equipment that fall under regulation by ÚJD SR with effect from 1 April 2018, was declared in the Collection of Laws. This year also initiated the legislative process of amending Decree No. 33/2012 Coll. on periodical, comprehensive and systematic assessment of nuclear safety of nuclear installations as amended by Decree No. 106/2016 Coll.

In accordance with the document "Time schedule and focus of work in drafting of new Atomic Act", as approved by the ÚJD SR Chairperson's meeting on 26 October 2018, an expert group began working on the new Atomic Act with the aim of submitting the draft law for inter-ministerial commenting procedure in November 2019.

ÚJD SR has also prepared a number of safety guides to ensure compliance with the requirements for the safe use of nuclear energy or the performance of activities related to the uses of nuclear energy, some of the safety guides are under development. In 2018, the safety guide BNS I.4.5/2018 Requirements for Safety of Nuclear Installations in relation to natural hazards, was issued. At the same time, the internal process of preparing further drafts of safety guides is under way, which ÚJD SR plans to release in 2019.

In connection with the adoption of the Act No. 305/2013 Coll. on electronic form of performance of powers of public authorities and on amendments and supplements to certain laws (Act on e-Government), which came into force on 1 November 2013, at ÚJD SR a project team continued to work on a task to identify the tasks, propose their solution in ÚJD SR and ensuring the practical application of the Act on e-Government to the day-to-day processes of ÚJD SR, to which this Act applies.

In the course of 2018, ÚJD SR continued to coordinate the cooperation of entities concerned within the inter-ministerial working group on civil liability for nuclear damage. The cen-

tral task of the working group was to evaluate the results of an international workshop held in October 2017, and to monitor developments in the field of civil liability at international level. ÚJD SR also consistently assessed the existence of insurance cover for both license holders (SE, a. s., and JAVYS, a. s.).

In other legislative activities, ÚJD SR actively participated in the inter-ministerial coordination group for representation of the Slovak Republic before the EU courts at the Ministry of Justice of SR (MS SR) and in the inter-ministerial coordination group in the proceedings before the European Commission (EC) in the pre-trial stage at the Ministry of Foreign and European Affairs of SR (MZVaEZ SR). In 2018, no active case was registered in any working group, in which the Slovak Republic would act in the area of powers of ÚJD SR.

In 2018, ÚJD SR continuously provided assistance to the Ministry of Environment of SR (MŽP SR) in the process with respect to the Aarhus Convention and the Compliance Committee in continuation of the case of NPP Mochovce 3&4 (ACCC/C/2013/89). Decision VI/8i in case ACCC/C/2013/89 on compliance of the Slovak Republic with its commitments adopted under the Aarhus Convention contains the following recommendations:

- For the Slovak Republic to take the necessary legislative, regulatory and administrative measures and practical procedures to ensure that when providing access to information related to nuclear issues under Article 2 par. 3 of the Convention, it has all the grounds for its refusal within the meaning of Article 4, par. 4 of the Convention interpreted restrictively, so as to take into account the public interest justifying its disclosure, and whether this request for information relates to emissions into the environment;
- For the Slovak Republic to:
 - (a) submit to the Committee a detailed Progress Report as at 1 October 2018, as at 1 October 2019 and as at 1 October 2020, containing the measures taken and the results achieved in the implementation of recommendations;
 - (b) submit further information to the Committee at its request, in connection with the assessment of Slovakia's progress in implementing the recommendations;
 - (c) attend (either in person or through videoconferencing) meetings of the Committee to assess the progress of the party concerned in the implementation of recommendations.

In 2018, ÚJD SR prepared a Progress Report in accordance with paragraph (a), which according to the schedule, was submitted on 24 August 2018 to the MŽP SR. Upon completion and review of the Report by the MŽP SR, the Progress Report was sent to the ACCC Secretariat on 1 October 2018.

In the framework of inter-ministerial commenting procedures, ÚJD SR sent more than 500 opinions on draft legislative and non-legislative materials.

2. REGULATORY ACTIVITIES

2.1. ISSUE OF LICENSES

In order to obtain license for activities in the area of peaceful use of nuclear energy, the applicant must prove its ability to comply with and fulfil all requirements laid down by the laws and decrees in force in the Slovak Republic, in particular the requirements of the Atomic Act and ÚJD SR implementing decrees to this Act. In addition, the applicant must demonstrate that the nuclear installation (NI) will be or is operated safely.

In addition to the license holders, which are Slovenské elektrárne, a. s. (SE, a. s.) and the Nuclear and Decommissioning company (JAVYS, a. s.), ÚJD SR also supervises and issues permits for other legal entities and organizations that do not operate energy NIs, but perform activities related to the peaceful uses of nuclear energy in accordance with the Atomic Act. One of the representatives of these license holders is VÚJE, a. s., which specializes in training of NI staff, research, design and implementation activities related to NIs and nuclear materials (NM).

2.2. REVIEW AND ASSESSMENT ACTIVITIES

Nuclear safety of NIs is demonstrated by documentation that proves that its systems, components and technological equipment, including the ability of their operators, are capable of operating safely and reliably, both during normal and extraordinary operation, and that the NI's impact on employees, population, environment and on property is at an acceptable level of recognized international standards.

In 2018, ÚJD SR assessed and reviewed documentation related to, in particular with:

- Implementation of work on completion of NPP Mochovce 3&4, including modifications to the basic design;
- Implementation of design modifications on safety related equipment;
- Quality of planned pre-operational and operational controls;
- Construction proceedings at NIs;
- Design modifications and changes to documentation assessed or approved by ÚJD SR,
- Quality assurance for safety related equipment and NIs,
- The system of connecting all four Units of NPP Mochovce into the Power System of SR at 400 kV and 110 kV;

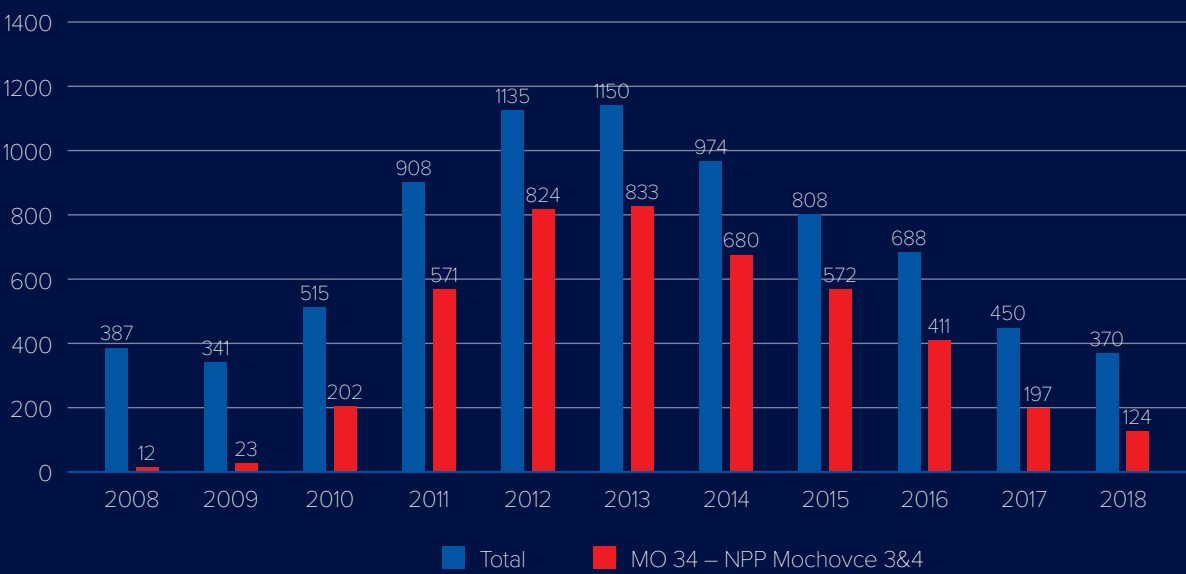
- Quality Management Systems of license holders under the Atomic Act and their suppliers;
- Limits and Conditions (L&C) for safe operation and safe decommissioning,
- Emergency Planning,
- Training of selected staff and professionally competent staff, holders of permits for operation and decommissioning of NIs;
- Organizational changes at license holders;
- Plans of physical protection of operated NIs;
- Transport of nuclear and radioactive materials;
- Radioactive waste (RAW) management at NPP Bohunice A-1 and other NIs intended for RAW management,
- Assessment of documentation for decommissioning of large scale components of NPP Bohunice V-1.

In connection with the completion of Units 3&4 of Mochovce NPP, in 2018, ÚJD SR also carried out post-assembly conformity checks aimed at verifying the compliance of installed technological equipment with the design and approved quality requirements. The quality management system documentation and quality requirements of safety related equipment were assessed in accordance with the relevant ÚJD SR decrees. The approved quality requirements for safety related equipment were also checked by ÚJD SR during final acceptance tests directly at the manufacturers of these facilities. ÚJD SR participated in tests carried out during cold and hot hydrotest of Unit 3 of Mochovce NPP.

Table 1 Number of ÚJD SR Decisions issued in 2018

Organization / Nuclear installation	Operation	Design modifications	Quality assurance	Building Authority	Licence	Suspended admin. proceeding	Discontinued admin. proceeding	Other	Total
SE, a. s.	5	0	3	0	0	2	5	9	24
NPP Bohunice V-2	19	1	24	0	1	2	4	3	54
NPP Mochovce 1&2	22	5	16	4	0	6	2	10	65
NPP Mochovce 3&4	6	0	101	0	1	10	1	5	124
JAVYS, a. s.	19	1	2	7	7	10	0	21	67
VÚJE, a. s.	4	0	0	0	1	0	0	11	16
Other organizations	0	0	1	0	5	4	3	7	20
Total	75	7	147	11	15	34	15	66	370

Fig. 1 Number of ÚJD SR Decisions issued in the period 2008-2018



2.3. INSPECTIONS

Inspection activities are carried out by nuclear safety inspectors of ÚJD SR and it is understood as a process, by which compliance with requirements and fulfilment of obligations stipulated in the Atomic Act and its implementing decrees, the Building Act and its implementing legal regulations, fulfilment of obligations arising from the ÚJD SR Decisions, as well as fulfilment of measures to remedy the deficiencies from the protocols, are being checked. The schedule of planned inspections is set out in the Inspection Plan, which is designed to allow continuous and systematic evaluation of compliance with legislative requirements. Thus, ÚJD SR prepares the Preliminary Inspection Plan for three years, as well as the Inspection Plan for the relevant year. In addition to the scheduled inspections, inspectors also carry out unscheduled inspections, which are triggered by the condition in the NI (for example, construction and installation, commissioning stages) or by operational events. Unscheduled inspections include inspections of the International Atomic Energy Agency (IAEA) in the area of registration and control of NM, the date of which is notified to ÚJD SR and the relevant license holder immediately prior to the inspections itself.

There were 158 inspections scheduled for 2018, of which 4 were cancelled due to objective reasons. In 2018, there were 46 unscheduled inspections.

A total of 200 inspections were carried out, of which 15 were closed with a protocol, 8 inspections are still in progress, and the rest were closed in a form of a record (Table 2).

Table 2 Overview of inspections performed

Nuclear Installations/Other	Team	Special	Routine	Un-scheduled	Total
NPP Bohunice V-2	10	16	4	3	33
NPP Mochovce 1&2	12	18	6	7	43
NPP Mochovce 3&4	1	11	4	9	25
JAVYS, a. s.	6	19	8	5	38
VUJE, a. s.	0	2	0	0	2
NM & RAW transport	0	3	0	8	12
Control and registration of NM	0	26	0	12	38
Other inspections	0	8	0	1	9
Total	29	103	22	46	200

2.4. LAW ENFORCEMENT

In case the inspection activity proves deficiencies in one of the areas under regulation, the protocol from the inspection contains an order for the license holder to remedy the deficiencies with binding deadlines for their fulfilment. The license holder is then obliged to notify ÚJD SR of the method and the deadline for removal of the deficiency.

If the entity under regulation fails to comply with the measures, as well as in the event of a material breach of the provisions of the Atomic Act or the requirements of its implementing decrees, ÚJD SR may initiate administrative proceedings that may result in:

- Imposing a fine,
- Limitation of the scope or validity of the license,
- Imposing necessary measures,
- Stopping the operation of NI,
- Withdrawal of the certificate on special professional competence or certificate of professional competence permanently.

In 2018, ÚJD SR did not limit the scope or the validity of a license, and did not stop the operation of any NI. It imposed two fines on SE, a. s., in the sum of Euro 200,000.

3. NUCLEAR SAFETY OF NUCLEAR INSTALLATIONS

3.1. NUCLEAR POWER PLANTS IN OPERATION

a) Nuclear Power Plant Bohunice V-2

In 2018, at both Units of NPP Bohunice V-2 in operation there were standard, scheduled and unscheduled inspection and assessment activities, connected with the daily operation of the NPP. In the period from 11 May until 19 June 2018, the general overhaul was carried out (GO) on Unit 4, and in the period from 24 June until 13 July 2018 the GO was performed on Unit 3.

Based on the results of periodic nuclear safety assessment (PNSA) conducted in 2017, the aim of which was a comprehensive review of NPP Bohunice V-2 in terms of compliance with the Slovak legislation and international safety standards, as well as in terms of design modifications made with the intention of increasing the safety level of NI, the license holder implemented corrective actions stated in the Final Report of ÚJD SR from PNSA. In this Report, ÚJD SR identified the findings and ordered measures to remedy them. ÚJD's Report from PNSA is published in full on the website of ÚJD SR.

Operational Controls

Operational controls were carried out by the operator in accordance with the annual plans of operational controls of safety related equipment, which the operators submit to ÚJD SR. The results of operational controls showed a satisfactory condition on both Units.

GO on Unit 3 of NPP Bohunice V-2 for refuelling was extended by one day compared to the plan. GO on Unit 4 of NPP Bohunice V-2 for refuelling was longer by 2 days. The extension was caused by a leak repair on the seal of the main circulation pump No. 42, which was indicated during the start-up of the Unit after the GO. During the Unit outage, the fall of foreign object into open technology was recorded. The license holder found that it was pieces of paint. During inspection of the core after refuelling, a foreign object was also indicated on Unit 3, which was a piece of wire with 1 mm diameter and 4 cm long. Objects were removed from the technology.

The operator also provides for assessment of fatigue of the main components and piping systems, as well as the assessment of resistance of materials of the reactor pressure vessel against brittle fracture. The assessment shows that neither fatigue life, nor the results of analyses in the area of embrittlement of reactor pressure vessels, limit their life and are a prerequisite for their long-term operation of both Units. The hermetic zone tightness tests (PERIS) on both Units showed that the tightness of hermetic areas is in accordance with the L&C requirements, as well as according to applicable operating regulations. The hermetic areas are constantly monitored and the program for leak removal is being fulfilled.

ÚJD SR carried out inspections aimed at verifying the implementation of: operational controls, tests and maintenance of safety related equipment of electric systems and instrumentation and control systems (I&C), operating non-destructive tests (NDT), inspections of welded joints of safety related equipment carried out during operation, as well as during planned GOs on Units. Inspectors carried out an unscheduled inspection of post-assembly checks of conformity of selected machinery, electric and I&C equipment. ÚJD SR imposed corrective actions to remove deficiencies from the protocols from inspections.

Among other, ÚJD SR carried out inspections aimed at checking the operation after refuelling. During the checks inspectors found a discrepancy between the number of heat-exchange tubes of steam generator No. 43 indicated for blinding due to material loss and the number of actually blinded tubes. This was brought to the attention of the license holder and inspectors requested adoption of corrective actions. The license holder subsequently decided to shut-down the Unit and blind the remaining number of indicated heat-exchange tubes.

Operational Events

The number and nature of events in 2018 was within the framework of normal operating failures without special significance for nuclear safety. ÚJD SR registered 6 operational events subject to reporting to the regulatory authority.

One case of reactor scram occurred in NPP Bohunice V-2. During the planned outage of Unit 3 for refuelling during cooling of the primary circuit, the scram 1 (AO1) was activated on the already shutdown reactor. Activation was caused by the increase in pressure difference on the steam generator (SG) No. 4. During the gradual replacement of impellers of the main circulating pumps (MCP) there was an increase in mean pressure drops on all components of the primary circuit (PC). Loop No. 4, due to shape and dimensional variations, exhibits an increased pressure drop value compared to other loops. Since the above event occurred at NPP Bohunice V-2 repeatedly, it was also subject of ÚJD

SR inspection. The inspection identified deficiencies and imposed corrective actions.

There were no other safety relevant events at NPP Bohunice V-2.

After summarizing the results of inspections and on the basis of summary assessment of safety indicators ÚJD SR stated that the operation of both Units of NPP Bohunice V-2 in 2018 was without serious shortcomings in nuclear safety. Identified operational failures had no special relevance for nuclear safety. The deficiencies identified during inspections were removed and corrective actions taken to minimize the likelihood of recurrence.

b) Nuclear Power Plant Mochovce 1&2

In 2018, ÚJD SR inspectors performed a standard inspection and assessment activity, connected with the daily operation of NPP. GO at Unit 1 was carried out from 17 April until 6 May and at Unit 2 from 15 September until 30 October. In the course of the year, NPP Mochovce 1&2 implemented measures from the Action Plan for safety improvement of Units of NPP as a lesson from the event at Fukushima Daiichi NPP. Measures were taken based on the results of stress tests.

The final stage of the seismic reinforcement project of important piping of the primary circuit at Unit 2 was implemented by installing viscous dampers, as well as seismic reinforcement of the storage tanks of demineralised water system for super-emergency water supply (SEWS) for SGs. The project of supplementing 400 kV switches on Unit 2 was completed. During GO at Unit 2, the Project of Electric and I&C binding change at the 6 kV switchgear outlets was implemented. As part of the I&C innovation, they installed a new system of controlling HRK assemblies on Unit 2 and upper level equipment of program and technical complex of reactor internals control system on Units 1&2. Particular attention was paid by the inspectors to the preparation, progress and results of the "Integral leak and strength tests for hermetic areas – ISTAP", which aimed to confirm sufficient strength and tightness of the hermetic envelope of Unit 2 for maximum design accident conditions. ISTAP was completed with satisfactory results.

In addition, the license holder performed PNSA. Based on the results of this assessment, a final report was prepared. The results were subject of inspection by ÚJD SR.

Operational Controls

On Units 1&2 of NPP Mochovce the operator carried out operational controls in accordance with the annual plans of operational controls of safety related equipment that are submitted to the ÚJD SR. The results of operational controls confirmed satisfactory condition on both Units. The

operator submits to ÚJD SR annual assessment reports on the lifetime utilization of the main components and safety related important piping routes. The reports show that the monitored parameters of all assessed safety related equipment, as well as the condition of materials of reactor pressure vessels are well below the set limits. Due to the two-year cycle of tightness tests and strength of the hermetic zone (HZ), only local tightness tests of the HZ were performed on Unit 1 and an integral tightness and strength test (ISTAP) of HZ was performed on Unit 2. The tightness and strength tests of the hermetic zone (PERIS) on both Units have shown that the tightness of hermetic areas is in compliance with the L&C requirements, as well as in accordance with the valid operating regulations; it is constantly monitored and improving. The system for detection and subsequent removal of identified leaks is functional.

In 2018, ÚJD SR inspectors carried out planned inspections aimed at verifying the implementation of operational inspections, tests and maintenance of safety related electric equipment and I&C, operational NDT checks of welded joints of safety related equipment realized during operation and during scheduled GO of Units and unscheduled inspection of a post-assembly conformity checks on selected mechanical, electric and I&C equipment on Unit 2. ÚJD SR imposed corrective actions to remove the deficiencies stated in the protocols from inspections.

The team inspection started PNSA, the aim of which is a comprehensive review of NPP Mochovce 1&2 in terms of compliance with the Slovak legislation and international safety standards, from the view of performed design modifications aimed at enhancing the safety level of NIs.

Operational Events

The number and nature of events in 2018 was within the framework of normal operating failures. ÚJD SR registered 6 events that are subject to reporting to the regulator.

Based on the results of inspections and assessment activity of ÚJD SR, the operation of NPP Mochovce 1&2 in 2018 was evaluated as safe. The identified operational failures were of no particular significance for nuclear safety, and corrective actions were taken to minimize the likelihood of recurrence.

3.2. NUCLEAR POWER PLANTS UNDER CONSTRUCTION

Nuclear Power Plant Mochovce 3&4

Cold hydrotest was successfully completed at Unit 3 of NPP Mochovce 3&4 in August 2018. Subsequently, the affected facilities and systems were subjected to the prescribed maintenance interventions and controls as part of a minor revision. At the same time, emergency diesel generators



were successfully tested, as well as the system of back-up inventory of coolant intended for beyond-design basis accidents. Gradual handing over of other lines of electronic fire-fighting system and stable fire extinguishing systems continued. The physical protection system was tested for functioning. Installation of the common diesel generator was completed and its testing started. The main circulation pumps of the primary circuit, including all auxiliary systems have been run for the first time. Excore system installation was completed, detectors were mounted in the channels of ionization chambers and functional tests were successfully performed on the system. The system of reactor internals measurements and diagnostic systems have also been tested. Installation activities were completed on the systems of conventional part. Construction work-in-progress has been completed as well. In December 2018, the hot hydrotest on Unit 3 was launched, one of the most important tests to be performed on NIs in inactive conditions prior to the fuel loading into the reactor core. It is a comprehensive test involving the majority of the primary equipment and systems of the nuclear unit, including reactor with loaded imitators of fuel assemblies (without nuclear fuel) and part of systems of inactive secondary circuit of the Unit. ÚJD SR has approved a hot hydraulic test program, which included conditions for its launch (equipment and system readiness requirements for hot hydrotest), a detailed description of the hydrotest and success criteria for individual equipment tests, to be performed during hot hydrotest. At the same time, ÚJD SR closely monitored – in a form of inspections - the preparation and the course of the hot hydraulic test, which was scheduled for March 2019. Further, by means of ÚJD SR decisions, an authorization was issued for an early use of the fresh fuel node and commissioning within the scope of the fresh fuel node, as well as authorization to dispose NM in the fresh fuel node. An appeal was filed against ÚJD SR decisions by one of the parties. ÚJD SR sent a notification to all parties to the proceedings of a lodged appeal with request for a statement. The case was referred to the second instance administrative authority, which according to the Code of Administrative Procedure of SR is the Chairperson of ÚJD SR. The appeal is still pending. At Unit 4, the technology installation, cable laying and installation of switchgears have been underway.

ÚJD SR regularly checked and evaluated the state of NIs under construction, the quality of installation of safety related equipment, post-installation checks of assembled technological units or parts thereof, as well as fulfilment of conditions for beginning of testing of systems, course of tests whether on site or directly at the manufacturer during acceptance tests of safety relevant equipment. In terms of preparation of Unit 3 for commissioning, ÚJD SR considers the insufficient preparedness of part of equipment of the secondary circuit, the testing of which was not subject of the hot hydrotest, to be a limiting factor. This secondary cir-

cuit equipment does not belong to safety systems, or safety relevant systems, but are needed for a smooth start-up of the Unit. Work on this equipment is in delay, which may eventually lead to a shift in the date for start of commissioning of Unit 3.

3.3. NUCLEAR POWER PLANTS IN DECOMMISSIONING

a) Nuclear Power Plant Bohunice A-1

Similarly, as in 2017, also in 2018 there was work realized in NPP Bohunice A-1 related to stage 3 and 4 of decommissioning, in accordance with the ÚJD SR Decision No. 369/2016, which issued an authorization for both stages simultaneously in one authorization procedure. The works associated with the aforementioned decommissioning stages are planned for the end of 2024, and focus on continued treatment of liquid RAW, sludge from the long-term storage and casings for the long-term storage of spent nuclear fuel (SNF). The license holder continued in activities related to decommissioning of original, non-functional and unused technological systems of external objects and technological equipment of objects of the main generating reactor block and interim hall. After their completion, the final 5th stage of decommissioning, which is scheduled for 2033, will follow immediately.

In the course of 2018, ÚJD SR assessed the documentation related to modification and use of piping routes and associated tanks for pumping chrompic – the original cooling medium for fuel cells. ÚJD SR also issued an opinion on the implementation of drainage of sludge residues of organic coolant – Dowtherm from storage cases (PDS) to the respective storage tank (MSN).

The scheduled inspections at NPP Bohunice A-1 focused on checking compliance with nuclear safety conditions and requirements of the regulator for decommissioning of NPP Bohunice A-1 and for disposal of RAW from decommissioning. In the framework of the inspections, a check of the measurement of parameters demonstrating the correct functioning of equipment for RAW management was carried out. There was one unscheduled inspection to investigate how the event on the melting vessel of the facility for chrompic vitrification (VICHR) was addressed. Inspectors did not find any non-compliance with the requirements of the Atomic Act, and had no reservations as to the identification of causes of this event and corrective actions adopted by the license holder. The decommissioning of NPP Bohunice A-1 in 2018 was implemented according to stage 3 and 4 of decommissioning. After summarizing the results of inspections and on the basis of summary assessment of safety indicators, ÚJD SR stated that activities at NPP Bohunice A-1 were carried out without serious shortcomings in the field of nuclear safety.



b) Nuclear Power Plant Bohunice V-1

ÚJD SR by its Decision No. 900/2014 granted JAVYS, a. s., an authorization for 2nd stage of decommissioning of NPP Bohunice V-1, and at the same time permit for RAW management and for management of NM during stage 2 of decommissioning of this NI. Authorization came into effect on January 1, 2015. 2nd stage includes mainly the decommissioning of objects of the main generating block, the auxiliary building and the remaining auxiliary objects. The most important activities are dismantling of reactors, dismantling of primary circuit equipment, and dismantling of other facilities in the controlled zone and outside the controlled zone, their decontamination and radiation control.

In 2018, ÚJD SR issued decisions for the project of Dismantling of large-scale components of the primary circuit and for the project Dismantling systems in the controlled zone of NPP Bohunice V-1 – Part 1. Further it issued decision to approve the commissioning of High-capacity Fragmentation and Decontamination facilities at NPP Bohunice V-1. This year, the stage 1 of dismantling systems of the auxiliary building and cooling towers demolition were completed.

The final part of 2nd stage of decommissioning of NPP Bohunice V-1, according to the submitted documentation, is expected by 2025, while the final state of the site at the end of 2nd stage will be the release of the site for limited use. After the final inspection, it will be released from the operation of the Atomic Act.

The scheduled inspections at NPP Bohunice V-1 were focused on checking compliance of the state of decommissioning with the state described in the plan for the stage 2 of decommissioning of NPP Bohunice V-1, and on checking compliance with the conditions of nuclear safety and the regulator's requirements for decommissioning.

Decommissioning of NPP Bohunice V-1 in 2018 was realized according to the plan for 2nd stage of decommissioning. ÚJD SR did not register any operational events with particular impact on nuclear safety.

3.4. OTHER NUCLEAR INSTALLATIONS

a) Interim Spent Fuel Storage Facility Jaslovské Bohunice (ISFS)

ISFS Bohunice is used for temporary storage of SNF from NPP Bohunice V-1 (finished production of SNF), NPP Bohunice V-2 and NPP Mochovce 1&2. As at 31 December 2018, the ISFS was filled up to approx. 87.7% of its total capacity.

In the course of 2018, the assessment activity focused on the evaluation of the state of operational controls of building and technological parts, systems of ISFS Bohunice and the disposed SNF.

There were two inspections of SNF storage as part of the inspection activity in ISFS Bohunice. The purpose of the inspections was to check compliance with the L&Cs and the operating regulations for the operation of individual equipment. There was no case of breach of conditions of nuclear or radiation safety and operating regulations. Based on the results of inspection activity, in 2018 the operation of ISFS was evaluated as safe.

In 2018, preparatory works continued on the project to expand the storage capacity of the ISFS.

b) Technology for RAW Treatment and Conditioning (TSÚ RAO)

TSÚ RAO includes two bituminisation lines, Bohunice Radioactive Waste Treatment Centre (BSC RAO), a fragmentation line, a high-capacity decontamination line, a treatment plant for used air conditioning filters, a wastewater treatment station and RAW storages. Bituminisation lines are designed for treatment of radioactive concentrates from NPP operation into 200-liter drums, which are inserted into fibre-concrete containers (FCC) prior to their final disposal. The processing technology of bituminisation lines includes a discontinuous bituminisation line (DBL), used to fix sorbents to the bitumen matrix. BSC RAO serves as a centre for final treatment of RAW before it is deposited in the National Radioactive Waste Repository in Mochovce (RÚ RAO). In addition to cementation, for treatment and conditioning of RAW also incineration, fragmentation, high-pressure compacting and increasing the concentration by evaporation, are used. The resulting products of RAW treatment and conditioning are inserted into FCCs, which meet the conditions for disposal in the RÚ RAO in Mochovce.

In 2018, the construction of a facility for melting metallic RAW from decommissioning of NPP Bohunice A-1 and NPP Bohunice V-1 in Jaslovské Bohunice site continued. The purpose of melting facility is to achieve maximum release of metallic materials into the environment and to minimize RAW determined for final disposal at RÚ RAO in Mochovce.

Inspectors continuously reviewed and approved modifications to the TSÚ RAO, which led to the optimization of the RAW management system for the needs of all types of produced RAW.

In the course of 2018, ÚJD SR created conditions for maintaining a functioning and safe system to ensure the necessary RAW transfers between individual technologies and NIs through type approval of transport equipment and issuing of transport permits.

In particular, ÚJD SR inspections focused on checking the safe operation of individual processing lines and on the control of RAW storage. Based on the results of control activity, in 2018, the operation of TSÚ RAO was assessed as safe.



c) National RAW Repository, Mochovce (RÚ RAO)

The National RAW Repository in Mochovce is designed for disposal of low level waste (LLW) and very low level radioactive waste (VLLW) from operation and decommissioning of NIs. ÚJD SR issued a Decision in 2018, approving L&Cs of safe operation of RÚ RAO and Reasoning for L&Cs of safe operation of RÚ RAO.

Disposal of LLW in FCCs to the second double row was standard. By the end of 2018, total of 5,474 FCCs have been disposed, of which 316 FCCs in 2018. In the section for disposal of VLLW, in 2018, 4,184.5 m³ of handling packages with VLLW (MEVA drums and large volume bags) were disposed, in total there is 7,361.5 m³ of VLLW.

In 2018, inspection activities in RÚ RAO focused mainly on the control of disposal of FCCs and large-volume bags in RÚ RAO, the inventory of RAW disposed, the current state of RÚ RAO extension, the control of monitoring data on RÚ RAO, and the control of RAW treatment to FCCs. Based on the inspection activities of ÚJD SR, in 2018 the operation of NI RÚ RAO Mochovce can be evaluated as safe, with negligible impact on the environment.

d) Final Treatment of Liquid RAW, Mochovce (FS KRAO)

The purpose of FS KRAO facility is the final treatment and conditioning of liquid RAW (radioactive concentrates, saturated sorbents and sludges) produced in NPP Mochovce, certain types of solid RAW from operation of said power plant units, and conditioning of treated solid RAW from other NIs. The capacity of technological lines exceeds the production of RAW from Mochovce nuclear units. FS KRAO operates technologies for treatment of radioactive concentrates by bituminization in a film rotor evaporator and concentration on the concentration evaporator. The discontinuous bituminisation line is used for fixing radioactive sorbents. Then such treated RAW is conditioned on a cementation line into FCCs, which are then disposed at RÚ RAO.

In 2018, inspection activity at FS KRAO focused on checking compliance with the conditions of nuclear safety and regulatory requirements for RAW management, RAW minimization, and also on checking the sampling methods, analysing and storing representative samples for documenting and evaluating RAW management. Based on the results of the inspection activities of ÚJD SR, in 2018 the operation of FS KRAO was evaluated as safe.

e) Integral RAW Storage Facility

Integral Radioactive Waste Storage Facility (IS RAO) in Jaslovské Bohunice site is another one of the completed projects from the Bohunice International Decommissioning Fund – BIDSF, implemented as part of the decommissioning process at NPP Bohunice V-1. In December 2017, the licensing procedure was completed in connection with commissioning of IS RAO as a stand-alone NI, allowing primary long-term safe disposal of RAW that cannot be disposed in the RÚ RAO in Mochovce. Based on the results of inspection activity, in 2018, the operation of IS RAO was evaluated as safe.



4. NUCLEAR MATERIALS

4.1. NUCLEAR MATERIALS

ÚJD SR is a state authority responsible for the performance of regulatory activities in the field of NM management and their registration and control. NM under the jurisdiction of SR may be used only for peaceful purposes and in accordance with the authorization from ÚJD SR, which is issued only to applicants, who demonstrate the ability to manage NM in accordance with applicable legislation and international obligations of SR. The National System for Registration and Control of NM, resulting from international obligations, by which Slovakia is bound, it is an important instrument in the field of safeguards for NM, the introduction of which is the first step in the use of nuclear energy.

International obligations result from the Treaty on the Non-Proliferation of Nuclear Weapons and the resulting Nuclear Safeguards Agreement. Since the Slovak Republic's accession to the EU it is also the trilateral safeguards agreement between the IAEA, the European Atomic Energy Community and the Slovak Republic and its Additional Protocol. At the same time, the Slovak Republic is obliged to comply with the requirements of the EU legislation arising from the Euratom Treaty and related legislation, such as the Commission Regulation (Euratom) No. 302/2005 on the application of the Euratom safeguards system. UN Security Council Resolution No. 1540/2004 also obliges UN member states to adopt transparent measures to increase nuclear non-proliferation control in the field of nuclear energy use. These measures aim to prevent the illicit trafficking of NM and other nuclear items.

Registration and Control of Nuclear Materials

ÚJD SR maintains a national system for the registration and control of NM under the Atomic Act. Details on the keeping of records and control of NM are given in Decree No. 54/2006 Coll. on registration and control of NM, and on notification of selected activities. In order to simplify compliance with the ÚJD SR requirements by the regulated organizations, ÚJD SR has issued safety guide "Registration and Control of NM". The safety guide concerns the performance of control and registration of all NM located in the territory of SR, and are under its jurisdiction. An effective system of registration and control of NM is a basic prerequisite for independent verification of NM in the Slovak Republic by ÚJD SR, IAEA and Euratom inspectors.

This verification confirms that NM has not been misused for undeclared purposes, and that NM has not diversified for non-peaceful purposes.

The performance of inspection activities in the area of registration and control of NM continued in the mode of Integrated Safeguards, which are an optimal and effective combination of all safeguards activities. In 2018, the process of a new approach of the IAEA towards the Slovak Republic, the so-called state level approach, was completed.

In 2018, ÚJD SR carried out 38 inspections as part of its inspection activities in the area of registration and control of NM. Of these, 16 separate inspections were carried out by ÚJD SR inspectors without the participation of the IAEA, or Euratom. Four inspections of this number were focused on the control of loading nuclear reactor cores and 11 inspections covered the area of control and registration of NM for license holders for handling NM outside the NI. 22 inspections were carried out with the participation of the IAEA and Euratom. Of this number, 14 inspections were carried out at NI and 8 inspections were carried out at license holders for handling NM outside of NI, focusing on control of physical inventory of NM.

The activity of ÚJD SR also includes control and processing of registration reports sent to ÚJD SR by license holders, which are then entered into the national system of registration and control of NM, while also checking the correctness of data. ÚJD SR is responsible for keeping records of NM in the area of the WSXZ material balance, where there are 46 holders of permit for handling NM outside of NI. ÚJD SR sends registration reports to Euratom every month for the given area of material balance.

In addition, ÚJD SR as part of its competencies is also responsible for the timely sending of reports prepared on the basis of the requirements of Article 2 of the Additional Protocol to the trilateral safeguards agreement, to Euratom and the IAEA. In 2018, ÚJD SR sent 12 such reports. These reports are another confirmation of the fact that only activities related to the peaceful uses of nuclear energy are carried out in Slovakia and that the non-proliferation commitments are respected.

Activities of registration and control of NM include issuance of permits for handling NM. In 2018, 3 permits were issued for handling NM outside of NI pursuant to Section 5 par. 2 (n) of the Atomic Act.

Based on the results of inspections carried out and checking of registration and operational records of holders of permits it was stated that the SR has a functional system of NM registration and adheres to international obligations in this area.

NM Shipments

Regulatory activity in securing nuclear safety during shipments of NM has been performed in accordance with the Atomic Act, Decree No. 57/2006 Coll., amended by the Decree No. 105/2016 Coll., and international standards and recommendations.

During the evaluated period, shipments of fresh nuclear fuel (FNF) from the Russian Federation to NPP Bohunice and NPP Mochovce took place. The transport of FNF was carried out by rail transport. In 2018, SNF shipments from NPP Bohunice V-2 and from NPP Mochovce to ISFS Bohunice took place. In addition to ÚJD SR, JAVYS and SE, also other organizations were involved in the preparation of these shipments – Police Corps of SR, Crisis Management Section of Ministry of Interior of SR (MV SR), Chief Hygienist of the Sector of the Ministry of Transport and Construction of SR, Fire and Rescue Corps, Railways of the SR and other. Nuclear Safety and physical protection during shipments were ensured according to applicable legislation.

In 2018, ÚJD SR inspectors carried out 11 inspections of all FNF and SNF shipments. The inspectors did not find any significant deficiencies during inspections of NM shipments. The conditions required by law and ÚJD SR decisions were complied with.

All NM shipments were made in accordance with the shipping plans and no incidents occurred.

Illicit Handling of Nuclear and Radioactive Materials

The fights against the illicit handling of NM is international in nature, and various national authorities coordinate their actions to prevent and detect illicit trafficking in NM and they also engage in cooperation with international organizations. Illicit trafficking of NM is an international crime and international cooperation allows its early and successful detection. Cooperation is developed with the IAEA, the Joint Research Centre in Karlsruhe, but also with Interpol and Europol. Cooperation with the United States under the Joint Action Plan of the Government of the Slovak Republic and the US Government to Combat Illicit Handling of NM and Radioactive Materials and Related Technologies also continues.

As part of this cooperation, ÚJD SR experts attend conferences, working meetings and courses and joint exercises are organized. An important part of this cooperation is exchange of information. At international level, the information exchange is provided by the Incident and Trafficking Database operated by the IAEA in Vienna. At present, 138 countries from around the world, including Slovakia, contribute to this database. Early exchange of information contributes to increasing the effectiveness of combating illicit trafficking of NM.

Control of Fresh and Spent Nuclear Fuel Storage

NPP Bohunice V-2, NPP Mochovce 1&2 and NPP Mochovce 3&4. No serious deficiencies were found in NPP Bohunice V-2 and NPP Mochovce 1&2, and the operation of FNF storage facilities and SNF pools was assessed as safe, in accordance with the requirements of the Atomic Act, L&Cs and the relevant regulations. In NPP Mochovce 3&4, inspectors checked the state of preparation of documentation necessary for granting permission for handling NM and operation of FNF storage facility. The inspectors physically checked the readiness of the facilities and support systems of FNF storage facility. Staff and technology readiness meets all statutory conditions for receiving NM to NPP Mochovce 3&4. There is no nuclear fuel yet in NPP Mochovce 3&4.

In 2018, no serious deficiencies were found during inspections of the storage of FNF and SNF at NI.

4.2. PHYSICAL SECURITY OF NUCLEAR INSTALLATIONS AND NUCLEAR MATERIALS

Physical protection (PP) consists of a set of technical, regime or organizational measures necessary to prevent and detect unauthorized activities with NIs, NM, special materials and equipment for RAW and SNF management, transport of radioactive materials, as well as to prevent unauthorized access to NI and sabotage.

The obligations of the Slovak Republic in the area of physical protection of NM arise from the accession to the Convention on Physical Protection of Nuclear Materials, signed by the Government of the Czechoslovak Socialist Republic on 8 February 1987. In 2005, an Amendment to the Convention on Physical Protection of Nuclear Materials was adopted in Vienna, which entered into force on 8 May 2016.

According to the Amendment to the Convention on Physical Protection of Nuclear Materials, one of the fundamental principles is the G Principle: "Threat". This principle says that "Physical protection provided by the State should be based on the State's current assessment of threat". Government Resolution No. 229/2009 adopted the document "Proposal for determination of threat by nuclear installation and for nuclear installations and nuclear materials within the design based threat to the State". This document is the basis for determination of the design-based threat for NI. On the basis of this Government Resolution, the Chairperson of ÚJD SR established a permanent inter-ministerial working group to update the determination of threats by nuclear installation and for nuclear installations and nuclear materials within the design based threat to the State. The working group actively worked also in 2018, when in addition to updating the document "Determination of threat by nuclear installation and for nuclear installations and nuclear materi-

als within the design based threat to the State”, which was submitted to the Chairman of the Security Council of SR for information, it also updated the design based threat to NI, regular re-evaluation of the threat, operative solution of situations arising from incidents both in Slovakia and abroad, having impact on the physical protection of NM and NIs.

PP requirements for NM and NI for SR are defined by the Atomic Act, in the ÚJD SR Decree No. 51/2006, laying down the details of requirements for ensuring PP and the requirements for PP during shipments of radioactive materials, in the ÚJD SR Decree No. 57/2006, laying down the details of requirements during shipments of radioactive materials, and ÚJD SR Decree No. 105/2016, amending and supplementing ÚJD SR Decree No. 57/2006.

ÚJD SR focused its regulatory activity in the field on the control of operation of technical systems of PP, the level of regime protection in NPP Bohunice V-2, NPP Mochovce 1&2, JAVYS and NPP Mochovce 3&4, and the provision of PP during shipments of FNF and SNF.

PP of the premises was in the entire period under assessment provided in NPP Bohunice V-2 and NPP Mochovce 1&2 by a private security service “SE Protection and Security Mochovce” and by the Police of SR (emergency police unit). In JAVYS, the regime protection is provided by a private security service Bonul, s. r. o.

In NPP Bohunice V-2, ÚJD SR focused its inspection activity on the activity of the PP system. Provision of PP was in line with the approved Physical Protection Plan of NPP Bohunice V-2.

In JAVYS, in the course of the year, ÚJD SR reviewed and approved several changes to plans of PP of individual NIs located in Bohunice site, as well as the Physical Protection Plan for NPP Mochovce 1&2. Provision of PP was in compliance with the approved plan and its previous amendments approved by ÚJD SR

PP in RÚ RAO site was also in 2018 in accordance with the approved documents “Physical Protection Plan for RÚ RAO Mochovce” and its amendments.

In 2018, ÚJD SR, in connection with the commissioning of NPP Mochovce 3&4 in the range of handling and storage of FNF in the fresh nuclear fuel node, approved with its Decision No. 154/2018 “Physical Protection Plan for fresh fuel node of MO3&4”. ÚJD SR Decision No. 260/2018 approved the “Physical Protection Plan for SE-MO3&4”, in which ÚJD SR assessed the technical, regime and organizational measures to ensure physical protection in connection with the commissioning of Unit 3 of NPP Mochovce 3&4. Further, ÚJD SR assessed and approved the Physical Pro-

tection Plans for shipments of SNF from NPP Mochovce to the ISFS that were made in March 2018.

At the site and with the participation of ÚJD SR representatives, quarterly exercises of PP services were organized, verifying its system effectiveness. In 2018, interoperability exercises took place also at the premises of the Service Water Pumping Station Kozmálovce, and Pumping and Filtration Station Pečeňady. Exercises were focused on the response and coordination of activities of all components of PP to the situation. The preparedness of the license holder’s staff, the operators of the PP control centres, PP components (private security services provided by SE Protection and Security Mochovce, BONUL, s. r. o., and the Police of SR) to respond to the simulated situation, as well as verification of the system of the connection and communication between the individual services, were evaluated.

In 2018, ÚJD SR conducted inspections focusing on the physical protection of NI and NM, and on the physical protection during shipments of FNF, SNF and of uranium concentrate. The inspection activity was, in accordance with the ÚJD SR inspection procedure, focused on performance of regime protection, the way of performing checks for entry and driveways for vehicles, comparing the state of technical means of the PP system with the applicable legislation and with the state agreed in the documentation for individual NIs.

ÚJD SR inspectors carried out 15 inspections focused on the PP of NI, NM, RAW, as well as on ensuring PP during shipments of radioactive materials.

In addition, the inspectors also carried out 4 inspections focusing on the culture of nuclear physical safety. The term nuclear safety culture is one of the fundamental principles outlined in the Amendment to the Convention on Physical Protection of Nuclear Materials, which states that the priority of all organizations involved in the implementation of PP should be a nuclear safety culture, its development and maintenance, to ensure its effective implementation throughout the organization.



5. COMPETENCE OF A BUILDING AUTHORITY

ÚJD SR performs the competence of a Building Authority pursuant to Act No. 50/1976 Coll. on Spatial Planning and Building Regulations (Building Act) for structures of NI and structures related to NIs located in the premises delimited by the borders of NI. This means permitting structures, construction modifications, maintenance works, issuing decisions on the use of buildings and removal of buildings.

For NPP Bohunice V-2, a building permit was issued for an Electric Boiler V-2, which is a new source for steam supply and for providing ancillary services of Secondary Power Regulation.

In the premises of NPP Mochovce 1&2, ÚJD SR initiated and then suspended the administrative proceedings for a building permit for the seismic reinforcement of a turbine hall, a diesel generator station of Unit 1, an essential service water pumping station and a fire water system. The reason for suspension was that MŽP SR did not deliver its binding opinion. As part of the seismic reinforcement of the main generating dual unit to a new value of seismic load, ÚJD SR issued building permits for the reactor hall and the longitudinal electrical building.

In JAVYS premises, NPP Bohunice V-1 building permits were issued as part of modification of the power plant and installation of new equipment for supply of cooled water for the HVAC facilities of ISFS, energy meters and supply of demineralized water to ISFS, and at NPP Bohunice V-2, for the construction of ISFS pumping station for pumping saturated sorbents to PK/SK container, entrance gate to

the ISFS pumping station and installation of piping routes for collection regeneration and decontamination solutions in ISFS, for completion of SNF storage capacity and relocation of utility networks in the compressor station, in the nitrogen station at ISFS, for piping systems of V-1, the fire water supply to ISFS, for dismantling of large-scale components of the primary circuit, a part of facility of dry fragmentation workplace; for the project Modification of Drainage of Contaminated Water from ISFS. For the use of the structure, permits were issued (building approval decisions) to complete storage capacity for SNF, relocation of utility networks at the nitrogen station in ISFS, relocation or development of a new part of the piping system. In addition, permits were issued to remove the building of the compressor station of the nitrogen station at the ISFS, switchgear building for the release of the area for construction of dry ISFS- part of building, dismantling of activated part of concrete from reactor shafts of Units 1&2 of NPP V-1, and dismantling piping systems, including dismantling piping routes.

For other NIs administrative proceedings was initiated and then suspended to change the finished construction of Optimization of RAW Incineration Capacities due to dissenting binding opinion of MŽP SR, and administrative proceedings for authorizing use of the building (building approval decision) Dismantling of the systems of the auxiliary building, which has been suspended due to not delivered binding opinion of the MŽP SR.

For SE, a. s., NPP Mochovce 3&4, permit was issued for an early use of the building for the fresh fuel storage facility.



6. EMERGENCY PLANNING AND PREPAREDNESS

The Atomic Act defines emergency preparedness as the ability of the license holder and the public authorities to activate and implement activities and measures that lead to the detection and effective coping with incidents or accidents at NIs or during shipments of radioactive materials and to effectively suppress their potential to endanger the life, health of staff or the population, their property or the environment. This ability should be documented in the emergency plans.

In addition to operational regulations, the license holders have also emergency plans, where the main one is the internal emergency plan required by the legislation for NIs in operation and also in decommissioning. This plan, as well as the preliminary internal emergency plan currently in force on the territory of the units under construction at Mochovce site, is approved by ÚJD SR. Other emergency plans assessed by ÚJD SR, are emergency traffic rules and population protection plans. Elaboration of an emergency traffic rules is a condition for obtaining a permit for transport of radioactive materials. Population protection plans address the issue of implementing measures aimed at protecting the life and health of the population after the occurrence of a radiation incident or accident. These are issued by the District Offices, whose territory is located within the emergency planning zone of NI, and MV SR for the whole territory of the Slovak Republic.

In the field of emergency preparedness, ÚJD SR deals with inspection activity at NIs of license holders. In 2018, the individual inspections focused mainly on checking the course of shifts emergency exercises, reviewing the activities of organization of emergency response during interoperability exercises with the public administration, reviewing the system of trainings and drills of emergency plans, as well as the control of drills of emergency traffic rules. Also the timeliness of the related and follow-up documentation to the valid emergency plans was checked. In 2018, ÚJD SR conducted a joint inspection aimed at periodic assessment of nuclear safety of NI Mochovce. In the area of emergency preparedness, ÚJD SR focused mainly on measures taken to prevent accidents and mitigate their consequences, including verifying the application of principles of in-depth protection. In connection with the prepared changes in the organizational

structure of the license holder, SE, a. s., in the following years in the field of emergency preparedness, ÚJD SR will need to concentrate mainly on the potential impact of these changes on the ability of the license holder to cope with incidents on NIs in accordance with the most stringent international requirements in the area of nuclear safety.

To provide for receiving and sending warning, notification and other information in the event of nuclear accident or radiation threat (such as, for example, incidents or accidents at NIs, during shipments of radioactive substances, seizures of radioactive materials, lost and found materials or theft of ionizing radiation sources) in Slovakia, or similar events abroad, ÚJD SR has a liaison office, which is composed of designated group of ÚJD SR staff. As part of liaison office, ÚJD SR closely cooperates with MV SR, Public Health Authority of SR, Ministry of Transport and Construction SR, Slovak Hydrometeorological Institute (SHMÚ), Ministry of Foreign and European Affairs SR, Ministry of Defence SR, Financial Headquarters SR and SIS. In the interest of a unified procedure, ÚJD SR issued a common guideline for the public administration authorities, which regulates the procedure for mutual information in the event of occurrence or detection of an incident related to ionizing radiation sources, obligations to inform the population and international community about major events connected with the use of ionizing radiation sources, as well as criteria for informing liaison office. In the event of an incident on NI on the territory of SR or an incident abroad with a cross-border influence, ÚJD SR is also the competent authority for requesting assistance through the IAEA.

ÚJD SR staff is assigned to Emergency Headquarters (EHQ) for work in the Emergency Response Centre (ERC). ERC was established at ÚJD SR for independent evaluation of events that may arise during operation of NI or during shipments of radioactive materials. ERC is a technical support facility of ÚJD SR for dealing with extraordinary events at NI and EHQ is an advisory body to the Chairperson, who is a member of the Security Council of SR and the Central Crisis Staff. The activity of EHQ consists of assessing the progress and consequences of incidents and accidents at NIs serious in terms of their potential impact on the environment, preparation of proposals and recommendations for measures to protect the population. On the basis of information received, the individual groups of ÚJD SR ES are able to analyse the state of NI and to prepare a prognosis for the development of the incident using support software tools. These activities are described in the emergency regulations issued by ÚJD SR and are regularly drilled.

EHQ members participate in license holder's exercises at ERC every year, exercises with the neighbouring countries and international organizations. In 2018, ÚJD SR ES practiced its emergency procedures during shifts and interop-

erability emergency exercises of license holders. Also the international exercise ECUREX, organized by the European Commission (EC) and also series of IAEA ConvEx exercises required an active participation of ÚJD SR. In particular, international exercises are aimed at testing and assessing the ability of individual member states to respond promptly to radiation incidents with cross-border consequences.

In addition to exercises, ÚJD SR maintains communication with relevant partners in the field of emergency preparedness in neighbouring countries mainly through meetings at the IAEA and other international platforms (e.g. OECD/NEA, HERCA). Also last year ÚJD SR mediated data transmission from the radiation monitoring in the vicinity of Mochovce for the Hungarian state authorities.

The emergency preparedness of ÚJD SR, as well as activities of ERC were presented at the 21st international conference "Medicine of Disasters" held in Tatranské Matliare. In addition to this conference, ÚJD SR communicated on a regular basis with the public administration authorities involved in the nuclear accident response system. Although ÚJD SR and the license holders regulated by it are ready to fulfil all the requirements of the Slovak legislation and international conventions, the results of exercises, various workshops, working meetings, as well as consultations with the relevant partners, point to the need to develop a Population Protection Plan of SR, part of which should also be documentation of radiation protection measures. The absence of this plan and the definition of competencies, responsibilities and procedures for dealing with a nuclear or radiation accident in SR or outside the SR with possible impact on the territory of SR can significantly complicate the successful and rapid cooperation of individual ministries and public administration authorities.



7. INTERNATIONAL ACTIVITIES

7.1. EUROPEAN AFFAIRS

Cooperation within the European Atomic Energy Community (Euratom)

In the context of the membership of the Slovak Republic in the European Atomic Energy Community (Euratom), ÚJD SR covered the European agenda on the peaceful uses of nuclear energy throughout the year 2018, ensured the tasks and fulfilled the obligations resulting from this membership. Representatives of ÚJD SR regularly participated in meetings of the working groups of the EU Council, as well as in meetings of working committees and groups of the European Commission, where they defended the interests of Slovakia as experts in the areas related to the ÚJD SR competencies, especially in relation to obligations and activities resulting from the Treaty establishing the European Atomic Energy Community (Euratom Treaty).

One of the most important working groups of the Council of the EU in terms of nuclear safety is the Working Party on Atomic Questions (ATO). In 2018, the WP ATO held eleven meetings. In the first half of the year Bulgaria chaired the meetings (BG PRES), in the second half year it was Austria (AT PRES). In the context of the preparation of the EU's multiannual financial framework after 2020, two important documents were submitted to this working group. The first is the Proposal for a Council Regulation establishing a European Instrument for Nuclear Safety Complementing Neighbourhood Instrument and Development and International Cooperation under the Euratom Treaty. The European Instrument for Nuclear Safety aims to promote the introduction of efficient and effective nuclear safety standards in third countries based on experience gained from nuclear safety activities within the Euratom community. In accordance with the mechanism of cooperation within the framework of European Affairs of ÚJD SR pursuant to with the Government Resolution No. 627/2013, ÚJD SR experts drafted and submitted to the inter-ministerial commenting procedure and for approval the preliminary opinion on the given draft. The second important document is the Proposal of a Council Regulation laying down a specific program for the financing of decommissioning of nuclear installations and radioactive waste management, which includes continuing to support EU funding for decommissioning of NPP Bohunice V-1. Further, in 2018 the WP ATO did the preparations and discussed the 6th Review Meeting on the Joint

Convention on the Safe Management of Radioactive Waste and Spent Nuclear Fuel, which was held in the spring at the IAEA headquarters in Vienna. At the end of the year, during the AT PRES, discussions started on the draft Council Conclusions on the results of thematic assessment under Council Directive 2014/87/Euratom on nuclear safety, which will continue also in 2019.

Throughout 2018, the European Nuclear Safety Regulators Group (ENSREG) in cooperation with the EC, has prepared, coordinated and subsequently evaluated the historically first topical peer review (TPR) by the Euratom member states on the topic of nuclear power plants ageing management. The TPR meeting took place in May 2018 in Luxembourg. In this respect, ÚJD SR, in cooperation with the operator, developed and sent to EC the National Assessment Report on Aging Management of Nuclear Power Plants. The priority of the Slovak Republic during the meeting was to defend the report in this area and to respond satisfactorily to all questions raised. The assessment included 16 Euratom member states with nuclear power plants and/or research reactors of 1 MW and more, including Norway, Ukraine and Switzerland. More than 2,300 questions were raised, of which 115 were for Slovakia. Also the public had the opportunity to join the process. Five specific areas were evaluated, namely aging management programs, power cables, concealed pipes, reactor pressure vessels and containment concrete structures. TPR fulfilled the objectives set out in Council Directive 2014/87/Euratom. NPPs in Slovakia were rated very well. In general, areas of improvement for NPPs have been identified, but no major deficiencies. The final version of the Final Report was endorsed by the ENSREG group in October 2018. By September 2019, the member states, including SR, are to develop National Action Plans to address findings and results, in order to further improve the quality of aging management of NPPs, as well as research reactors. The experience gained in this process will be taken into account in the preparation of the next topical assessment, which will take place in 6 years on the set topic.

Other activities within the ENSREG and its subgroups in 2018 aimed at continuing to monitor the measures taken and implementing recommendations resulting from the peer reviews as part of the Stress Tests (Action Plan) implemented after the nuclear accident in Fukushima. Slovakia continuously implements and fulfils all set recommendations.

In January 2018, the EC published the second Report of the Commission to the European Parliament and the Council on the implementation of Council Directive 2006/117/Euratom on regulation and control during shipments of RAW and SNF by the member states that the EC developed on the basis of national reports of the member states, including Slovakia. The report covers shipments for a period 2012 – 2014.

In August 2018, ÚJD SR sent the second National Report of the Slovak Republic to the EC in accordance with the relevant provisions of the Council Directive 2011/70/Euratom establishing a Community framework for responsible and safe management of SNF and RAW. Slovakia fulfils all its obligations under this Directive.

Regarding the Integral Storage Facility for Radioactive Waste in Jaslovské Bohunice, general data were notified to the EC pursuant to Article 37 of the Euratom Treaty, which were drafted in accordance with the relevant schedules to the Commission Recommendations 2010/635/Euratom. Subsequently, the EC issued a positive opinion in November 2018. In April 2018, JAVYS, a. s., forwarded to ÚJD SR general data pursuant to Article 37 of the Euratom Treaty on Completion of Storage Capacity of Interim Spent Fuel Storage in Jaslovské Bohunice with request for their notification to the EC. The documentation was reviewed, after which request was raised to re-work and complete it. After completion, the documentation will be sent to EC in 2019.

In the course of 2018, the inter-ministerial coordination group continued to coordinate the tasks arising from Articles of the Euratom Treaty, which was established at ÚJD SR on the basis of Government Resolution No. 442/2006. Two meetings were held during the year, in June and in December 2018. At these meetings current topics (such as, for example, Brexit, transposition of Council Directive 2013/59/Euratom, results of the first thematic review meeting under the Council Directive 2014/87/Euratom, and other) were discussed, and recommendations were adopted for the implementation of the Euratom Treaty.

7.2. COOPERATION WITH THE IAEA

The cooperation with the IAEA based in Vienna plays the most important role in the field of international cooperation, given its political, professional and international importance and a wide range of technical cooperation and assistance opportunities. In 2018, five meetings of the IAEA Board of Governors (March, June, September – two sessions, November) were held, attended by the representatives of the ÚJD SR. In April and in November, a meeting of the Commission on Safety Standards took place, and in June meetings of committees for safety standards attended by the representatives of ÚJD SR and other experts from Slovakia. Slovak experts were involved in the work of IAEA expert groups. ÚJD SR representatives attended the Ministerial Conference on Nuclear Science and Technology (28 – 30 November 2018). From 17 to 21 September 2018, the 62th IAEA General Conference (GC) was held, attended by the Slovak delegation led by the Chairperson of ÚJD SR, M. Žiakova, who was elected as the President of the IAEA General Conference. Experts of SR were presented in plenary sessions, plenary committee, at key accompanying events, and bilateral and

multilateral meetings during the IAEA GC. From the point of view of interests of SR, EU and its partners, the course and results of the 62nd IAEA GC meeting can be evaluated positively. Conclusions and resolutions of the Conference will be reflected in the activities of the ministries concerned during the implementation of cooperation with the IAEA in the next period. In October 2018, information was submitted to the Slovak Government.

In 2018, tasks stemming from three national and about 30 regional projects were continuously fulfilled. Participation in workshops, training courses and meetings of 2018 – 2019 biennial projects was ensured. Designs of three national projects were prepared and forwarded to the IAEA for the biennial 2020 – 2021. In April and November 2018, meetings of the national coordinators (national liaison officers) took place to discuss regional projects for the next biennial (2020 – 2021).

A regular membership fee to the IAEA for 2018, a contribution to the IAEA Technical Cooperation Fund, as well as the National Participation Contribution (NPC) were paid on time and in full. Specific amounts are shown in Table 4.

ARTEMIS Mission

In recent years, several working meetings have been held on the issue of inviting ARTEMIS mission, which dealt with various aspects of ARTEMIS peer reviews, besides other, also the preparation of a methodical guidance and the methodology for conducting ARTEMIS. In November 2018, a representative of ÚJD SR participated in an international workshop in Luxembourg, where the experience of selected EU Member States with the IRRS and ARTEMIS missions was presented, and that is both separately (Poland) and in an integrated form (Spain). In connection with the knowledge gained, the representatives of individual ministries were informed about the latest development in this field at the meeting of the Interministerial Coordination Group for the coordination of tasks arising from the Articles of the Euratom Treaty and the strategic RKS for European affairs, held on 3 December 2018 at ÚJD SR. This activity was followed by a request from the National Nuclear Fund for the ARTEMIS mission to be invited already in the first half of 2021. During discussions held at ÚJD SR it was decided to take separate missions of IRRS and ARTEMIS missions, and that at the beginning of 2019, preparatory and coordination work will be launched in relation to ARTEMIS mission. According to Council Directive 2011/70/Euratom, the ARTEMIS mission should be invited by August 2023 at the latest.

7.3. COOPERATION WITH THE NUCLEAR TEST BAN TREATY ORGANIZATION (CTBTO)

In 2018, ÚJD SR continued to perform the tasks resulting from the conclusions of the previous meetings of the CTBTO Preparatory Commission and from the meetings of its working groups from the position of the national contact body with the CTBTO. ÚJD SR representatives attended several CTBTO meetings in Vienna: from 12 to 23 March 2018 at the 50th meeting of the Working Group B (WGB-50), from 2 to 3 July 2018 at the 50th meeting of the Preparatory Committee (PC-50), from 27 August to 7 September 2018 at the 51st meeting of the Working Group B (WGB-51) and from 7 to 9 November 2018 at the 51st meeting of the Preparatory Commission (PC-51).

On 7 February 2018, ÚJD SR representatives attended the 876th Plenary Session of the OSCE (Organization for Security and Cooperation in Europe) in Vienna, in the context of the Slovak Presidency of the OSCE Security Cooperation Forum (SCF) during the first four months of 2018. ÚJD SR Chairperson in her address in SCF summarized the cooperation between ÚJD SR and the CTBTO Preparatory Commission and declared the readiness and the interest of ÚJD SR to continue in active cooperation, mainly through organization of other exercises and trainings for future CTBTO inspectors in the Slovak Republic. Slovakia has been actively involved in these activities for a long time – so far, 8 international field exercises have been conducted in our territory, which took place in the military area “Turecký vrch”, and one course for surrogate inspectors in the Training Centre Lešť (TC Lešť).

ÚJD SR has been actively involved in the process of preparing for the entry into force of the CTBT Treaty. The activities of Slovakia in this respect are mainly related to the participation of ÚJD SR in the completion of the CTBTO verification system, in particular through the scientific cooperation of ÚJD SR with the Slovak academic institutions in the field of seismology, and thanks to the pro-active efforts of ÚJD SR representatives to organize CTBTO training in our territory. In February 2018, ÚJD SR provided a visit of TC Lešť for the CTBTO representatives, during which the staff of TC Lešť presented the upgraded premises of the training centre. In response to this visit, CTBTO asked ÚJD SR to submit a financial offer to organize two CTBTO exercises, in spring and autumn 2020 in TC Lešť. In August 2018, the CTBTO officially confirmed its interest in organizing these exercises in our territory through an acceptance letter.

ÚJD SR paid the regular membership fee to the CTBTO for 2018 on time and in full. The specific amount is shown in Table 4.

7.4. COOPERATION WITH THE NUCLEAR ENERGY AGENCY AT THE ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT (OECD/NEA)

ÚJD SR, as the coordinator of cooperation with OECD/NEA on the basis of Government Resolution No. 245/2001 coordinates the cooperation between Slovakia and OECD/NEA, and ensures fulfilment of Slovakia's obligations arising from this membership.

On 19 and 20 April 2018, the 136th Meeting of the Steering Committee (SC) of the Nuclear Energy Agency at the OECD (OECD/NEA) was held, chaired by the Chairperson of ÚJD SR as the chair of SC. The most important point on the agenda was the information about the basic features of the forthcoming Program of Work and Budget (PWB) for the period 2019 – 2020, which was to be approved at the next SC meeting in October 2018.

On 30 and 31 October 2018, the 137th meeting of SC was held. The key point on the agenda of this meeting was the discussion on the proposed PWB of OECD/NEA for the period 2019 – 2020, which was to be adopted at this meeting. PWB was not adopted due to several open issues. Since the OECD Council did not adopt a decision on the PWB's methodology at its November meeting, the OECD/NEA Secretariat submitted a modified PWB document for approval by a written procedure, reflecting the requirements of some member states when creating a regular OECD/NEA budget, and was based on the zero nominal growth (ZNG) methodology. This proposal was accepted by the member states.

Slovak experts continued to be actively involved in the activities of all permanent technical committees of the OECD/NEA, as well as the activities of a number of working and expert groups. ÚJD SR continues to be engaged in joint OECD/NEA projects: Halden Reactor Project and THAI-3 Project.

Membership contributions for 2018 to the OECD/NEA, NEA Databank, Halden Reactor Project and THAI-3 project were paid on time and in full. Specific amounts are shown in Table 4.

7.5. FULFILMENT OF OBLIGATIONS UNDER INTERNATIONAL CONTRACTUAL DOCUMENTS

DThe Convention on Nuclear Safety (Convention)

ÚJD SR as the technical sponsor of the Convention, entrusted in accordance with Article 5, with the fulfilment of obligations under the Convention, prepares the update of the 8th National Report of SR, which will include basic information on how SR complies with the provisions of the Convention. The National Report of SR prepared in accord-

ance with the Nuclear Safety Convention will be submitted to the Government meeting by 20 June 2019, and its English version will be sent to the IAEA by 15 August 2019. This National Report will then be discussed at the 8th Review Meeting, which will take place at the IAEA Headquarters in Vienna, from 23 March until 3 April 2020.

The Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (Joint Convention)

From 21 May to 1 June 2018, the 6th Review Meeting of the parties to the Joint Convention was held at the IAEA headquarters in Vienna. At this meeting, the sixth National Report of the Slovak Republic was discussed, elaborated in accordance with the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management. The Report was presented and de-

fended by the Chairperson of ÚJD SR, Ms. Marta Žiaková. Representatives of the States Parties to the Joint Convention, who were in the group together with Slovakia, highly rated the quality of the National Report, its transparency and the amount of information provided, thus meeting the requirements of the Joint Convention. This National Report is published on the ÚJD SR's website (www.ujd.gov.sk).

The Treaty on the Non-Proliferation of Nuclear Weapons

Under the Agreement between the Kingdom of Belgium, the Kingdom of Denmark, Federal Republic of Germany, Republic of Ireland, Republic of Italy, the Grand Duchy of Luxembourg, the Kingdom of the Netherlands, the European Atomic Energy Community on the implementation of Article 3, par. 1 and 4 of the Nuclear Non-Proliferation Treaty and its Additional Protocol, inspections were carried out by



the Euratom and the IAEA inspectors. There was no breach of obligations found regarding Slovakia's commitments in the field of nuclear non-proliferation and the safeguards system.

7.6. BILATERAL COOPERATION

Bilateral cooperation is implemented at governmental level, in particular with the neighbouring states, and at the level of regulatory authorities supervising nuclear and radiation safety. ÚJD SR regularly organizes meetings with the representatives of governmental and other partner organization of neighbouring countries. In 2018, regular annual meetings were held between the chief representatives of ÚJD SR and the delegations of the neighbouring countries – Hungary, Czech Republic, Poland, Austria and Slovenia.

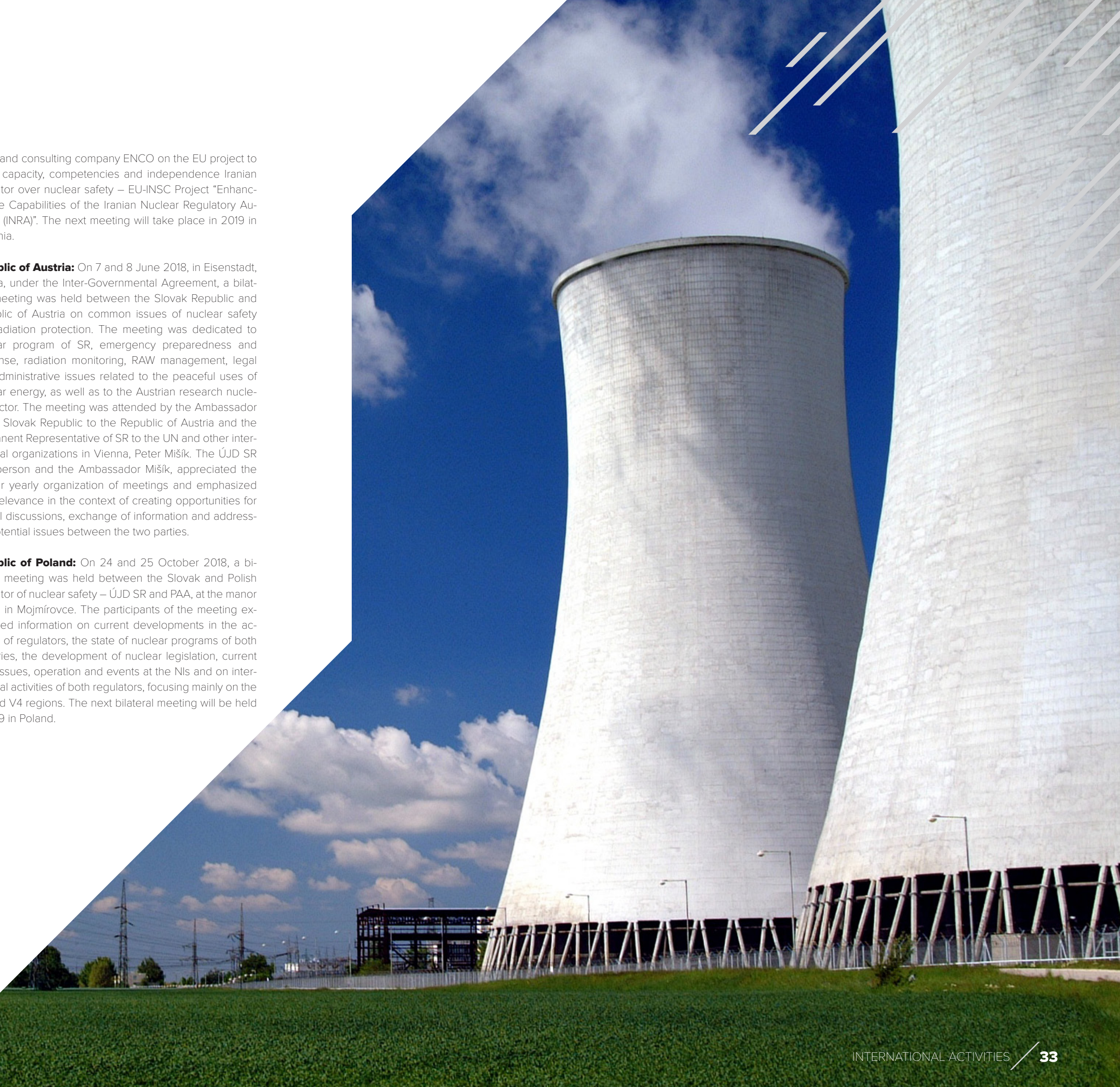
Czech Republic: On 20 and 21 March 2018, a regular bilateral meeting of state regulators over nuclear safety of the Slovak Republic and Czech Republic – ÚJD SR and SÚJB, was held in Bratislava – as part of cooperation governed by the Agreement between the Government of the Slovak Republic and the Czech Republic on cooperation in the area of state regulation of nuclear safety of nuclear installations and state regulation of nuclear materials. During the meeting, the participants – representatives of both Authorities, as well as invited experts from the department of health protection against radiation of the Public Health Office of SR – exchanged information on the latest activities of regulators in the field of legislation, inspection and supervision activities, on the operation and incidents at the NIs, as well as information from radiation protection. They also discussed issues of international cooperation primarily aimed at coordination of procedure in the working group for implementation of the Convention on Environmental Impacts Assessment in a Transboundary context (Espoo Convention). The next bilateral meeting will be held next year in the Czech Republic.

Czech Republic, Hungary and Slovenia: On 3 and 4 May 2018, a regular quadrilateral meeting of the four state regulators of nuclear safety – ÚJD SR, the Czech SÚJB, Slovenian Authority for Nuclear Safety (SNSA) and Hungarian Atomic Energy Authority (HAEA) took place at the HAEA offices in Budapest. During the meeting, participants exchanged information on developments and the latest activities in the field of their competence, incidents at NIs and related regulatory and implementation activities, regulatory activity related to new NIs, security issues and issues relating to protection, situation at European and international level (bilateral and multilateral relations with other countries and relations with international organizations), issues of communication with the public, etc. As in the previous year, this event was also used as a consultation meeting of the consortium made up of the representatives of all four regu-

lators and consulting company ENCO on the EU project to boost capacity, competencies and independence Iranian regulator over nuclear safety – EU-INSC Project "Enhancing the Capabilities of the Iranian Nuclear Regulatory Authority (INRA)". The next meeting will take place in 2019 in Slovenia.

Republic of Austria: On 7 and 8 June 2018, in Eisenstadt, Austria, under the Inter-Governmental Agreement, a bilateral meeting was held between the Slovak Republic and Republic of Austria on common issues of nuclear safety and radiation protection. The meeting was dedicated to nuclear program of SR, emergency preparedness and response, radiation monitoring, RAW management, legal and administrative issues related to the peaceful uses of nuclear energy, as well as to the Austrian research nuclear reactor. The meeting was attended by the Ambassador of the Slovak Republic to the Republic of Austria and the Permanent Representative of SR to the UN and other international organizations in Vienna, Peter Mišík. The ÚJD SR Chairperson and the Ambassador Mišík, appreciated the regular yearly organization of meetings and emphasized their relevance in the context of creating opportunities for mutual discussions, exchange of information and addressing potential issues between the two parties.

Republic of Poland: On 24 and 25 October 2018, a bilateral meeting was held between the Slovak and Polish regulator of nuclear safety – ÚJD SR and PAA, at the manor house in Mojmírovce. The participants of the meeting exchanged information on current developments in the activities of regulators, the state of nuclear programs of both countries, the development of nuclear legislation, current legal issues, operation and events at the NIs and on international activities of both regulators, focusing mainly on the EU and V4 regions. The next bilateral meeting will be held in 2019 in Poland.



8. PUBLIC RELATIONS

For ÚJD SR, communication and information for the public is one of the priority tasks, resulting from the mission of the Authority itself. The aim of communication with the public is to inform the domestic and foreign public about the activities of the Regulatory Authority and through current, objective and comprehensible information and open communication, to build confidence of the public towards ÚJD SR's activity. In order to increase the credibility and information of the public, ÚJD SR has developed its Public Communication Strategy.

As an objective and independent regulatory authority, the Authority constantly creates the conditions for ensuring public and media information, whether through press releases, news published on the website of ÚJD SR, but also through the Facebook social network profile. The ÚJD SR website also provides information for the international community in English. Laws and regulations in the area of nuclear safety and related legislation, as well as full text of safety guides, are published and updated. ÚJD SR publishes on the website the decisions, and also all administrative proceedings of ÚJD SR. In addition, ÚJD SR allows the public and the media to communicate through a special address on the website (info@ujd.gov.sk).

Pursuant to Government Resolution No. 346/2017 and fulfilment of Strategy and Action Plan for making accessible and use of the open data of public administration (OPEN DATA), ÚJD SR permanently makes accessible selected sets of open data, so-called datasets, on its website, as well as through an open data Portal, data.gov.sk. All purchase orders, contracts, invoices and the list of license holders are published in ÚJD SR datasets.

In 2018, ÚJD SR as the central body of state administration, answered questions sent according to Act No. 211/2000 Coll. on free access to information. ÚJD SR received and cleared 8 requests for information, of which it issued 2 decisions about non-disclosure of information in part.

The ÚJD SR website is also adapted for comfortable viewing of the site via mobile devices and tablets. Viewing the website of ÚJD SR is more compendious and clearer and access for the public is easier, which prefers mobile devices and tablets as the main information tools.

Since 2016, ÚJD SR has installed a touch information kiosk. At the kiosk it is possible to view administrative proceedings of ÚJD SR (closed and pending ones), and also decisions issued by ÚJD SR. Also website of ÚJD SR is available to public. The touch information kiosk is located at the ÚJD SR headquarters in Bratislava – before the entry to the building and is thus accessible to the public 24 hours a day.

ÚJD SR regularly answers questions from the public and media. As in previous years, also in 2018 the topic of completion of Units 3&4 of NPP Mochovce was the most asked question by the media. Of the 19 questions received by ÚJD SR from the representatives of Slovak and foreign media, 13 concerned the completion of NPP Mochovce 3&4. In order to provide the public with comprehensive and correct information, ÚJD SR also issued 2 press releases and the Chairperson of ÚJD SR provided the media 2 extensive interviews, also focused primarily on explaining the situation at the construction site of NPP Mochovce 3&4, and the manner of performing regulatory activities within the competence of ÚJD SR.

ÚJD SR deepens information of the public about its activity and mission in order to create favourable opinion as a professional and reliable regulator, which is a reliable source of information in the form of publishing information materials (annual reports, leaflets, educational videos).

ÚJD SR continues to communicate with the population living in the vicinity of NPPs. Representatives of ÚJD SR actively participated in the meetings of Civic Information Committees (OIK) at NIs in Bohunice and at NIs in Mochovce, at the meetings of ZMO Bohunice and Special Interest Regional Association of Towns and Municipalities Mochovce. Information on current issues in the field of nuclear safety in SR and abroad, as well as on activities of ÚJD SR were presented. Moreover, the mayors of municipalities have contact details to the Chairperson of ÚJD SR, with whom they can communicate directly, if they need information.



9. NUCLEAR REGULATORY AUTHORITY OF SR

9.1. ECONOMIC DATA

ÚJD SR as a budget chapter is connected to the state budget with its revenues and expenditures. From 1 January 2008, the Atomic Act introduced an obligation for license holders to pay annual contributions for the performance of state regulation of nuclear safety. Revenues for 2018 were budgeted for ÚJD SR in the amount of €8,696,000, the revenues budget was not adjusted during the year. The actual revenues reached € 9,285,662, of which administrative fees amounted to €9 259 412, capital income €7,950 and other non-tax revenues €18,300. The spending limit for 2018 was approved for ÚJD SR in the amount of €8,869,259. After budgetary measures, the expenditure limit was adjusted to €8,963,083. The total amount of expenditures for the activity of ÚJD SR as at 31 December 2018 reached an amount of €8,701,307. Of this, €8,520,806 was spent on financing current activities and €180,501 on procuring capital assets.

Table 3 Economic results for 2018

Item	Amount (in €)
Limit of revenues	8,696,000
Actual revenues in total	9,285,662
Of which:	
Administrative fees	9,259,412
Capital revenues	7,950
other non-tax income	18,300
Limit of expenditures	8,869,259
Actual expenditures in total	8,701,307
Of which:	
Current expenditures	8,520,806
Capital expenditures	180,501

In the area of current expenditures, there is a significant share of foreign transfers amounting to €1,012,816. These funds were used to pay membership fees to international organizations. Regular contributions are two current foreign transfers to the IAEA, a regular membership fee of €458,013 and a contribution to the Technical Cooperation Fund amounting to €131,924. Another contribution to the IAEA was a participation contribution of €8,177. In 2018, ÚJD SR also paid the contribution of the Slovak Republic to the CTBTO in the amount of €340,119, also contributions to the OECD/NEA – for program PART II an amount of €35,596, for PKL3 project an amount of €14,250, a contribution to the OECD/NEA/DATABANK – for program PART II an amount of €10,575. As a contribution for programs of scientific and technical cooperation a contribution for a program in the OECD Halden Reactor Project (OECD/HRP) was paid in the amount of €14,162.

Table 4 Foreign transfers to international organizations

Financial contributions to international organizations	Amount (in €)
IAEA – Membership fee	458,013
IAEA – Technical Cooperation Fund	131,924
IAEA - Participation contribution	8,177
CTBTO - Membership fee	340,119
OECD/NEA - Membership fee	35,596
OECD/NEA - PKL3 Project - Membership fee	14,250
OECD/NEA - Databank - Membership fee	10,575
Halden Reactor Project - Membership fee	14,162
Total	1,012,816

Domestic transfers of €42,934 were used to pay membership fee to a non-profit organization in the country, as a compensation to employees (for the first 10 days of sickness absence), as severance pay and retirement benefits.

For expert opinions, judgements and analyses, which are necessary in supporting the decision-making, licensing and inspection activities of ÚJD SR, budget means of €1,188,456 (i.e. by €402,100 more than in 2017) was spent.

For payroll, €3,497,798 was spent and health insurance and social security contributions represented €1,372,403.

Table 5 Current expenditures

Current expenditures	Amount (in €)
Foreign transfers	1,012,816
Expert opinions, judgements, analyses	1,188,456
Payroll (for 117 employees)	3,497,798
Statutory employee insurance	1,372,403
Domestic transfers	42,934
Goods and services	1,406,399
Total	8,520,806

To purchase goods and services necessary for the operation of ÚJD SR, funds amounting to €1,406,399 were spent. The basic breakdown of these expenditures results from the economic budgetary classification of expenditures and their use was as follows:

Table 6 Expenditures for goods and services in 2018

Item	Amount (in €)
Travel expenditures	175,885
Communication and energy	66,572
Material	130,744
Car park	38,320
Routine and standard maintenance of buildings and operational facilities	109,877
Rent for leased office space, garages, meeting rooms and equipment	53,860
Services (printing, reproduction, cleaning, translations, information, equipment revisions, trainings, advertising, catering, bank fees, allocation to Social Fund and other)	831,141
Total	1,406,399

Capital Expenditures

In the category of capital expenditures, ÚJD SR used budget means of €180,501 to procure capital assets as follows:

Table 7 Capital expenditures in 2018

Item	Amount (in €)
Purchase of copy machine	4,632
Software purchase	66,509
Communication infrastructure (switches, server, wiring)	31,351
Radio warning device for passenger car	2,530
Software reconstruction	75,480
Total	180,502

Budget means from a separate account Donations and Grants

Expenditures used from a separate account, Donations and Grants, in 2018 amounted to €13,532. The foreign grant funds from the SARNET project, the Iranian IRN3.0116 project and financial contribution from the IAEA.

Table 8 Spending in 2018 (in €)

	Budget (expense account)	Donations and Grants	Total
Current expenditures	8,520,806	13,532	8,534,338
Capital expenditures	180,502	-	180,502
Expenditures in total	8,701,308	13,532	8,714,840

9.2. HUMAN RESOURCE MANAGEMENT AND TRAINING

In 2018, ÚJD SR managed to create sufficient material, financial and information resources, as well as to strengthen human resources, to ensure a demanding process of reviewing and assessing documentation, but also inspection activity, particularly in connection with the completion of NPP Mochovce 3&4. In addition, ÚJD SR has personally strengthened the area of cyber security, which is becoming a highly topical issue. Quality human resources management is one of the basic prerequisites for achieving strategic goals and tasks of ÚJD SR and meeting the adopted nuclear safety policy.

Human resources management focused mainly on hiring and selection of new staff to provide for the current and future work activities, as well as on providing and deepening employee training in order to develop human potential and create an atmosphere of motivating employees to meet ÚJD SR goals.

For the year 2018, ÚJD SR had a budgeted total number of 126 employees, of which 110 jobs defined as civil service positions and other 16 positions specified for work in public interest. Also in 2018, one civil service position was temporarily delimited for posting to the Ministry of Foreign and European Affairs of SR.

The process of filling vacancies, both civil service positions, and positions for work in public interest, at ÚJD SR had a standardized form, in accordance with the Civil Service Act, and a Decree laying down the details of the selection procedure. Announcement of all selection procedures was through the register of selection procedures on the portal www.slovensko.sk. However, ÚJD SR also continues to use for publishing these vacancies on the website of ÚJD SR and the ÚJD SR Intranet. In cases of civil service positions for temporary civil service, with the lowest interest in these positions, ÚJD SR publishes these vacancies also through the most popular jobs portal <http://www.profesia.sk/>.

In 2018, ÚJD SR announced 22 selection procedures for filling vacancies or temporary vacancies in civil service positions, of which 18 were realized (1 selection procedure was cancelled due to administrative irregularity, 3 selection procedures were postponed for 2019). A total of 19 selection procedures were held in 2018, of which 1 selection procedure was announced still in 2017. There was no selection procedure to fill a position for work in public interest.

Of the total number of 13 announced internal selection procedures, 8 were unsuccessful due to the fact that there was no candidate from civil service staff of ÚJD SR. Based on 18 selection procedures, 9 vacancies or temporary vacancies in civil service positions were filled (of which there was no post of senior employee). Of the total number of 9 recruited civil servants, 4 of them entered permanent civil service filling the vacancies, 5 were recruited to temporary civil service (of which 1 to fill a position of an employee taking a leave and 4 employees deputizing during maternity or parental leave). In addition, 3 employees returned from parental leave and 5 employees took maternity or parental leave.

6 civil servants have ended their civil service employment in terms of positions of work in public interest, 1 employee terminated his employment based on agreement.

In terms of the total number of employees, ÚJD SR registered 119 employees as at 31 December, of which 104 were civil servants in service and 15 employees in work in public interest. In addition to that, 8 civil servants took maternity or parental leave or a time-off as at 31 December 2018. At the end of the year, 6 posts in civil service and 1 position of work in public interest remained vacant.

Representation of women as at 31 December 2018 was 54 and 65 positions are taken by men. The total share of employed women is 45.38%.

Table 9 Breakdown of inspectors as at 31 December 2018

	Total	Women	Men
Inspectors	78	24	54

The educational structure of employees also directly influenced the professional level of performance of activities of individual units of ÚJD SR. The educational structure shows that 89.92% of employees have university education and 10.08% has complete secondary education. As at the end of 2018, out of physically filled posts by men 98.46% have university education and for women the percentage share is 79.63%. This percentage of university educated staff is derived from the demanding work of ÚJD SR staff and exceeds the educational level of the Slovak population.

Table 10 Educational structure of staff as at 31 December 2018

Education level	University	Secondary vocational	Total
Women	43	11	54
Men	64	1	65
Total	107	12	119

In terms of age structure, the group of employees aged 51 to 60 years represents 18.49% of the total number of staff, employees aged 41 to 60 years represent up to 57.14% of the total number of staff, employees aged 18 to 40 years make up 26.89%, and the remaining 15.97% of the total number of staff fall within the category of employees over 61 years. This fact confirms the long-term trend that the process of state regulation also in 2018 was ensured primarily by employees having many years of professional experience, i.e. employees from 41 to 60 years and over 61 years of age, who together accounted for 73.11% share of the total number of staff. The average age of ÚJD SR employees as at 31 December 2017 was 47 years.

The share of senior staff represented 13.56% of the total number of staff.

Training and development of staff is another precondition for mastering the new challenges of the current demanding legal, economic and highly demanding technical environment, part of which is also nuclear energy sector. Nowadays education is one of the basic goals, but at the same time also to the requirements of the modern society. The requirements for knowledge and skills of an employee in a modern society are constantly changing, and in order for an employee to function as highly professional workforce, he/she must constantly deepen and expand his/her knowledge and skills. A separate chapter of education is informatisation of public administration and transparency of the regulator's activities, requiring active involvement of employees in solving new challenges that these areas bring. To this end, it is necessary to get acquainted with the new requirements and obligations of public authorities, which the employees have to fulfil.

The training program for all employees of ÚJD SR has been elaborated in the plan of continuing education of employees for 2018, which is an operative management act of ÚJD SR with a year-round content focusing on the training needs of all organizational units of ÚJD SR. In addition, ad hoc general and vocational training activities offered by different educational institutions were used. Training focused on all expert areas provided for by the ÚJD SR. In the course of the year, ÚJD SR staff, in addition to classical forms of education, also utilized other forms of education – flexible education, e-learning, information and communication technology in education, as well as education through the Education and Assessment Centre of the Government Office of SR, and by participating in many workshops and educational activities organized by international organizations, in particular by the IAEA in Vienna. Training and shaping work capabilities and skills becomes a lifelong process in ÚJD SR, because it must permanently take into account all current needs caused by the reality of changes.

In view of the above, also in 2018, ÚJD SR paid due attention to the training of all its staff, because civil service and work in public interest required high demands on the professional, expert and effective activity of the regulator's staff. Expenditures for training of staff were budgeted at €250,000, of which more than 65% was allocated to vocational training (mainly in the field of nuclear regulation), 10% was allocated to language training, more than 6% to management training, 6% to training in information technology, and 2% to personal development. It is clear from the above that ÚJD SR places great emphasis on a highly specialized vocational training of staff in the fields of competence of ÚJD SR, through which inspectors and surrogate inspectors gain the necessary knowledge and skills to perform permitting, assessment, evaluation and inspection activity. Financial resources were allocated separately also for IT training. However, due attention is also paid to specialized staff and other employees, so that their training is continuous and current due to ongoing changes in legislation and in public administration.

Adaptation of new employees was ensured through adaptation training and mentoring, i.e. through assigned mentor, completed by 8 civil servants. In the framework of adaptation training, the new employees acquire the basic skills needed to perform civil service in the relevant sector of civil service.

ÚJD SR also paid due attention to language training, the aim of which was to acquire and develop foreign language skills of ÚJD SR staff. Language training (English and Russian language) involved more than 50% of employees. In addition, the Service Office also pays due attention to the official language and provides regular trainings to strengthen knowledge in the area of form and content of official document and language culture in the Slovak language.

ÚJD SR, as an independent central body of state administration achieved with the quality of work of its employees a status, which is highly positively valued in the domestic environment, but also abroad, which proves the high expert level and professionalism of the regulator's staff.

9.3. DEVELOPMENT OF REGULATORY ACTIVITIES

Maintaining a high expert level and professionalism of the regulator's staff is also supported by the application of results of science and research at ÚJD SR, and exchange of experience and knowledge within the active participation of ÚJD SR in various international expert teams.

ÚJD SR is involved in the research project of the US Nuclear Regulatory Commission (US NRC) in the field of severe accidents. Thanks to its participation in the project, ÚJD SR has access to the US computational program MELCOR (MELting CORe) and its supplementary tool MACCS (MELCOR Accident Consequence Code System). It is used for verification calculations of severe accident analyses submitted by the license holders to ÚJD SR as part of administrative proceedings. During project working meetings its members exchange experience and knowledge in the field of severe accidents mod-

elling and evaluation of NI response to such accidents. They also inform each other about modifications of NIs, whose aim is to prevent potential accidents or to mitigate their consequences.

ÚJD SR also gains experience and technical information by participating in international projects and working groups of the OECD/NEA. It supports the THAI-3 project, which examines the behaviour of fission products in the reactor containment spaces and the possibilities for risk mitigation related to the production of hydrogen during accidents and its burning or explosions. The Project will be completed in July 2019. The OECD/NEA working groups organize various international conferences, seminars and working meetings aimed at addressing current issues of safety of NIs, exchange of experience and mutual assistance. ÚJD SR experts are actively involved in the preparation and assessment of many expert papers, proposals and concepts. This contributes to their further professional growth, information and exchange of knowledge and experience in the field of nuclear safety enhancement.

ÚJD SR also helps in the development of nuclear regulatory bodies of other countries as part of international cooperation in the area of nuclear safety. Examples of such assistance are EC projects in support of the Iranian Nuclear Regulatory Authority (INRA), in which ÚJD SR is involved in a consortium with ENCO and peer regulators of the Czech Republic (SÚJB), Hungary (HAEA) and Slovenia (SNSA). The aim of the projects is to increase the capabilities of the Iranian regulator in the area of nuclear and radiation safety through exchange of experience and the promotion of best international practice. The first Project has been running since 2017. ÚJD SR helps INRA in the coordinated and effective implementation of nuclear safety Stress Tests based on lessons learned from NPP Fukushima, Japan. The assistance focuses on supporting INRA in reviewing the operator's self-assessment report and in preparing the Iranian national report from the Stress Tests. The second project officially started in autumn 2018. The ÚJD SR contribution will focus on assisting INRA in connection with the preparation of the IRRS mission in Iran, as well as supporting INRA in further development of the legislative and regulatory framework for nuclear safety in Iran, in line with international standards.

In 2018, ÚJD SR actively participated in the first topical peer review (TPR) of Euratom member states in the field of aging management of NIs, which was carried out under the Council Directive 2014/87/Euratom. In addition to coordinating the preparation of national TPR presentations and answering questions and comments on the National Assessment Report of SR, ÚJD SR experts were directly involved in the activities of the TPR steering committee. They acted as rapporteurs for assessment of concrete structures and TPR project manager. The aim of TPR was to exchange operational experience, identify good practice, as well as common issues and areas for improvement.



9.4. MANAGEMENT SYSTEM

The management system of ÚJD SR is built in accordance with the requirements of EN ISO 9001:2015 and supplemented by specific requirements of the IAEA for nuclear safety. The advisory body of the Chairperson is the Council for the Management System, which assesses the concept of the management system development, issues of its development and application, the need to carry out reviews, their conditions and requirements, audit reports, evaluations and comparative studies, issues of cooperation, exchange of experience and good practice within implementation of the management system in the state administration of SR and abroad, and proposes procedures for its improvement and increasing effectiveness and efficiency of ÚJD SR activities.

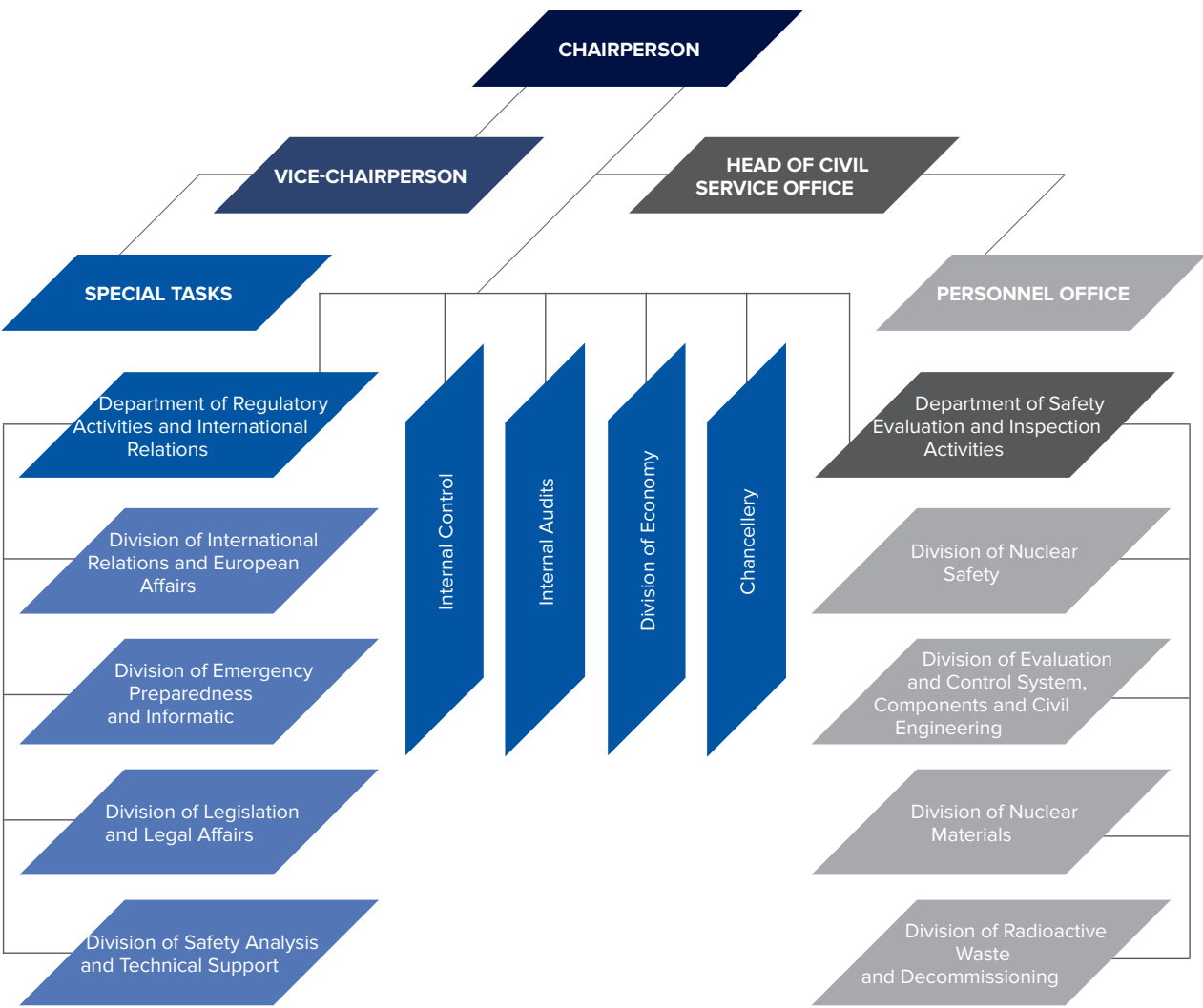
In 2016, risk management was incorporated in the management system, and a risk register was developed. The risk register defines and classifies, in an organized way, the possible risks and risks occurring in practice, inherent in ÚJD SR activities and includes all other information needed for risk management. After the register is compiled, it is regularly updated, the risks identified are monitored and measures are taken to eliminate or mitigate the largest risks identified.

In accordance with the management system audit plan, in 2018 there were four specifically focused partial internal audits. The audits confirmed that the activities performed by ÚJD SR are governed by applicable guidelines and management system procedures. The audits also resulted in several measures to eliminate non-conformities and suggestions for improvements. Some of them were already fulfilled in 2018, and the remaining ones will be implemented in 2019.

The review of the quality management system by the organization's management, which is evaluated by all process owners, is assessed by the Council for the Management System of ÚJD SR. The resulting document is an integral assessment of the state of policy performance and quality objectives, results of internal audits, regular review of quality guidelines, compliance with related requirements, describes process performance, product compliance, description of the status of preventive and corrective actions and changes with potential impact on the management system, while it also includes recommendations for process improvements, activities and product improvement related to legitimate stakeholder requirements and resources needed.

10. ANNEXES

ORGANIZATION STRUCTURE OF THE NUCLEAR REGULATORY AUTHORITY OF THE SLOVAK REPUBLIC AS OF 31 DECEMBER 2018



11. ABBREVIATIONS USED

ACCC	Access to information Convention	PERIS	Periodic integral test
BSC RAO	Bohunice RAW Treatment Centre	PNSA	Periodic Nuclear Safety Assessment
ConvEx	Communication exercise under the IAEA Convention on Early Notification of a Nuclear Accident	PP	Physical Protection
		PSA	Probabilistic Safety Assessment
		PS ATO	Working group for atomic questions in the EC
CTBTO	Comprehensive Test Ban Treaty Organization	RAW	Radioactive waste
DBL	Discontinuous bituminisation line	RÚ RAO	National RAW Repository
EC	European Commission	SARNET	Severe Accident Research Network
ENSREG	European Nuclear Safety Regulators Group	SC NEA	OECD/NEA Steering Committee for Nuclear Energy
ERC	Emergency Response Centre of ÚJD SR		
EU	European Union	SE, a. s.	Slovenské elektrárne, a. s. – Slovak Power Producer
Euratom	Treaty on the establishment of the European Atomic Energy Community	SG	Steam generator
FCC	Fibre-concrete container	SHMÚ	Slovak Hydrometeorological Institute
FNF	Fresh Nuclear Fuel	SNF	Spent nuclear fuel
FS KRAO	Final Treatment of liquid RAW	SR	Slovak Republic
GO	General Overhaul	TPR	Topical Peer Review
HDP	emergency vehicles	TSÚ RAO	Technology for RAW treatment and conditioning
HVAC	ventilation and air-conditioning equipment	ÚJD SR	Nuclear Regulatory Authority of SR
EHQ	Emergency Headquarters	VLLW	Very low level waste
IAEA	International Atomic Energy Agency		
I&C	Instrumentation and Control system		
IRRS	Integrated Regulatory Review Service		
ISFS	Interim Spent Fuel Storage Facility		
ISRAO	Integral RAW Storage Facility		
JAVYS, a. s.	Jadrová a vyradovacia spoločnosť, a. s. / Nuclear and Decommissioning Company		
L&C	Limits and Conditions		
LLW	Low level waste		
MCP	Main circulation pumps		
MELCOR	Computational code for modelling severe accidents		
MH SR	Ministry of Economy of the Slovak Republic		
MS SR	Ministry of Justice of SR		
MV SR	Ministry of Interior of SR		
MŽP SR	Ministry of Environment of SR		
NAR	National Assessment Report		
NDT	non-destructive test		
NI	Nuclear Installations		
NM	Nuclear Materials		
NPP	Nuclear Power Plant		
OECD/NEA	Organization for Economic Cooperation and Development/Nuclear Energy Agency		
OIK	Civil Information Commission		
PC	Primary circuit		

