HUNGARIAN ATOMIC ENERGY AUTHORITY
Nuclear Safety Bulletin

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RECENT DEVELOPMENTS IN NUCLEAR SAFETY IN HUNGARY

June 2022

Organizational changes

Transformation of the HAEA

Over the past years the Hungarian Atomic Energy's (HAEA) roles and responsibilities have been greatly expanded, to the point where it exercises regulatory oversight on over 4000 licensees, carries out over 1000 on-site inspections and issues over 1500 licenses annually.

The increase in the number of licensees was the result of the HAEA becoming the radiation protection oversight authority in 2016.

Prior to 2016, the HAEA was responsible for overseeing the activities of four major licensees (Paks NPP, Spent Fuel Interim Storage Facility, Budapest Research Reactor, Training Reactor at the Budapest University of Technology and Economics). Becoming the radiation protection oversight authority meant that the number of licensees increased exponentially to over 4000 (industrial and healthcare institutions) bringing with it over 1300 license application procedures annually. This meant that a complex, nation-wide licensing-inspection-notification system had to be developed with regional inspectors.

In addition to the increasing tasks, it is essential to pay attention to the regulatory framework. Due to the complexity of the field, the use of nuclear energy and the practice of regulatory supervision were established based on strict domestic and international requirements and recommendations, which are constantly being refined with the development of science and technology. Solutions to everyday challenges must therefore fit into the legal and technical framework.

In case of the HAEA, the main cornerstones when

- Ensuring efficient operation amidst increasing roles and responsibilities;
- Improving the competitiveness of the HAEA on the labor market;
- Continuous compliance with EU legal requirements;
- Preservation of positive results achieved previously.

Based on all this, the legislator decided that it was necessary to change the legal status of the HAEA, transforming it into an institution with a special legal status from 1 January 2022, headed by Andrea Beatrix Kádár. Thus, the Parliament ensures the highest level of supervision of the HAEA.

The change in legal status guarantees the independence of the HAEA's management and operation. The number of staff and organizational structure of the organization are determined or modified by the president of the HAEA, based the available budgetary resources. The new system of benefits will make it possible for the HAEA to offer competitive and attractive labor conditions, improve staff retention, and make it easier to recruit highly qualified professionals.

From May 2022, the HAEA will also have legislative functions, and legislation defining the field, such as the legislation on the safety requirements of nuclear facilities and waste management facilities, the legislation on the protection against ionizing radiation will become presidential decrees.

The transformation combines the advantages of the previous organizational structure with the possibilities provided by the new legal status. This will create a stronger, faster and efficient regulatory body with the necessary competence, resources and independence to maintain its rigorous professional independence.

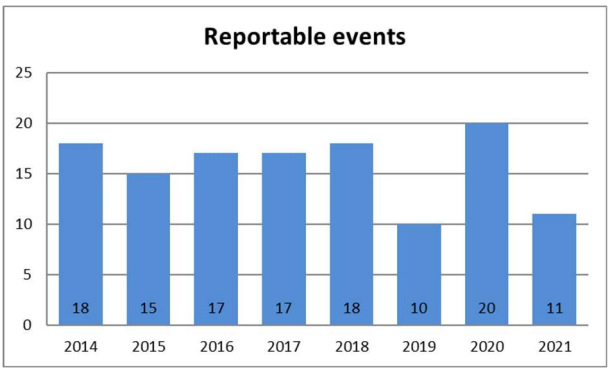
General

2021 annual safety performance assessment of nuclear facilities

The HAEA regularly evaluates the safety performance of operators of nuclear facilities. The main sources of data for the assessment are regular reports and event reports of the licensees, the protocols of regulatory inspections including regular and comprehensive inspections focusing on specific areas, and reactive inspections.

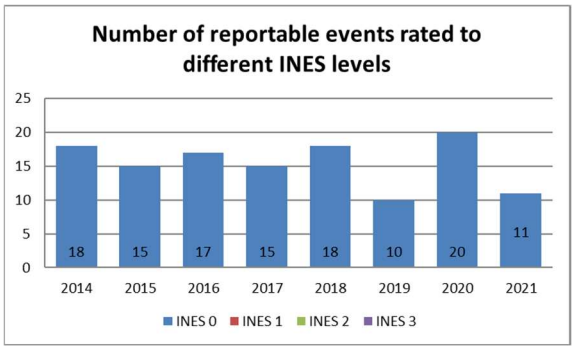
A brief extract is provided below from the annual safety performance assessment. The safety performance data is taken from the first and second quarterly reports of Paks NPP and the first semi-annual reports of the other licensees.

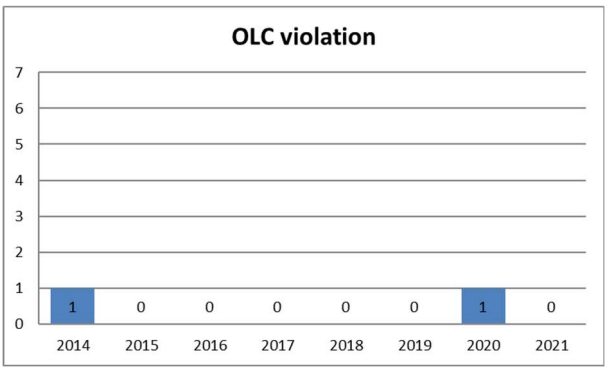
Paks Nuclear Power Plant



Eleven reportable events occurred in 2021.

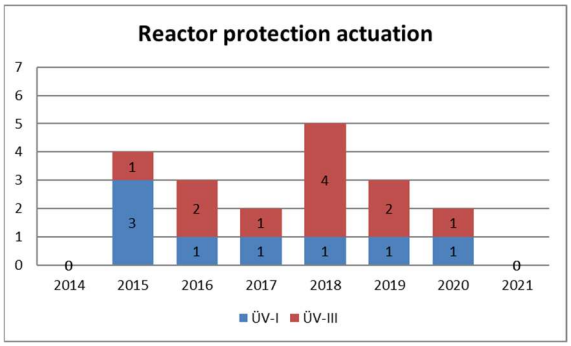
Eleven events have been reported by the NPP altogether, all of them were of category „below scale" corresponding to Level-0 on the seven-level International Nuclear Event Scale (INES).

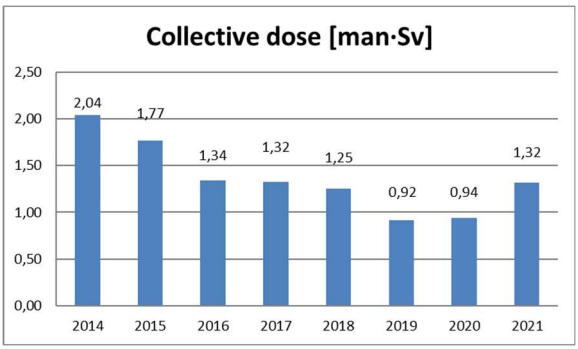




There was no OLC (Operational Limits and Conditions) violation in 2021.

No automatic reactor protection actuation occurred in 2021.



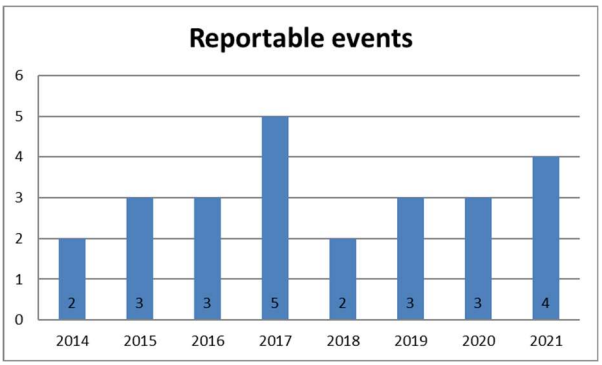


The employee's collective dose of 2021 is comparable to the previous year's values.

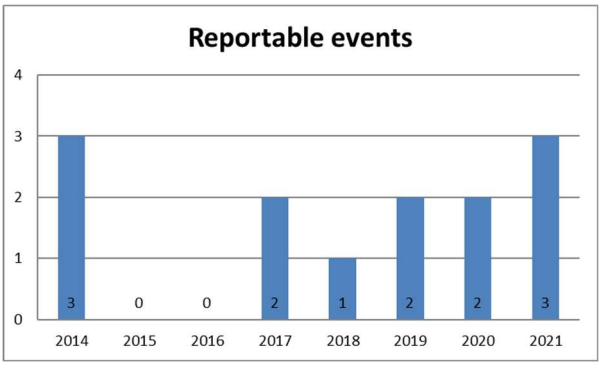
Budapest Research Reactor

Four reportable events occured in 2021.

Three events were caused by a shutdown because of electric failure in the outside network, one was related to physical protection.



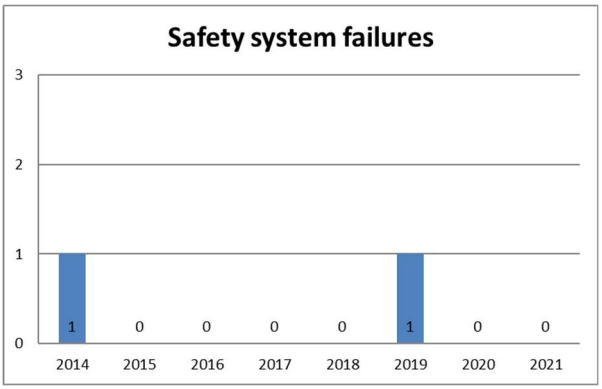
BUTE Training Reactor



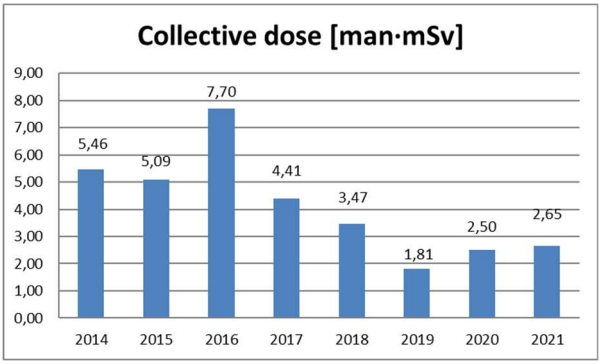
Three reportable events occured in 2021.

One event was related to the replacement of a logic unit, one event to a power failure due to incorrectly wired phases and one event to an open valve due to human error.

No safety system failure occured in 2021.



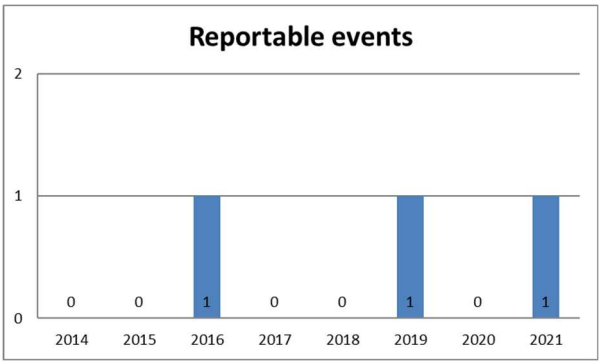
Interim Spent Fuel Storage Facility



The collective dose in 2021 increased compared to the previous half of the year due to the increase in the number of employees controlled and the increase in work.

One reportable event occurred in 2021.

The incident involved an OLC violation in connection with the refilling of the gas space of a group of storage pipes.



Based on the comprehensive safety performance assessment it can be stated that during 2021 the nuclear safety of facilities inspected by the HAEA were at appropriate level, as in previous years.

The facilities operated safely, did not endanger neither the environment, nor the population, nor the employees.

Legal changes of the second half of 2021

Act CXIV of 2021 amending several laws created the necessary regulation for the change of the legal status of the HAEA and laid down the general rules for the HAEA as an independent regulatory organ. As a result, the provisions of the Act CVII of 2019 on organs of special status apply to the HAEA as of 1 January 2022. In addition, the Act on Atomic Energy includes detailed regulation on the nuclear regulatory authority.

Considering the fact that the tasks of the HAEA should be regulated at the level of a legal act, the new amendment transfers to the Act on Atomic Energy all the responsibilities of the HAEA related to EU and international obligations in the field of nuclear energy, which were previously regulated by Govt. Decree 112/2011.

According to the Fundamental Law, an independent regulatory organ also has the power to issue regulations; therefore, the amendment gives the HAEA the power to issue regulations in a number of cases.

Due to the amendment of Act CXXV of 1995, employees of the HAEA shall be subject to the national security vetting process.

The amendment of Govt. Decree 118/2011:

- Besides technical and codification clarifications, the amendment of the decree enables clients to submit certain exhaustively listed documents in the licensing processes concerning the new nuclear power plant in Hungarian and in English as well.

Nuclear emergency preparedness

Information on nuclear emergency preparedness

The development of the Emergency Response Organisation of the Hungarian Atomic Energy Authority (HAEA ERO) has been continued in 2021 and 2022.

In 2021 the national exercise, which is the most significant at the national level, based on the exercise of the Paks Nuclear Power Plant, was held in November. The HAEA ERO participated in the exercise that was successful based on the evaluation. In this exercise colleagues proved their skills in the role of Nuclear Analyser and Radiological Manager and passed their exams.

The HAEA ERO joins the complex, ConvEx-3 and ECUREX international nuclear emergency response exercise held in October 2021, which provided opportunity for newly learned ERO colleagues to practice. The two main objectives of the 36-hours long exercise – besides the assessment, analysis of the event and determining the necessary public protective actions – were the testing of the national and international communication and the successful sending of the results of the gamma spectroscopy analysis of “live” environmental radioactivity

measurements, not later than in 24 hours. On global level 111, from Hungary 6 laboratories joined this exercise.

Furthermore two Crisis Managers and three Emergency Duty Officers passed their exams successfully in 2022 so far.

The Emergency Preparedness Review follow-up mission of the International Atomic Energy Agency was originally planned for October 2020 to review the progress based on the recommendations and suggestions of the main EPREV Mission in 2016. To prepare for the mission, the organisations involved in the mission, with the coordination of the HAEA, reviewed the national self-assessment originally created in 2016 and prepared the so-called Advance Reference Material (ARM). Purpose of ARM is to assist the preparation of the international experts with presenting the relevant legislations and regulatory documents supplemented by the information about the implementation of the suggestions and recommendations of the main EPREV mission. Due to the pandemic the follow-up mission was postponed firstly to November 2021 than finally to 2022. Based on the discussions held in the beginning of 2022, the planned date of the mission is 4-8 July 2022. One of the most important tasks of this half year is the preparation for the mission. One important step of this was the meeting of the ‘High Level Working Group’, where the EPREV follow-up mission was a topic among the usual topic of the maintenance of the Hungarian Nuclear Emergency Response Plan and its guides.

The first annual meeting of the Nuclear Emergency Management Technical Scientific Section (NEM TSS) of the Scientific Council of the Disaster Management Interministerial Coordination Committee was held on 10 May 2022. The meeting was chaired by the president of the HAEA as the chair of NEM TSS. Members of the NEM TSS – among other topics in progress – discussed about the experiences about COVID-19 and the effect of the Ukraine-Russia conflict to the safety of the nuclear facilities in Ukraine.

Paks Nuclear Power Plant

Low water level in the bubble condenser tray

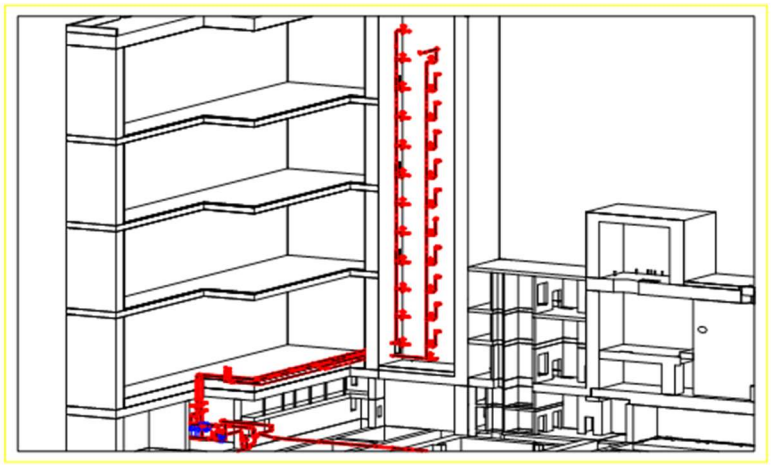
The localization tower with its 12 trays and bubble supression condensers, which is activated at the emergency pressure value of the hermetic space, plays an important role in the passive protection of the units of the Paks Nuclear Power Plant, ensuring the reduction of the overpressure and thus preventing the release of radioactive materials into the environment.

The level probe of tray 2 of the bubble supression condenser on unit 2 has previously repeatedly given an unduly low level signal to the control room.

The measuring circuit of the level probe was repaired and found to be operational, however, due to the failure of the other measuring circuit that had previously failed to provide a level signal, it was assumed that the failures had a common cause – presumably a hermetic cable bushing failure. For this reason, on March 24, 2021, a decision was taken to load the unit to the M2 (reactor start-up/shutdown) operating state and to check the measuring circuits inside the hermetic compartment.

According to the schedule, on March 26, 2021, Unit 2 was loaded to the M2 operating state, then the necessary measuring circuits were repaired, and the level probes were tested. During a visual inspection of the water level in tray 2 on site, it was observed that the water level in tray 2 was lower than normal. The operational staff recorded a condition that deviated from the operational limits, which resulted in a reporting obligation to the HAEA. The water level in tray 2 was adjusted to the normal operating level by refilling, and the deviation was corrected.

As a corrective measure, the hermetic cable bushings for the bubble tray condenser probe circuits in all four units were ordered to be refurbished.



Location and trail of the system

The incident had no significant impact on nuclear safety.

General use of SLIM fuel assemblies at Paks Nuclear Power Plant

In December, 2020 Paks Nuclear Power Plant introduced 18 Lead Test Assemblies of a new water-uranium ratio optimized so-called SLIM fuel at Unit 3, 35th cycle. This new fuel type has thinner cladding and solid pellets (except for rods containing burnable absorber, which still have a central hole), and the spacer grids are equipped with mixing vanes in order to enhance the mixing of the coolant. This new concept allows for more economical fuel usage as the lack of the central hole increases the weight of uranium in the fuel rod and the thinner cladding results in bigger utilization of fissile material, therefore less fresh fuel will be necessary per fuel cycle and the number of spent fuel assemblies will be reduced.

HAEA has issued a license for the introduction of 18 Lead Test Assemblies via its resolution HA7191.

During the test program Paks Nuclear Power Plant evaluated the experiences of the application of SLIM fuel assemblies, which showed positive operating experiences. Start-up measurements of Unit 3 (which contains 18 SLIM fuel assemblies) were in good agreement with the calculated values. The margins between the measured and criterion values were high, so Unit 3 could be operated at nominal power. Furthermore, based on the measurements of the fuel assemblies outlet temperature distributions, the coolant rate through SLIM fuel assemblies was in line with the expectations.

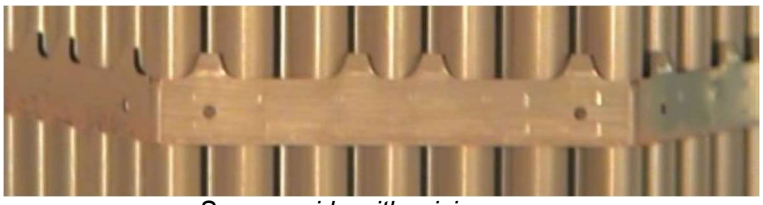
The license request for the general application of SLIM fuel was submitted by Paks Nuclear Power Plant to HAEA in July 2021.

HAEA issued the license in November 2021 on the condition that the test program is successfully completed (the 18 SLIM test assemblies remain intact).

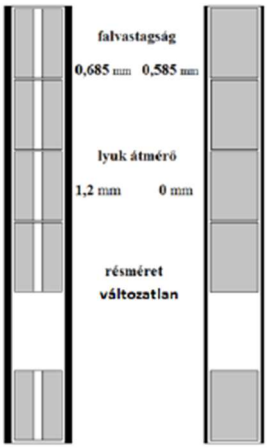
In February 2022 the test program was successfully finished and 96 fresh SLIM fuel assemblies were loaded into the core of Unit 3.

The start up measurement of Unit 3 (which contains 96 fresh SLIM fuel assemblies plus 18 SLIM fuel assemblies from the previous cycle) are in good agreement with the calculated values. The margins between the measured and criterion values are high, so Unit 3 may be operated at nominal power.

The introduction of SLIM fuel assemblies of Unit 1,2,4 is going to take place during the units's following outages.



Spacer grids with mixing vanes



Changes in fuel rod

PSOD - Production Subsystem Operational Development

MVM Paks Nuclear Power Plant Ltd.. has established the Production Subsystem Operation Development (PSOD) priority project, based on the Standard Nuclear Operation Model (SNPM) developed by the Institute of Nuclear Power Operators (INPO) and the Nuclear Energy Institute (NEI) for the transformation and standardization of the process management system.

The aim of the project is to adapt the central processes (work management, equipment reliability, configuration management) of this Standard Nuclear Operation Model. The implementation periods of the PSOD project take place according to several overlapping phases.

The first phase has been established in 2021, during this phase the implementation of the IT work environment will be implemented by adapting the AS6 application to the process under the name AS6+. In parallel with the first phase, the AP-928 Work Management Process has been localized, including the necessary changes to the supply chain and power plant operations to implement AP-928. Recently the second period is under licensing to implement the configuration management and equipment reliability processes. As planned, this work will be completed in 2022 regarding to the IT environment. The modification includes software exchange from AS6 to AS9. The aim of the project is to transform and make more efficient the processes covered by the Production Subsystem. As a result of the modification, the daily work of the employees involved in the processes will also change.

Paks II. project

Prolongation of site license for Paks II.

The site license issued by the HAEA was valid for 5 years for the Paks II Nuclear Power Plant Private Company Limited. Before its expiry the licensee submitted an application to the HAEA for the prolongation of the site license. Based on the application, the HAEA requested a statement from the Supervisory Authority for Regulated Services (SARS, former mining authority) to ensure that the conditions for issuing the site license are still valid and to declare whether the SARS has new information about geological, mining, and technical safety issues that could affect the HAEA's licensing procedure.

Based on the documents submitted by the licensee, the independent technical expert opinions, and the SARS' declaration, the HAEA found no new data that would make renewing the site license impossible. The HAEA determined that the requirments set forth in the Atomic Act and the Nuclear Safety Codes for siting were still met, hence the site license was extended by 5 years in a decision released on March 29, 2022.

Radioactive Waste and Spent Fuel Management

Succesful ARTEMIS mission in Hungary

The Integrated Review Service for Radioactive Waste and Spent Fuel Management, Decommissioning and Remediation (ARTEMIS) team concluded a ten-day mission to Hungary on 29 March 2022. The mission was carried out at the request of the Government of Hungary and hosted by the Hungarian Atomic Energy Authority (HAEA).

The team, which comprised five experts from Denmark, Finland, France, Lithuania and Sweden, as well as three International Atomic Energy Agency (IAEA) staff members, held meetings with officials from the Ministry for Innovations and Technology, the Hungarian waste management organisation called the Public Limited Company for Radioactive Waste Management (PURAM), the Paks Nuclear Power Plant (NPP), and the HAEA at its headquarters in the capital, Budapest. Observers from Slovenia, which will host an ARTEMIS later this year, and from the European Commission also participated in the mission.

On 4 April, the IAEA published its press release on the results of the ARTEMIS Mission to Hungary. “The Hungarian system provides a well-developed infrastructure for ensuring the safe and effective management of spent fuel and radioactive waste now and in the future,” said ARTEMIS team leader David Ulfbeck, Senior Adviser at the Danish Health Authority.

In addition, one recommendations and five suggestions provided by the team included:

- The Government should provide the mechanism for when and on what basis the decision shall be made on the back-end of the nuclear fuel cycle.
- The HAEA should consider completing development of safety regulations for management of very low level radioactive waste including disposal.

As a good practice, the ARTEMIS team identified performance in improving the safety of disposal facilities for low and intermediate activity level waste as well. The team recognized the safety improvement programme which PURAM has designed and implemented at an existing disposal facility at Püspökszilágy based on a comprehensive comparison of different options in terms of long term safety assessment and evaluation of radiological risks for workers and the public.

Anna Clark, Head of the Waste and Environmental Safety Section in the IAEA Division of Radiation, Transport and Waste Safety, said that “Hungary’s approach to this peer review mission has been excellent. The preparation and presentation of information have enabled open and fruitful discussions. We are convinced that the findings from the ARTEMIS Mission will help Hungary to further enhance the safe and effective management of spent fuel and radioactive waste.”

Regulatory process regarding the modification of the operating licence of the NRWR

On 20 July 2020 the Public Limited Company for Radioactive Waste Management (PURAM) submitted its application to the HAEA regarding the modification of the operating licence of the National Radioactive Waste Repository (NRWR). PURAM presented the application in order to transfer to NRWR and dispose of some institutional radioactive waste retrieved from the Radioactive Waste Treatment and Disposal Facility (RWTDF) in Püspökszilágy during the Safety Enhancement Program.

As appendices to the application PURAM submitted the facility’s Final Safety Report, the Emergency Response Plan, the Monitoring Program and the modified Operating Limits and Conditions. With this documentation the licensee intended to verify that the transfer and final disposal of the institutional radioactive waste from RWTDF to NRWR can be carried out safely and the NRWR facility can still be operated safely.

The HAEA reviewed and evaluated the submitted materials, as part of the regulatory process, a public hearing was also held. On 18 March 2022 the HAEA issued the operating licence with some conditions, by which the process was completed.

International Cooperation

Hungarian-Austrian Online Bilateral Meeting

Due to the pandemic, the 27th Austrian-Hungarian bilateral meeting was organized by the Hungarian side on 16 November 2021 online like the previous one. At the bilateral meeting, the head of the Hungarian delegation was Ms Andrea Beatrix Kádár, Director General of the Hungarian Atomic Energy Authority. The Austrian delegation was led by Mr Ronald Sturm, Unit Head of the Federal Ministry for European and International Affairs. As in previous bilateral expert talks, topics included changes in legislation, major developments at the Paks Nuclear Power Plant, the assessment of the construction licence application of the new units, emergency preparedness, radiation protection, and radioactive waste management.

Hungarian-Austrian bilateral expert meeting on the site characteristics of the new nuclear power plant units

Hungarian-Austrian bilateral meeting took place on 15 February 2022, the topic of which was the geological features of the new units' Paks site. The Austrian government ordered a study on this topic and shared it with the HAEA. In addition to the experts of the HAEA and the Supervisory Authority of Regulatory Affairs (the legal successor of the Mining and Geological Survey of Hungary and the government offices designated as state geological functions), the representatives and experts of Paks II Ltd., as well as the members of the Federal Environment Agency of Austria and their external (Austrian, German and French) experts participated in the event.

Based on the examination of the Austrian study and the professional discussions with the Austrian party the HAEA maintains its position that the site of the new nuclear power plant units complies with legal requirements and is thus suitable for the construction of the new nuclear power plant units, based on the measurements, the performed analyses and the submitted documentation.

NEA Director-General's visit to HAEA

On 1 December 2021, OECD Nuclear Energy Agency Director-General Mr. William D. Magwood carried out a visit at the Hungarian Atomic Energy Authority to have consultations with Ms Andrea Beatrix Kádár, the Director-General of HAEA.

During the meeting, the leaders of the two organisations discussed such topics as restructuring of the HAEA and future challenges, the role of small modular reactors, further lifetime extension of the four operating blocks and the importance to improve gender balance in the nuclear sector. The NEA DG referred to the topics where they expect more contribution from Hungary and he emphasized that the NEA is ready to provide assistance in several areas (e.g.

radioactive waste management, WWER blocks). DG Magwood expressed his appreciation for HAEA hosting the next meeting of the Working Group on Operational Experience in April 2022 and suggested that he would continue the conversations with the HAEA on the occasion of his next visit to Hungary.

Preparation for the 7th JC review meeting

The deadline for submission of the seventh national report under the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management was 27 October 2020.

Meetings convened in order to discuss substantive, procedural and organisational issues of the Review Meeting were postponed due to the situation of the coronavirus epidemic. The Organisational Meeting was finally held online between 28 September and 2 October 2020. For further proceedings of the Seventh Review Meeting, Contracting Parties agreed that the Review Meeting would take place between 27 June and 8 July 2022. The deadline for submitting questions for other countries' reports was 30 October 2021 and the deadline for responding to questions was 31 March 2022.

The cancelled 4th Extraordinary Meeting was initially planned to be held in Vienna from 14 to 16 February 2022 with in-person participation. Due to the epidemic situation it finally took place from 4 to 6 May 2022. During the Extraordinary Meeting Contracting Parties discussed proposals to improve the review process. The proposals concerned among others, the timetable for the Review Meeting, the selection of officials and their responsibilities, and the assignment of Contracting Parties to country groups.

The 2021 session of the VVER Forum was organized by the HAEA

The three day long 2021 session of the VVER Regulators' Forum (forum of the nuclear safety regulatory bodies of countries operating VVER type NPPs) organised by the HAEA was opened on November 30th. Considering the pandemic situation the meeting took place in on-line format. The main aim of the Forum is to exchange experience of the nuclear regulatory bodies of member countries, inform each other on the results, to support their work by presenting the good practices. Preceding meeting of the Forum was held in 2019, therefore the participating organizations overviewed a two years long period.

In the framework of the meeting Ms. Andrea Beatrix Kádár director general, and from1st of January president of the HAEA presented the most important amendments in the Hungarian act on atomic energy, emphasizing that the international relations remain important, therefore HAEA pays big attention to cooperation within the framework of the VVER Forum. It is completely committed to objectives of the Forum, to efforts striving to achieve the highest level

of safety and radiological protection. She added that “the information gathered and evaluated by the Forum always forms a good basis for the high level regulatory work”.

After presentation of the reports prepared by the working groups almost 20 member states’ regulatory organization gave overview on the most important developments, changes in legislation and regulations, operational events evaluated by them and experience gained from the executed inspections. In the meeting besides other expert organizations’ representatives participated representative of the IAEA as well, who shortly informed about the activities of the IAEA related to the regulatory work (e.g. about the IAEA safety standard documents, organization of review meeting of some international treaties and statistical data related to regulatory systems).

Preparations for the domestic tasks of the Second EU Topical Peer Review (TPR II.) dealing with issues of fire safety in the nuclear facilities

According to the Nuclear Safety Directive of the EU at least each six year it is mandatory to carry out a Topical Peer Review, and within the framework of the TPR II. implementation of the national self-evaluation phase is due to start this year in July. Approval of relevant international documents defining the process [the Term of Reference (ToR) and the Technical Specification (TS)] is planned by ENSREG, the high level advisory group of the EU Commission consisting of the heads of regulatory bodies of the Member-states, in its next meeting in June 2022.

HAEA prepares the needed Hungarian activities on two tracks. One of these is the participation in elaboration of the documents defining the whole process. The aim of the HAEA in this regard is to fully understand, and when it is needed also to influence the decisions on scope, schedule, methodology and practical implementation of the review process, based on the domestic experience gained during the TPR I., as well as on the Hungarian aspects. Representatives of the HAEA participated, and continue their activity in working groups dealing with summarizinglessons of the TPR I., nomination and selection of the international review expert team, formulation of the ToR and TS, as well as in the elaboration and execution of the stakeholder involvement programme.

The second track of preparations is to get ready to all activities which are necessary to implement the review and self-evaluation activities by the Hungarian nuclear installations falling into the scope of the TPR II., as well as by the regulatory body. Up-to-now nuclear installations to be involved in the review process have been notified and informed. The HAEA inspector responsible for the whole TPR II. process was appointed as well. His first duty is the elaboration, the discussion with the involved parties and getting high-level approval of the document containing steps, schedule and resources needed for the TPR II. process. Since the topic of the TPR II. is the fire safety, it is necessary to involve the authority responsible for fire

safety issues (National Directorate for Disaster Management). HAEA has already contacted their representatives to define our collaboration within the project.

OECD NEA working group meeting at the HAEA

A workshop and the spring meeting of the Working Group on Operating Experience of the Nuclear Energy Agency (OECD NEA) were held at the Hungarian Atomic Energy Authority from 25 to 28 April 2022, focusing on the programmes developed by Member States to utilize the operating experience of nuclear power plants.

During the three days of the workshop, participants exchanged experience on how to inspect the operating experience sharing programmes developed by licensees of nuclear power plants in their countries. There was more discussion on the structure and development of the databases used in each country, but also on how to utilize experiences from external sources. Presentations closely related to the workshop theme were given by national and international organisations.

After the workshop, the working group held its first face-to-face meeting since the beginning of the pandemic. At the beginning of the meeting, the current Chair gave an update on the progress since the last meeting and an overview of the future tasks. The representative of the OECD NEA then presented the plans for the transformation of the working groups and how the current working group will carry out its tasks. The next meeting will take place in October this year, in Vienna.

Russia-Ukraine situation: challenges facing the international organizations and the national nuclear regulatory bodies

On February 24, 2022 the Russian army attacked Ukraine. The outbreak of war jeopardized the safety of nuclear facilities in the country, generating real risk. The international community and specialized agencies (IAEA, ENSREG, WENRA, HERCA) have therefore strongly condemned this situation and made joint efforts to ensure that the principles of safe operation of nuclear installations are fully respected.

Rafael Mariano Grossi, Director General of the International Atomic Energy Agency has visited Ukraine twice since the outbreak of war, and assured his Ukrainian partners that the IAEA is ready to support Ukraine in tackling challenges regarding safety of nuclear facilities. The IAEA has provided special equipment to Ukrainian partners, its experts have been involved in restoring the safeguards monitoring system at the Chernobyl Nuclear Power Plant, and carried out on-site measurements which have proven that the level of radiation remains well below the limit values. Director-General concluded that currently only the situation around the Zaporizhia Nuclear Power Plant can be defined as a matter of great concern, and that is why he requested consultations with the Russian side on this issue.

Hungary has also joined international efforts to help resolve the situation in Ukraine. With the coordination of the HAEA we contributed to Ukraine's request regarding donation of equipment, received through the IAEA’s Response and Assistance Network (RANET). In addition the HAEA alongside with its regional partners paid special attention to the analysis of risks identified in connection with the situation in Ukraine.

The conflict and war situation posed a number of challenges for national nuclear regulators, especially in countries neighbouring Ukraine and Russia, including Hungary. On the one hand, it is important for the authorities to provide verified information to the public and the media, which is often difficult in times of war: contradictory information appears which is difficult to refute or confirm, and there are also fake news and rumours that need to be responded immediately. Moreover, the situation can change significantly from hour to hour. The lack of international experience regarding the dangers and risks associated with military operations against nuclear power plants also creates an extraordinary situation. In addition to the field of nuclear safety and radiation protection, the issues of physical protection and international relations also receive special attention.

As a neighbouring country, the situation in Ukraine is of great concern in Hungary, and there is a focus on the situation of Ukrainian nuclear facilities, which is covered in a number of media reports.

In order to ensure the safety of the domestic population and provide information effectively, the HAEA has developed a standby system that continuously monitors the situation in Ukraine, follows the information shared by international organizations and the authorities of other countries, analyse the safety and security of Ukrainian nuclear facilities and monitors the media. In this way, the HAEA is continuously monitoring the condition of Ukrainian facilities and able to instantly analyse events, respond to media inquiries, publish information immediately as needed, even during out-of-work hours. Due to the uncertainties of the validity of the information, the HAEA published its news mainly based on the information provided by the International Atomic Energy Agency.

It is extremely important for Hungary that all the nuclear facilities currently operating in Ukraine are more than 300 km away, the largest Zaporizhia Nuclear Power Plant is more than 900 km from the Hungarian border. HAEA concluded that the emergency situation at the nuclear facilities in Ukraine does not have serious impact on Hungarian population, there is a minor chance for any serious radiological consequence in Hungary because of the large distances.

Nuclear safeguard

Safeguards Consultation and anniversary meeting of the "30-years Hungarian Safeguards Support Programme" at the HAEA

The Hungarian Atomic Energy Authority has been holding annual consultations with the managers and staff of Hungarian nuclear facilities and organizations dealing with nuclear materials since 2014. For the past two years, the pandemic situation did not allow an in-person meeting, however on 22 April, 2022, the event could have taken place at the HAEA headquarters. In 2021, the Hungarian Support Programme for strengthening the safeguards system of the International Atomic Energy Agency celebrated its 30th anniversary. On this occasion the HAEA held a jubilee meeting with the representatives of the organizations participating in the implementation of the Support Programme after the Safeguards Consultation.

The Safeguards Consultation was opened by Mr. Zsolt Stefánka, Head of Department of Radiation Sources, Safeguards and Security of the HAEA, then he described the major domestic and international events related to nuclear safeguards in 2020 and 2021, as well as the HAEA's plans for this year. During the professional program, the HAEA experts presented the safeguards planning of the new nuclear power plant units from the perspective of the authority, the tasks of the Safeguards Support Programme to be provided to the IAEA this year, and the safeguards culture of domestic nuclear facilities over the past decade. Participants heard a presentation from the representative of the Paks II. NPP Ltd. on the current status of the new nuclear power plant units, with special regard to the development of the safeguards system, and another presentation from the representative of the Public Limited Company for Radioactive Waste Management on future tasks related to the disposal of domestic fuel elements.

The 30th anniversary meeting was opened by Mr. László Juhász, Vice President of the HAEA, followed by Mr. Massimo Aparo, IAEA Deputy Director General and Head of the Department of Safeguards, who thanked the participants for their work in a video message. Subsequently, the HAEA gave a presentation on the importance of support programmes for the maintenance and development of the international non-proliferation regime. Finally, as a look back at the last 30 years, a presentation was held by the expert of the MVM Paks NPP Ltd., as well as statements were made by the representatives of the organizations participating in the Safeguards Support Programme the tasks performed in the recent period and the benefits of participation in the programme. The HAEA prepared a publication for the anniversary meeting on the IAEA Safeguards System and Support Programme, as well as a 30-years review of the Hungarian Support Programme. The publication is available on the HAEA website.