KRŠKO NUCLEAR POWER PLANT

ANNUAL REPORT 2016

KRŠKO NUCLEAR POWER PLANT

Vrbina 12
SI-8270 Krško

telephone: +386 7 480 2000
telefax: +386 7 492 1528
e-mail: nek@nek.si

www.nek.si

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ADDRESS BY THE MANAGEMENT BOARD

Dear business partners, owners and colleagues, dear reader,

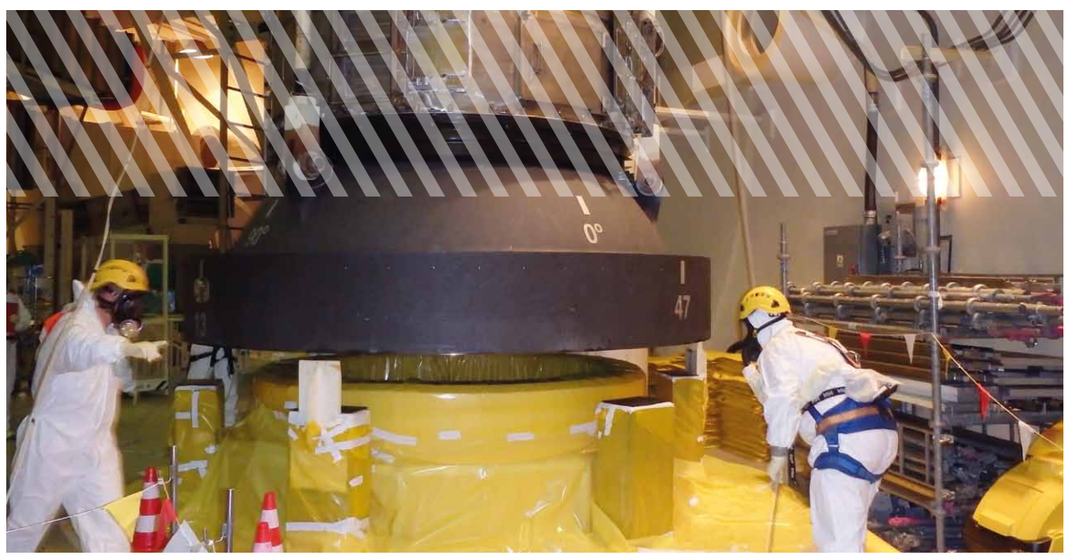
When we look back at the past 2016 business year, we look back at it with satisfaction and pride for our team work and all results achieved by our collective efforts, as well as both owners, business partners and professional organisations who support our work. We achieved and exceeded the planned output, the operations were safe and without unplanned shutdowns, we maintained high safety standards, completed an extensive outage and prepared work and projects for technological upgrading. These support the plant's extended lifespan and will ensure that Krško NPP's safety standards will be comparable to new plants.

Our endeavours were directed towards meeting the important standards of modern energy strategy - reliability, environmental suitability and effective economy. We are aware of the fact that the latter may be the crucial point for our future long-term operations. This was the basis for our optimisation process as a result of adjustment to fierce market conditions with exceptionally low electricity prices. We were pleased to see both owners demonstrating a high level of responsibility and agreed that optimisation must maintain the vital standard - it must not affect the nuclear safety and operational stability levels maintained throughout the past decades.

Following 500 days of operations in over eight billion kilowatt hours of electricity output, the outage started on 1 October 2016. It is of great significance that the 18-month operations ended with fully integrated nuclear fuel. This also proves the successful modification of reactor structures. In addition, the 29th nuclear fuel cycle started with the modernised fuel design, which is more resistant to cladding damages, which is a step forwards to ensuring the perfect condition of nuclear fuel.

In addition, the 2016 outage will be remembered for excellent results of the 10-year containment integrity and leak-free condition, the main electric generator overhaul, turbine regulation valve inspection, the replacement of heat exchangers for containment cooling units, and the replacement of inverters of regulation and protection circuits.

All planned technological upgrading was successfully completed in support of operational lifespan extension of the plant and can be grouped into three scopes: harmonisation of systems and structures which will ensure safety and reliability of NPP's operation during the simultaneous operation of the Brežice Hydro Power Plant, upgrading to increase reliability of the nuclear plant operations, and upgrading of NPP as per Safety Upgrade Program. The program warrants the development and extension of safety solutions in the unlikely event of accidents. It is in the second execution phase and includes several projects. One of the major projects is the construction of a new emergency control room which will replace the current shutdown panels and enable monitoring potential severe accidents. The second such project is the simulator upgrading. The upgrading started in spring, after 16 years of its reliable operation. The full-scope simulator is being upgraded by a Canadian company whose representative described our plant, for one of the press-companies, as being an innovative company always on the outlook for new challenges on how to expand the limits of technology. We are honoured to be seen like that by our business partners, and we are sure that our dedicated staff, backed up by support of the owners will follow the paths of technological excellence.



As nuclear safety is our high priority, certain delays due to the public procurement system in 2016 and consequent review procedures must not be overlooked; the system in particular affects the safety upgrading projects in which decisions are made on technical issues concerning nuclear safety, which is disputable and unacceptable. It should be pointed out that the responsibility of operational safety is rested with the plant; therefore, the decisions concerning safety should be taken by the plant in order to avoid risks during plant operations. It is imperative that nuclear safety is included as a decision-making condition in the Public Procurement Act.

Our vision to be an example of nuclear safety and excellence at a global level, is our motive and great responsibility. Efforts are worthwhile if one does not give in. Therefore, we carry on and try to combine our hard work with good decisions. This is the basis of our future. Our imprint.

We would like to express our thanks to all who have contributed to our achieving our mission and respect. It is hoped they will be a good foundation for us to build our long-term energy independence extending to future generations making use of the knowledge accumulated and broadened during the course of past decades.

Stane Rožman,
President of the
Management Board

Hrvoje Perharić,
Member of the
Management Board

NPP achieved the goals set and fulfilled our mission in all four fundamental areas: We ensured safe and stable operations while respecting high standards. The production price of the power generated was competitive and in accordance with the business plan. All regulatory and environmental requirements were met. On the results assessed there were improvement plans prepared.

SUMMARY REPORT AND CHALLENGES FOR 2017

In 2016 the plant operated safely and stably. The annual output was 5431 GWh of electric energy, which is more than planned. The extensive and complex regular outage with refuelling took over a month, i.e. from 1 October to 5 November 2016. The plant's stable operations contributed to the stability of the Slovenian and Croatian electricity systems.

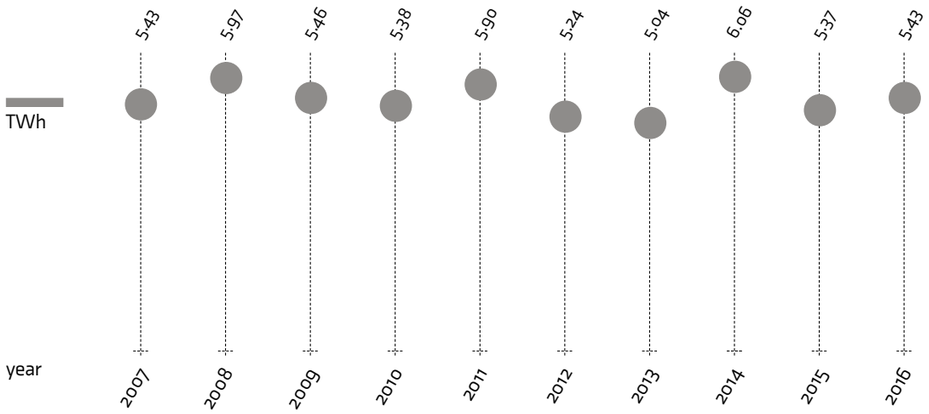
The Safety Upgrade Program (SUP) is being furthered as an administrative requirement by URSJV (Slovenian Nuclear Safety Administration). Its implementation is our task and one of the conditions to be met for long-term operations of the plant during the plant's operational life extension, at the same time ensuring an even higher level of robustness and resistance to extreme external and internal events exceeding the original designed bases. Phase 1 of the SUP was completed during the 2013 outage, part of the modifications were carried out during the year and during the 2016 outage. The flood protection upgrading project was completed as well as the first phase of the emergency control room. Activities related to SUP phase 2 included project documentation preparation and the main equipment was ordered. Following the Spent Fuel Dry Storage international bidding, the contractor was selected for the whole project. Unfortunately, due to the appeal proceedings pending the decision by the National Review Commission concerning technical issues related to nuclear safety, which is a disputable and reprehensible action, the project has not been started yet.

In 2016 the Safety Upgrade Program was revised and approved by URSJV. From their decision it follows that NPP is to finish the Program by the end of 2021.

Further activities were undertaken in implementing modification and technological improvements having direct impact on improved nuclear safety and operational reliability. Major modernisations include the replacement of the auxiliary feedwater turbine driven pump which improves the auxiliary feedwater system reliability, thus reducing potential core damage. A significant impact to the fuel integrity reliability will be reached with the nuclear fuel mechanical design improvement project. Several projects were accomplished on the secondary systems: generator system modernisation, generator load break switch replacement, isolated phase bus duct cooling unit replacement, and exciter and voltage regulator replacement, all leading to improved plant's operational reliability. Several projects were as well as measures needed due to heightened Sava river water level following the construction of the Brežice hydro-power plant reservoir.

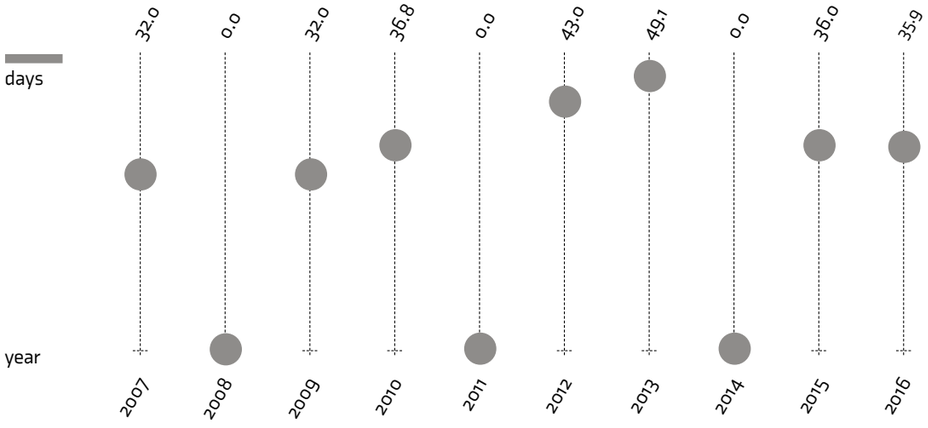
ANNUAL OUTPUT

Total: 163.60 TWh
(output since the start of commercial operation)
NEK target for 2016: 5.40 TWh

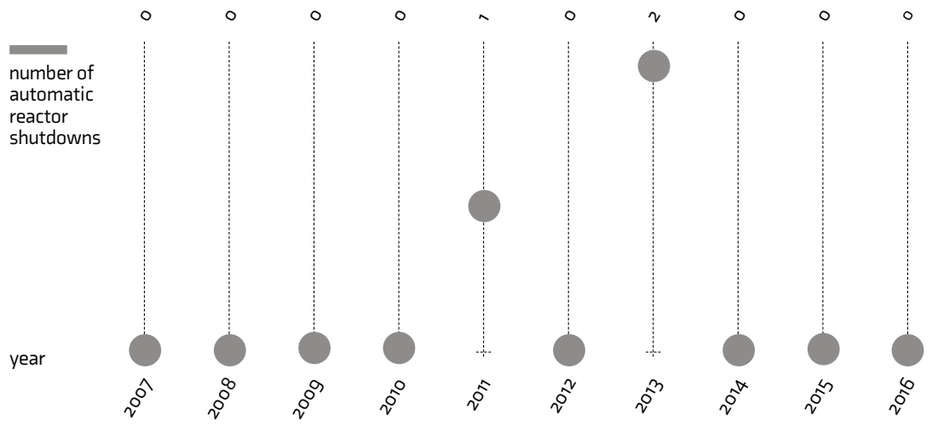


The plant's operations were stable. It was shut down only for regular outage. All regulatory and environmental requirements were met.

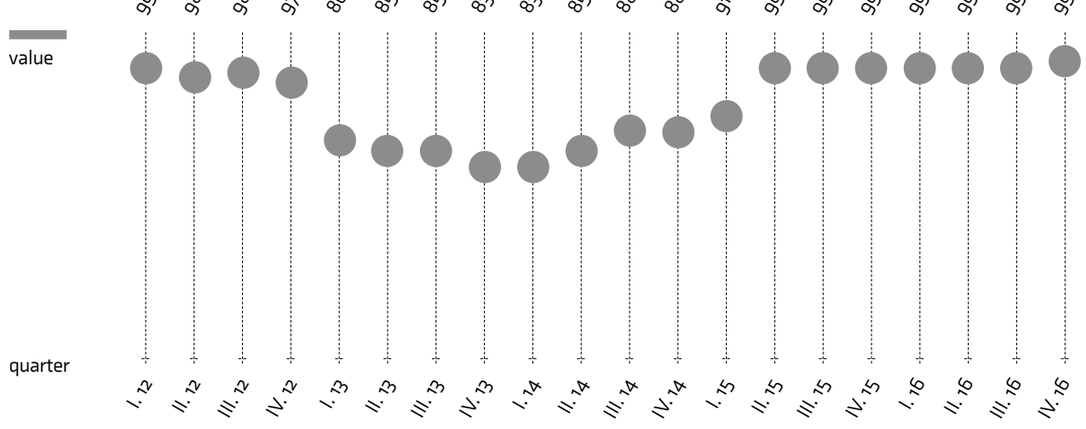
OUTAGE DURATION



UNPLANNED AUTOMATIC SHUTDOWNS



PERFORMANCE INDICATOR INDEX



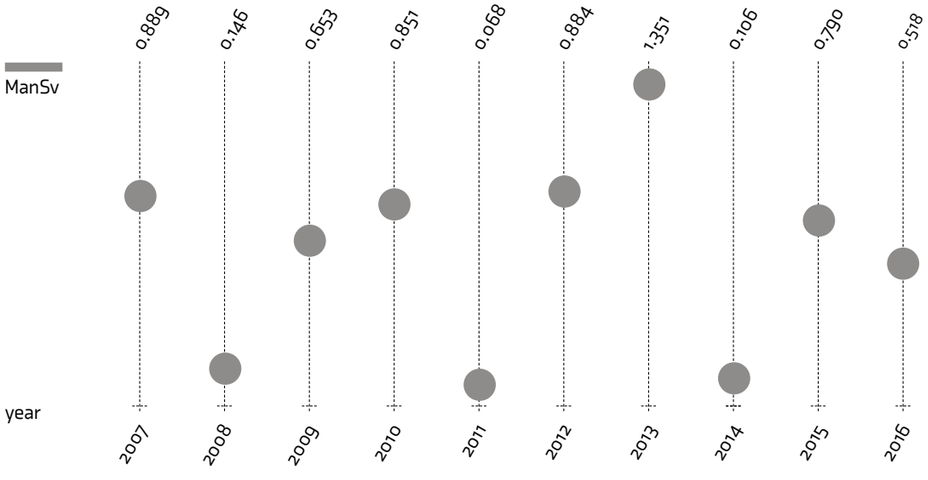
The operational efficiency is supported by the high value of the performance indicator index (above 99). The indicator was instituted by WANO to facilitate the efficiency monitoring and data comparison between plants. It is calculated by weighted values of individual indicators and the scale is 0 to 100.

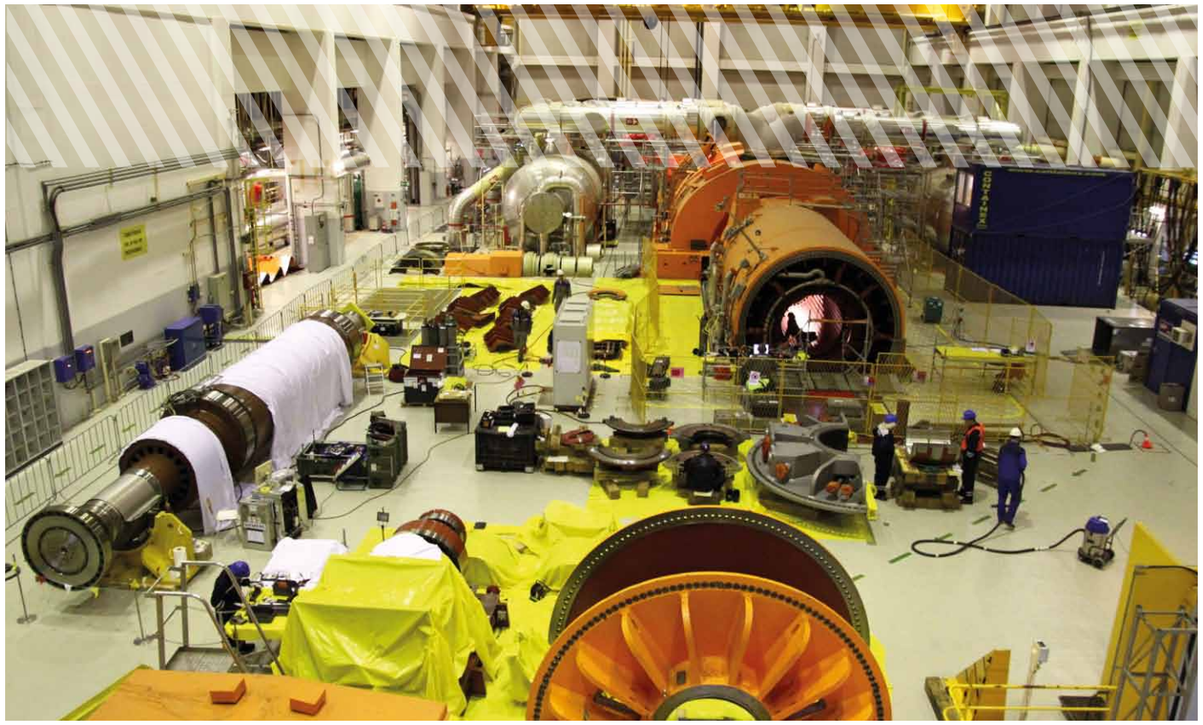
In March, a theoretical-practical drill in case of an emergency event was carried out within the international drill INEX-5 with 290 members of NPP taking part in addition to partakers from organisations in Austria, Croatia, Italy and Hungary as well as from the International Atomic Energy Agency (IAEA).

In November 2016 the WANO Peer Review Follow-up was completed whose assignment was to check the efficiency of action plans prepared on the basis of improvement suggestions after the completion of the 2014 WANO Peer Review. Preparations for Operational Safety Assessment Review (OSART) to take place in May 2017 were also started.

Coaching and observation of employees remains one of the areas high up in our priority list in view of detecting any deviations at work and taking suitable corrective measures. In this way achieving expectations and improving work practices are emphasised. The program is based on self-assessment which is documented. More than 470 observations were made during the plant's operations, which is much more than in previous years. The observations included all disciplines and work groups of different units.

TOTAL COLLECTIVE RADIATION EXPOSURE





CHALLENGES FOR 2017

Companies which set high goals for themselves will not overlook opportunities for improvements in spite of good results. Krško NPP has also set high goals since we committed ourselves in our vision to be an exemplary facility for safety and excellence at a global level. The 2016 achievements prove our commitment to follow our vision and to fulfil the mission on all our fundamental areas also in the future.

Legislation, the Intergovernmental Agreement coupled with high safety standards in the nuclear industry represent external framework of our activities and business, while the 2017 Business Plan and the Long Term Investment Plan constitute the framework documents reflecting our responsibility to the Owners. The Owners expect safe and stable operations at a high availability level; for the year without outage they expect an output at a level of 5.9 billion kilowatt hours of electric power, which means that all main, key and support work processes must be faultless - every employee, every day.

The most vital factor will be cost effectiveness which will keep the product competitiveness at the same level in the electricity market. The cost effectiveness is based on an important prerequisite that it must not affect the nuclear safety level and operational stability, which are our imperative challenge and task in 2017. One of the key success factors will be our maximum focus attention to areas which support the success growth of each individual and work teams which encourage the employees and ensure the efficiency and success of the facility.

In 2017 the operational safety of the plant will be reviewed by OSART.

The first area is the excellence in human performance, which means professionalism at work of every employee, always and everywhere. The second area is clearly communicated expectations by the management and coaching, which encourage creativity and motivation. The third area is the effective execution of the Corrective Action Program which ensures documenting, follow-up and systematic assessment of activities, which is also the basis for permanent improvements as evident from international operating experience. Focusing on forming and improving work processes which will, backed up by incorporating nuclear safety, acceptability and flexibility for users, safety at work, quality and productivity, ensure improved efficiency, is our fourth area.

In addition to our own critical assessment, which is the basis of improvement plans, and with permanent supervision by the Slovenian Nuclear Safety Administration, the operational safety of the plant will be also assessed by the Operational Safety Assessment Review Team (OSART) mission in 2017, organised by the International Atomic Energy Agency following the invitation by the Slovenian Nuclear Safety Administration.

The unanimous decision of the Owners on the plant's operational life extension binds us not only to meet regulatory and high nuclear safety standards but also to implement the Safety Upgrade Program. The Owners took the decision on the basis of the results of the feasibility study and amendment to the final safety report and technical specifications concerning the Krško nuclear power plant's operational life extension which was approved by the Slovenian Nuclear Safety Administration. Installation of additional safety systems which will ensure the resistance of the facility to extraordinary natural and other unlikely events comprises three stages: the first one has been completed, the second one is currently being undergone, while the third phase is to be completed by 2021. The program also includes spent fuel dry storage in robust, impermeable closed containers which need no equipment, system or fuel for cooling. Project design, licensing procedures and timely execution of the Safety Upgrade Program which will bring NPP to a comparable level of new facilities with respect to safety criteria, has proved to be a demanding challenge due to a complex public procurement procedure.

It is our responsibility to meet the requirements defined in the operating licence as well as to ensure high availability and competitiveness, including the implementation of the Action Plan after the 10-year safety review, systematic and complete verification of the plant's nuclear safety level, and continual implementation of and adherence to contemporary world safety standards. In 2016 major improvements were identified in the implementation of the plant's Periodic Safety Review Action Plan.

Environmental protection is included in all work processes of the plant. The measurement results demonstrate that all effects on the environment are far from administrative limits. Authorised organisations prepare a special annual report on radiation surveillance in the surroundings of the plant. The adequacy of our environmental management was also confirmed by the certification audit of our environmental standard.

RESPONSIBLE ATTITUDE TOWARDS THE ENVIRONMENT

01

The objective of the radiation monitoring is to monitor the plant operations and assess the effects on the environment and the population. This ensures that prescribed limits are respected.

NPP carries out radioactive measurements of the waste water discharges into the Sava River and emissions from the ventilation system into the air. Independently, external authorised organisations measure samples in the surroundings, in particular in the area around NPP within a distance of 12 kilometres. In addition, there are 13 automatic radiation survey stations located in the vicinity of the power plant which can detect changes in the natural radiation due to precipitations as well as potential changes due to the nuclear facility. The Sava River is monitored downstream for 30 kilometres from the plant by independent authorised organisations.

The effects of the NPP on the population are so low that they are practically immeasurable. However, they can be calculated by models for the most exposed group of the population and the annual dose can be compared with the dose received due to natural and other radiation sources. The assessment of an individual dose received by a critical reference group (an adult receiving the highest doses and whose food originates exclusively from locally grown food and fish) shows that the annual dose of such an individual has been approximately 1 microsievert or less than 0.1 percent of the dose on average received by a person due to natural sources of radiation (approximately 2,500 microsieverts). The annual dose for NPP is limited to 50 microsieverts per person (at a distance of 500 m from the reactor or more) from air and water media. The results of measurements taken are dealt with in detail in a special report for 2016, prepared for NPP by the *Jožef Stefan* Institute together with the Institute for Occupational Safety, MEIS and the *Ruđer Bošković* Institute. The report is published on NPP's website.

The effects on the environment by Krško NPP are so low that they are virtually immeasurable.

LIQUID RADIOACTIVE DISCHARGES

Wastewater may contain fission and activation products. The activity of fission and activation products (excluding tritium H-3, carbon C-14 and alpha particle emitters) amounted to 0.014 percent of the additional annual limit of activity for liquid discharges. The activity of discharged tritium was approximately 44.2 percent of the prescribed annual limit. Tritium is a hydrogen isotope found in water; in spite of being more active than other contaminants, it is less important due to its rapid secretion from the body in the event of an intake.

The plant observed administrative and technical regulations which require that in no discharge of such wastewater may the concentration of radioactivity in the channel exceed the prescribed limits.

DATA ON LIQUID RADIOACTIVE DISCHARGES IN 2016

RADIOACTIVE SUBSTANCES	ANNUAL LIMIT	PERCENTAGE OF THE LIMIT
FISSION AND ACTIVATION PRODUCTS	100 GBq	0.014%
TRITIUM (H-3)	45 TBq	44.2%

RADIOACTIVE RELEASES INTO THE ATMOSPHERE

The annual dose limit of 50 microsieverts is checked monthly for discharges into the air and water, for air in a 500-metre distance from the reactor by calculating a dose that could have been received by a person at such distance in one year due to external and internal radiation. The least favourable monthly average air rarefaction values and releases near the ground are presumed in the calculation of individual wind directions. The result for 2016 was 0.79 microsieverts (1.58 percent of the annual limit). More detailed data are given in the table below.

DATA ON RADIOACTIVE RELEASES INTO THE ATMOSPHERE IN 2016

RADIOACTIVE SUBSTANCES	TOTAL ANNUAL LIMIT	DOSE	PERCENTAGE OF LIMIT
FISSION AND ACTIVATION GASES (TOTAL)		4.88E-02 µSv	
IODINE (I-131 AND OTHERS)		5.88E-04 µSv	
DUST PARTICLES (COBALT, CAESIUM, ETC.)	50 µSv	2.39E-05 µSv	1,58%
TRITIUM (H-3)		0.70 µSv	
CARBON (C-14)		4.16E-02 µSv	

The plant's technical regulations were taken into account; therefore the radioactive concentrations in the air/dose rate within a 500-metre distance from the reactor did not exceed the prescribed value.

MEASUREMENTS OF RADIOACTIVE RELEASE AND ENVIRONMENTAL SAMPLES

The NPP laboratory for radioactive protection regularly checks air and environmental samples by an accredited method, thus having fulfilled conditions set by the standard SIST EN ISO/IEC 17025 since 2007, which is checked by a Slovenian accreditation body. The accredited measurements of radioactivity of periodically inspected samples of liquid releases are carried out by the NPP laboratory for radio-chemistry.

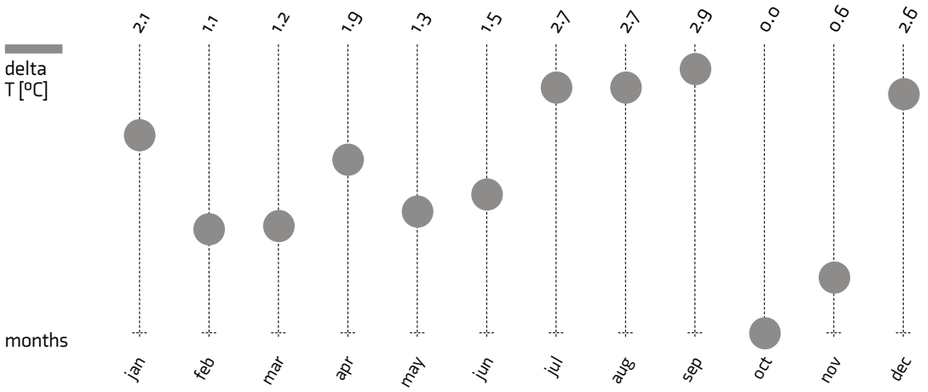
MEASUREMENTS OF THE SAVA RIVER AND GROUNDWATER PARAMETERS

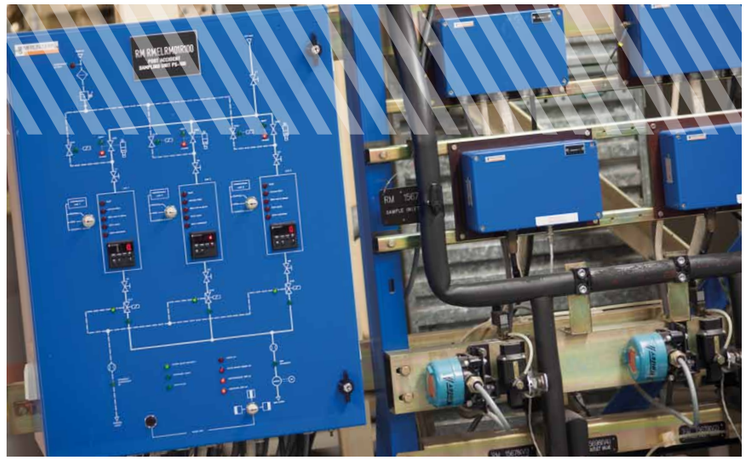
In accordance with the Environmental Permit (OVD) concerning the water emissions and the Water Permit we measured the Sava River temperature and its flow rate, and monitored the river level and the underground flow rates, and made monthly measurements of biological and chemical oxygen consumption.

Due to relatively unfavourable weather conditions in the second half of the year, on several occasions the highest permitted temperature level increase of 3 °C was reached. During the summer and winter precipitations were poor, which resulted in the low Sava River flow which in turn resulted in an increase in river water temperature due to the plant operations.

AVERAGE INCREASE IN THE SAVA RIVER WATER TEMPERATURE

Restriction: delta T 3 °C





Groundwater is regularly inspected by the power plant and authorised organisations; the ground water level and temperature in three boreholes and two locations on the Sava River are constantly measured and, on a weekly basis, in ten boreholes in the Krško-Brežice fields. The groundwater level was slightly lower in comparison with the previous year; however, the difference was small and was caused by the cyclic variation due to different quantities of precipitations.

DATA ON RADIOACTIVE WASTE AND SPENT NUCLEAR FUEL

In 2016, 86 packages of low- and intermediate-level radioactive waste (NSRAO) were stored, with a total volume of 23.2 cubic meters. The total volume of radioactive waste in the interim storage on 31 December 2016 was 3740 packages of a total of 2271.2 cubic meters in volume and the total activity of 17.1 TBq.

The spent fuel storage pool contains 1208 spent fuel elements from the previous 28 fuel cycles. The overall mass of spent fuel material is 470 tonnes.

ENVIRONMENTAL MANAGEMENT AND COMMUNAL WASTE

Since the end of 2008, the ISO 14001 environmental management standard has been operating in NPP. Since the certificate was granted, the system has been checked regularly on an annual basis by an external certification organisation. The second control system re-certification assessment in the new three-year cycle was carried out. It was established that NPP adequately respects the environmental management system requirements.

A special waste water treatment plant is used for communal waste water. Measurements of pH, temperature, non-soluble substances, chemical and biological use of oxygen at the outlet are taken by an external organisation, which is in line with the OVD requirements. The monitoring results prove adequate water treatment plant operations since all parameters were in line with the values prescribed by OVD.

Nuclear safety has always been our priority. A high level of nuclear safety of our plant is achieved by independent verifications and critical self-assessment of the results, on-going improvement of human performance and the safety culture, equipment and processes upgrading, learning from own operating experience and international practices, and by comparing with the best facilities in the world.

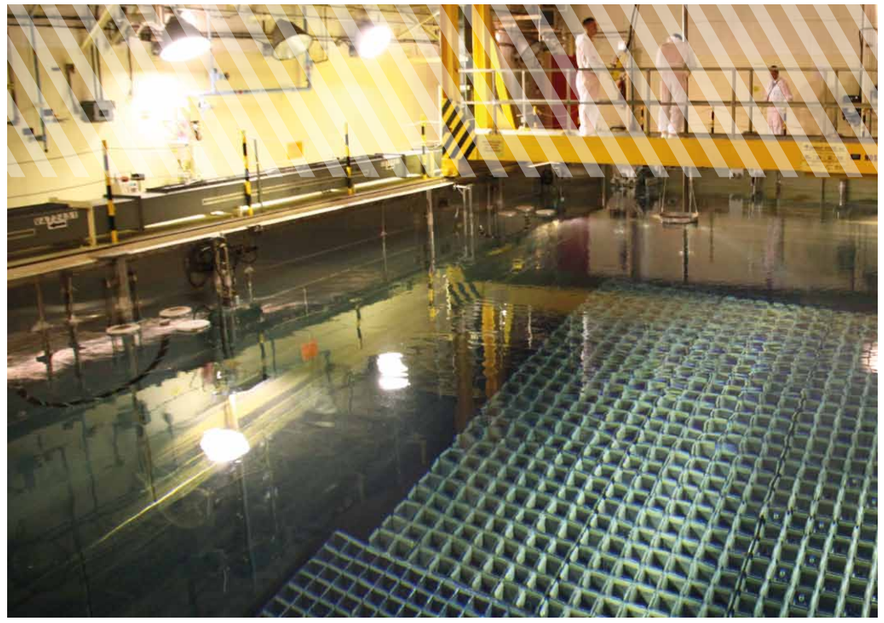
HIGH LEVEL OF NUCLEAR SAFETY

02

Krško NPP has paid special consideration to ensuring and verifying the implementation of legal regulations and standards related to nuclear technology as well as other modern technologies in the project designs (equipment modernisation), operational and maintenance activities, purchasing and other activities which all contribute to safe plant operations and the safety of the wider population. We are committed to ongoing progress, profesional work and personal growth. Our mission is achieved through independent verification, continual improvements of human actions and safety culture, own critical self-assessment of the results achieved, permanent comparison with the best comparable facilities in the world, operating experience at home and abroad, and continual assessment of safety and stability of plant's operations.

Due to its specific nature, the Krško Nuclear Power Plant had its attitude towards nature implanted in its very initial project (extensive research prior to site selection, strict respect of standards during construction). During the start-up and later operations, independent supervision of the effects on the environment (radioactive substance release into water and air, measuring of radioactivity in the environment, management of spent nuclear fuel, radioactive and hazardous waste) was established. A Protection and Rescue Plan in Krško NPP (NZIR NEK) was prepared defining organisation, measures and means to be followed in case of emergency events with potential radioactive effects on the environment. The plant's attitude towards the environment is in accordance with ISO 14001, internationally the most widely recognised standard concerning environmental issues.

One of the vital elements to be considered in maintenance and nuclear safety improvements lie in operating experience. The global nuclear industry was highly affected by the Japanese Fukushima Daiichi nuclear accident in 2011 following a powerful earthquake and devastating tsunami. As a response, a short-term action plan was prepared and implemented by NPP during the same year as the accident in Japan, and based on experience in the industry and regulatory requirements a long-term action plan was set up. In January 2012 URSJV issued a decision granting a comprehensive Safety Upgrade Program and a revised Program in 2016. NPP undertook to finish all work according to the Program by the end of 2021.



An important element of safety upgrade is implementation of operating experience at home and globally.

The Program includes a list of projects for upgrading certain safety systems, electrical safety supply systems, radioactive release surveillance, flood safety and spent nuclear fuel storage. Some projects have been finished, some are still in progress.

In March 2016, within the framework of the INEX-5 international drill, NPP took part in the theoretical-practical drill in the event of an emergency event. In addition to 290 plant's employees, external institutions participated, including URSJV, Brežice Regional Notification Centre (ReCO) and Notification Centre of the Republic of Slovenia (CORS), as well as similar organisations from Austria, Croatia, Italy and Hungary, and the International Atomic Energy Agency (IAEA). Within 23 minutes 394 persons were evacuated from the plant's premises.

The objective of the drill was to follow the scenario of an emergency event in an international drill and test the NPP's readiness in case of an emergency event and compliance with the NZIR NEK Plan, at the local as well an at the national level. This included testing the emergency procedures of plant's supporting organisations, organisation, equipment and skills of plant's intervention staff, suitability of Plan's procedures and other procedures designed for managing emergency event situation, the operative readiness of the centres and the operative readiness of the equipment and communication lines concerning the management of such an event. The emergency drill objective was to verify the international exchange of information in case of a nuclear accident.

At the NPP level, the purpose and goals of the exercise were achieved. The exercise proved the suitable readiness of the plant in terms of emergency event management aspects which were tested, and pointed out areas where improvements could be made.

Legislation and international standards require that every ten years, the plants carry out a safety review and report on the results to a relevant regulative body. By the end of 2016, NPP completed 75 percent of all actions, of which 97 percent were of the first time-group, 80 percent of the second one and 50 percent of the third time-group. All modifications and improvements related to the endorsed report on the Periodic Safety Review must be, according to legal requirements, completed within five years of the report endorsement date. We are pleased to report a visible advancement in the execution of the plan of modifications and upgrading of the plant. This is one of the key reviews which ensures log-term plant operation.

In November 2016 experts from the World Association of Nuclear Operators (WANO) carried out Peer Review Follow-up. They checked the efficiency of action plans implementation, which had been designed on the basis of improvement suggestions after the WANO Peer Review in 2014. Two areas were evaluated with the highest grade. Their decision was that most deficiencies were rectified in the said two areas, while on other areas several improvements had been accomplished representing a solid basis for successful rectification of the remaining deficiencies, providing the efforts continue in the future. These areas too were evaluated with high marks.

In 2016 preparatory work of OSART (Operational Safety Assessment Review Team) review started and is to take place in May 2017. A detailed inspection of the operational safety and our concern for nuclear safety will be carried out by the International Atomic Energy Agency (IAEA) on the initiative of the Government of the Republic of Slovenia. The purpose of OSART is to assess the implementation of IAEA safety measures and identify areas for improvement. This will be the fourth such mission to take place upon the request of the Slovenian Nuclear Safety Administration (URSJV).

The inspection will give the plant and the Slovenian Nuclear Safety Administration (URSJV) an objective assessment of the plant's condition in relation to IAEA standards.

The basic area of the inspection shall include Leadership and Management for Safety (LM) Training and Qualification (TQ), Operations (OP), Maintenance (MA), Technical Support (TS), Operation Experience (OE), Radiation Protection (RP), Chemistry (CH), Emergency Preparedness and Response (EPR), Severe Accident Management (AM), Human, Technology and Organisation (HTO). In addition two more areas will be inspected: Long Term Operation (LTO) and Probabilistic Safety Analyses Application (PSA).

The full-scope simulator, installed in our plant in 2000, represents a full-scale replica of the main control room of the plant with all control systems and displays, and is to be upgraded. Its upgrading project was started in spring 2016. In 2017, after the full-scope simulator had been relocated into a new computerised location and following the Factory Acceptance Test (FAT) at the premises of the supplier of the equipment, modification activities will take place to provide suitable setting for the replica of the new Emergency Control Room (ECR) which will be connected with the simulator.

This upgrading project will be an important contribution to training processes of all staff who directly take part in the provision of safe and stable plant's operation as well as timely and successful intervention in the event of emergency events.

Our developmental tasks and work priorities are part of Management Directive (MD 1), our internal directive and task document. These tasks have been delineated to reflect the Management expectations and established polices as well as our priorities. In 2016 our focus was on improvements in three areas: human excellence, management expectation and coaching and the implementation of the Corrective Action Program. In addition to these three areas, our next year's special attention will be paid to moulding more efficient work processes.

In December 2016, our Environmental Management System and Occupational Health and Safety Management System were reassessed by an external certification body with respect to compliance with respectively ISO 14001 and BS OHSAS 18001.

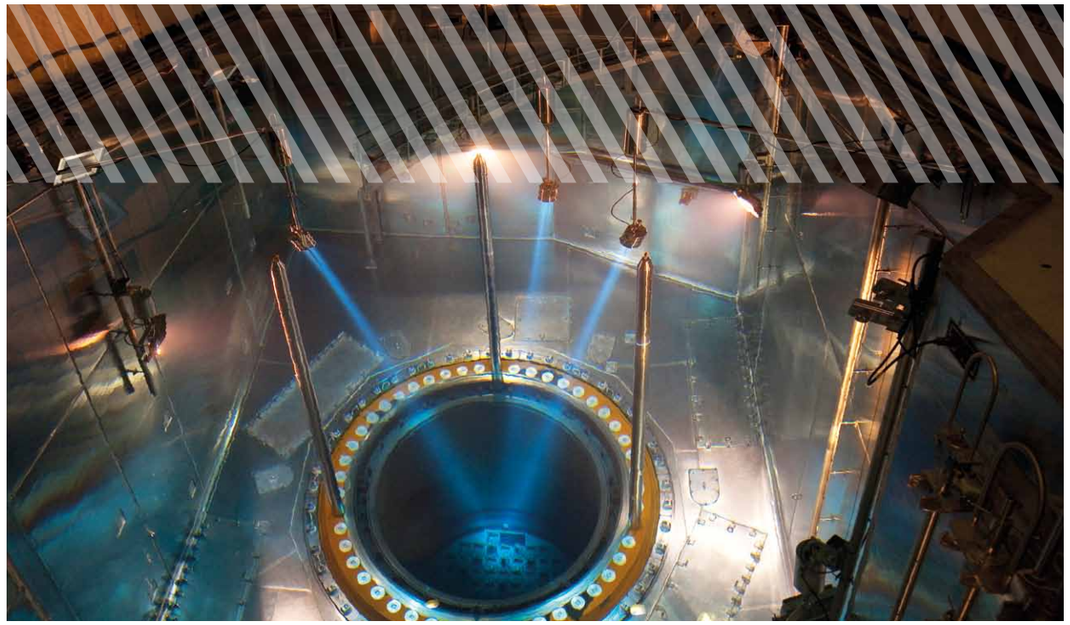
PROCESS AUDITING

Krško NPP operations represent specific risks due to enormous stored power, residual heat and radioactive material in the reactor core. Therefore, the policy of the plant is to implement a management system to ensure a synchronised operation of all plant management activities. Its goal is to achieve and continually improve safety by planned and systematic measures which enable the fulfilment of these requirements and at the same time ensure that the health, environment, physical security, quality and economic aspects are not addressed separately from safety requirements, which prevent their potential negative effects on safety. Therefore nuclear safety in all areas of the plan's operation is our first priority, placed before production targets, operational availability and cost limits. By encouraging and respecting the principle of safety culture at all levels, each NPP's employee, within their individual expertise and/or skills, responsibility and competence take part in ensuring nuclear safety, the safety of employees, population and environment. Our principles are manifested in the efficiency of inter-dependant processes within NPP and support the overall facility's operations.

The compliance of NPP's programs and the efficiency of the processes are audited by independent internal audits when we assess the efficiency of activities which have direct impact on the structures, systems and components by assessing their effects on safe and reliable plant operation. These audits are regularly planned for those areas in which Quality Assurance Program requirements are respected. These areas are:

- Organisation and administration;
- Corrective Action Program and operating experience;
- Production;
- Maintenance;
- Engineering;
- Radiation protection;
- Chemistry and radioactive waste management;
- Purchasing;
- Training;
- Ensuring physical security;
- Protection and rescue plan.

Audits are carried out by qualified staff without direct responsibilities for the area being assessed. Every audit and results of such audit is supported by a report prepared in writing, which is sent to individuals responsible for the relevant process which includes harmonised proposed corrective measures and deadlines for their completion. NPP's management is informed of the audit conclusions at the management review. The auditors must follow-up the implementation and effectiveness of the corrective measures.



OBSERVATION AND COACHING

Observations and coaching will be one of our high priority areas to be addressed in 2017. Our dedication to these issues will without fail bring improvements and good results.

Observations and analysis of work processes in the technological area are conducted by the management and other staff in order to identify deviations and take relevant corrective measures. The fundamental objective of observations is not to criticize an individual, but rather to detect deviations in the work processes and their rectification, finding methods for their improvements and to underline the desired standards and good working practices. Instructions for the preparation, execution and observation results analysis are defined in a special administrative procedure which ensures uniformity of observation. The procedure has been revised and an application has been developed enabling observations follow-up.

In 2016, more than 470 observations were carried out in NPP on-line, many more than the previous year. The focus was on the observation of individual human behaviour at work and the emphasis was on the desired behaviour coupled with immediate correction of the behaviour which was not in line with the expected one. All disciplines and work groups underwent the observation procedure in different organisational units. The results analyses of these observations showed that some work processes could be improved, in particular in the sphere of work preparation and documentation, especially work practices and housekeeping.

In 2016 modernisation and technological upgrading have been continued which has a direct impact on greater nuclear safety and plant operational reliability. Upgrading is aimed at system and structure adjustment to ensure safety and plant's operational reliability at simultaneous operation of Brežice hydro power plant. The second phase includes modernisation according to Safety Upgrade Program which is to ensure development and expansion and development of safety solutions in case of unlikely accidents.

03 TECHNOLOGICAL MODERNISATION AND SAFETY UPGRADE PROGRAM

Technological upgrading investment in 2016 included 17 minor modifications during the plant operation, and 24 technological modernisations carried out during the regular outage as planned. Investments were smaller than planned mainly due to the change in schedule of the Safety Upgrade Project, and the beginning of two projects, of the Spent Fuel Dry Storage and the Operational Support Centre. As part of the Safety Upgrade Project, works were started relating to the emergency control room installation. Projects were prepared and international public procurement was carried out for other safety upgrading projects and for major technological modernisations planned for 2016 outage and later.

Projects completed during 2016 outage include the following major groups:

ENSURING SAFETY AND OPERATIONAL RELIABILITY

The major modernisations include projects related to generator system modernisation which improved the plant's operational reliability. Modernisations coupled with measures undertaken will ensure safe and reliable operation of Krško NPP also with simultaneous operation of Brežice hydro power plant. The replaced auxiliary feedwater turbine driven pump and its steam turbine significantly increased the reliability of the auxiliary feedwater system, thus decreasing the likeliness of core damage.

MODIFICATION OF THE NUCLEAR FUEL MECHANICAL DESIGN

With region 31 and in 29th fuel cycle, *16 x 16 Modified VANTAGE+* type nuclear fuel was loaded in the reactor for the first time. This type of nuclear fuel was designed for Krško NPP by the manufacturer on the basis of the existing *16 x 16 VANTAGE +* nuclear fuel type with some modifications:

- tuning the mixing vane pattern of mid-grids (reduction in susceptibility of a fuel element to own vibration);
- increase in spring contact area on the lower, middle and upper grid (increased resistance to fuel cladding wear due to grid-to-rod fretting);
- removal of atypical couples of mixing vanes of the mid-grids (restoration of the reserve up to the boiling crisis limit);
- removal of cross-communication holes on the bottom nozzle (increased resistance to fretting).

The aim of these modifications was to improve the fuel element resistance to cladding damage due to grid-to-rod fretting and damage due to debris fretting. The new design of the middle grids led to certain improvements in grid manufacturing process.

The 29th fuel cycle features upgraded fuel mechanical design.

REPLACEMENT OF THE GENERATOR LOAD BREAK SWITCH (GLBS)

The replacement of the GLBS is one of the modernisations of the generator system which resulted in an increase of operational reliability of the plant. The project includes the GLBS replacement with all related equipment and over-voltage protection, due to wear, unavailability of spare parts and generator increased declared capacity.

As the new GLBS works without water cooling and compressed air, the existing compressor station as well as the cooling system of the old GLBS were removed.

REPLACEMENT OF ISOLATED PHASE BUS DUCT COOLING UNIT

This project is part of the overall generator system modernisation program and it includes the replacement of the 21-kV bus duct cooling unit with a modern double 100 percent redundant system with the cooling power meeting the requirements of the rated generator parameters. It also included the control system modernisation. This is another project adding to the operational safety of the plant.

REPLACEMENT OF EXCITER AND VOLTAGE REGULATOR

The third project concerning the generator system modernisation includes the main generator exciter and voltage regulator replacement. The regulator was replaced, while the replacement of the exciter is planned for the 2018 outage.

The installation of the modern dual-channel digital voltage regulator means we have acquired a redundant system and its improved surveillance. At the same time certain modes of failure typical for the previous regulator were eradicated with the result of increased plant availability. At the same time, the risk of a drop in the plant's output due to unavailability of spare parts was reduced.

The exciter replacement will complete the generator system upgrading to reach the 880 MVA apparent power.

REPLACEMENT OF 125 VDC AND 220 VDC CHARGERS

Due to their lifespan expiration and unavailability of spare parts, all four battery chargers were replaced; their function is to supply power to control and instrumentation circuits for safe plant shutdown following AC power supply failure (off-site power supply and diesel generators).

The chargers maintain the battery capacity and supply power to consumers when AC power supply is available. They are key components in ensuring nuclear safety. In the event of their failure, power supply to the consumers must be restored within two hours or the plant shutdown procedures started.

The replacement also included new components. The modification resulted in improved surveillance by the control room staff over the chargers as the plant's information system displays the status of individual alarms of each charger.

REPLACEMENT OF VOLTAGE REGULATORS ON DG1 AND DG2

The project involves the replacement of diesel generators DG1 and DG2 voltage regulators together with associated protective-control equipment. The replacement started during the 2015 outage on DG1 and was completed during the 2016 when voltage regulator replacement was completed on DG2.

For aging reasons all active electrical equipment in boxes fitted on the DG and on the compressor station for start-up air supply was replaced.

The modernisation resulted in greater availability and reliability of DG operation, which is vital for the provision of power for all safety systems and components in the event of loss of off-site power.

System upgrading ensures increased plant safety and reliability.

REPLACEMENT OF INADEQUATE CORE COOLING MONITORING SYSTEM (ICCMS) CONTROL CABINETS

Due to ageing and unavailability of spare parts, software and hardware of the inadequate core cooling monitoring system (ICCMS) had to be upgraded.

The new digital platform is the state-of-the-art version of digital safety protection systems from the manufacturer. The new system will ensure uninterrupted equipment operation and maintenance and will enable vital core parameter indication also for the new emergency control room.

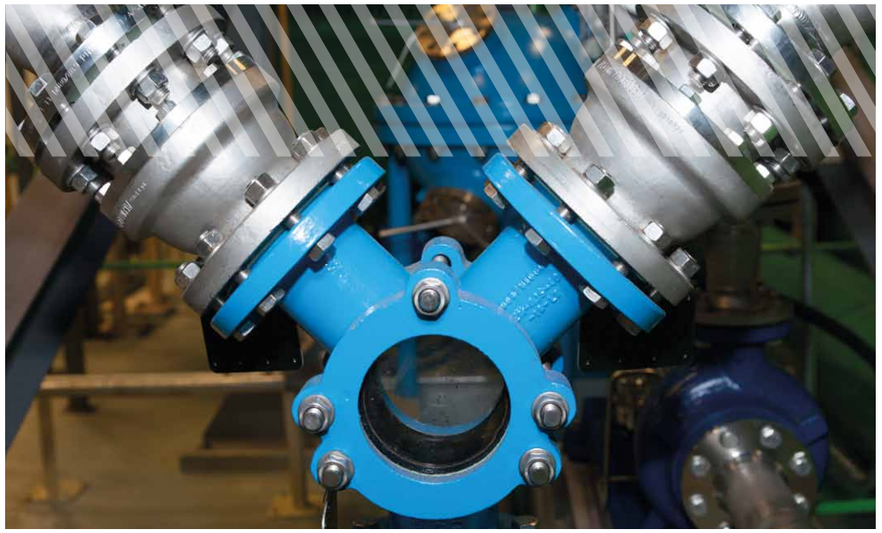
UPGRADING OF CONDENSER TUBE CLEANING SYSTEM

The upgrading involved the replacement of the old system for mechanical condenser tube cleaning with a new robust system with fewer moving parts which provides greater reliability of operations. The condenser tube cleaning system provides normal heat exchange conditions, which is significantly poorer in unclean tubes, thus indirectly affecting the plant thermal performance.

The modification included all four outlet 72-inch pipes and strainers, the recirculation and control units where the classic relay installation was replaced by programmable logic controllers (PLC). Each section of the system can be operated from the main control room. The upgrading also included the sampling system of the condenser cooling system.

REPLACEMENT OF AUXILIARY FEEDWATER TURBINE-DRIVEN PUMP (AF TDP)

During the 2016 outage the auxiliary feedwater turbine-driven pump and its steam turbine were replaced. A local control panel was fitted for operating the pump with slight changes of the monitoring system. The following components were installed into the main control room: module with a pushbutton to stop the pump, indicator light, pressure and vibration display, and the common alarm from the local panel. The new pump is of a robust design and can run without additional support systems; it features quick start, runs without AC and DC power supply, runs in submerged conditions and contains electrical and mechanical over-speed protection. The pump provides water supply to the steam generators under all project conditions, thus improving the auxiliary feedwater system reliability and decreased likelihood of core damage.



SAFETY UPGRADE PROGRAM 2013–2021

The Safety Upgrade Program (PNV) is based on the decision on the plan's operational life extension and experience following the nuclear accident in Japan. The plan was endorsed by URSJV and comprises the construction of additional safety systems to provide reactor core and spent fuel cooling and represents an even higher level of resistance of the plant in case of extraordinary natural and other unlikely events such as extreme earthquake, flood, and aircraft crash. Additional safety systems will enable the integrity of the containment and minimum releases to the environment also in the event of the worst accident similar to that in Japan in 2011.

The Program consists of three phases and comprises projects of upgrading certain safety systems, safety power supply, radioactive release surveillance, flood safety and spent nuclear fuel store.

During the 2013 outage, the first phase of the safety upgrade was finished. It included installation of a Passive Containment Filtered Pressure Relief Ventilation System, followed by passive autocatalytic recombiners.

After 2013 intensive work of the Phase 2 has been in progress, including:

- upgrading anti-flood protection of NPP buildings,
- upgrading operational support centre,
- constructing an emergency control room (ECR) and a technical support centre,
- installing additional pressure relief valves in the reactor coolant pressure relief system,
- installing additional spray systems for nuclear spent fuel pool cooling and a connection for a mobile heat exchanger, and
- installing an additional pump and a heat exchanger for alternative long-term cooling and residual heat removal, and
- spent fuel dry storage.

SAFETY UPGRADE PROGRAM IN 2016

The flood protection project was finished. During the outage work was started on the emergency control room construction, while project documentation was being prepared for other projects and main equipment ordered.

In the public procurement procedure, the contractor for building work was selected. In the second quarter of 2017, the operational support centre upgrading project is expected to be started.

The ECR project represents modification which is the core of Phase 2 of the Safety Upgrade Program, and consists of three phases:

- Phase 1 - Outage 2016 scope (preparatory work)
- Phase 2 - On-line (OL) 29-cycle work (preparatory work)
- Phase 3 - Project completion and putting into operation of the ECR.

During the 2016 outage the majority of Phase 1 was completed, including:

- installation of seven new gauges in the containment for measuring level, pressure and flow;
- replacement of four primary coolant temperature elements with four double temperature elements, thus enabling the connection of one pair of double elements to the inadequate core cooling monitoring system for the ECR, while the other will be wired in the ECR; a containment temperature measuring element was also installed;
- rewiring of electric breaker for internal electric distribution (between the safety bus MD2 and transformer T2, bus MD2 and diesel generator DG2, etc.), which enables local power supply of supply breakers independent of the main control room;
- minor rewiring of certain components to support main-computer-room-independent operation (e.g. instrumentation air supply compressors, chemical and volume control system positive displacement pump of the primary system, etc.);
- installation of two new transfer panels to be connected during the 2018 outage.

During the international public procurement procedure for spent fuel dry storage, a Contractor of the overall project was selected; therefore, the preliminary work is to start in the first quarter of 2017. This type of storage is passive and requires no device, system or fuel.

Conceptual design of the phase three safety upgrade was also prepared. At the beginning of 2017, URSJV issued their agreement to the contents and schedule of the PNV program.

TECHNOLOGICAL MODERNISATION DUE TO BREŽICE HYDROPOWER PLANT

MODIFICATIONS OF THE CIRCULATING WATER SYSTEM DUE TO BREŽICE HYDROPOWER PLANT EFFECTS

The modification is one of the measures needed to rectify negative effects of the Sava River water level rise due to the construction of the water reservoir for Brežice hydropower plant.

It includes inlet building modifications:

- installation of additional floodgates to block out inlet building system of the circulating water to facilitate the maintenance of trash rakes, flow strainers and the pumps of the system,
- reconstruction and modernisation of the inlet system and the replacement of trash cleaning unit with two new ones, increasing the capacity of travelling strainers, improvement of travelling strainers rinsing, and modernisation of travelling strainers safety gates, water level measuring and electrical equipment and controls;
- hydro-mechanical modification of the piping for circulating water de-icing by installing a new pump for water inlet through additional nozzles on the inlet strainers, and
- modification and relocation of manipulation platform due to the Sava water level rise.

Appropriate inspection, maintenance and upgrading ensure the operational readiness of equipment. Maintenance falls into the categories of preventive maintenance carried out at specific intervals defined in programs, predictive maintenance which is used for establishing the status of equipment (diagnostics), and corrective maintenance aimed at re-establishing the state of equipment to ensure its designed functionality.

MAJOR MAINTENANCE ACTIVITIES AND INSPECTION OF PRESSURE BOUNDARIES

04

The most vital maintenance activities were carried out during the outage, while others were completed during operating as on-line maintenance - most of them in accordance with the preventive maintenance plans and the programs related to the management of ageing equipment and components.

The 2016 outage included the following regular outage activities: overhauls, revisions and testing of high-voltage and low-voltage motors, circuit breakers and other electrical equipment, instrumentation calibration, inspection of equipment degradation suffered during operation by means of non-destructive methods, the overhaul of valves, ventilation system and other mechanical equipment, the overhaul of diesel generator set, various secondary system pumps, etc.

Major maintenance activities included: main electric generator overhaul, turbine valves overhaul, the replacement of pressuriser spray valve, the 10-year review of both steam generators secondary side, the repair of the inlet and outlet internal areas of the heat exchanger for safety components cooling, the replacement of two heat exchangers on the containment cooling units, the replacement of four inverters, and various other tasks according to the equipment ageing monitoring program.

The results of all inspections using the non-destructive methods demonstrated that the integrity of pressure boundaries is immaculate as no indication was found to suggest degradation during operations.

In accordance with the secondary systems component inspection program related to erosion and corrosion effects, there were no instances detected which would necessitate corrective measures.

Other maintenance work was carried out during plant operation in accordance with the program; however, there was no major corrective work done which would essentially affect plant safety and/or availability.

The results of all inspections confirmed the integrity of pressure boundaries.

Performance indicators used to follow up the achievement of targets, efficiency and improvements in certain areas of the plant operations facilitate setting new goals after relevant improvements have been made, the adjustment of priorities and the provision of assets to ensure successful operation of the plant. In addition, these indicators allow comparison with other power plants.

PLANT PERFORMANCE

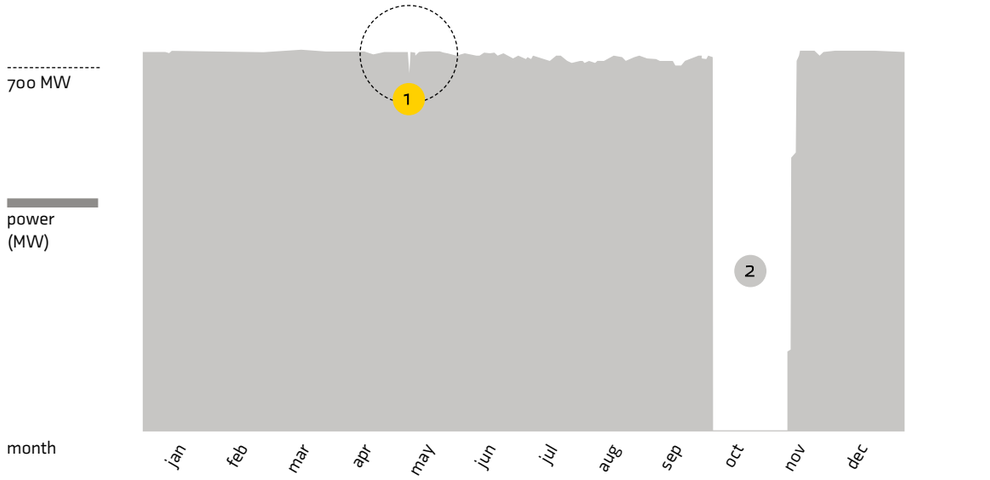
05

In 2016, the NPP's total output at the generator outlet was 5 714 517.46 MWh of gross electricity, or 5 431 273.62 MWh of net electricity. This annual output was by 0.58 percent higher than planned; the planned figure was 5 400 000 MWh. The time availability factor was 90.20 percent while the unit capability factor was 89.62 percent.

The extensive and complex regular outage with refuelling lasted 36 days, from 1 October to 5 November 2016.

OUTPUT IN 2016

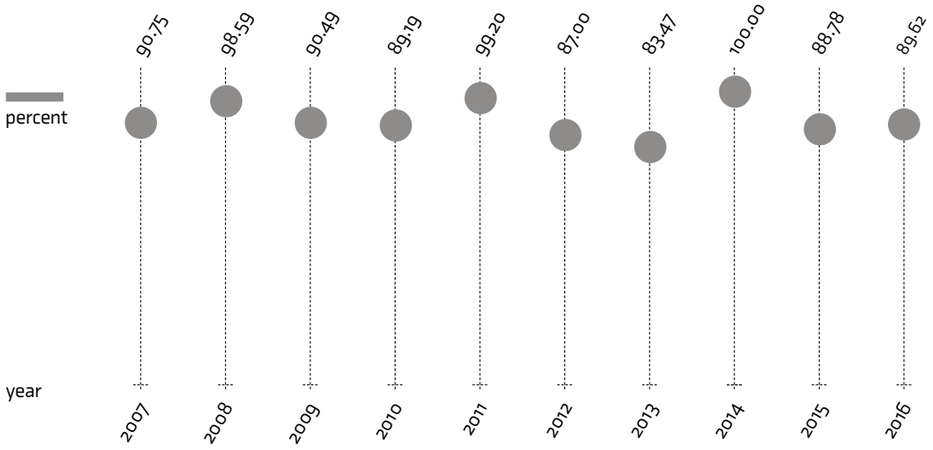
Gross energy produced: 5 714 517.5 MWh
Net energy produced: 5 431 273.6 MWh
Availability factor: 90.2%
Capability factor: 89.6%



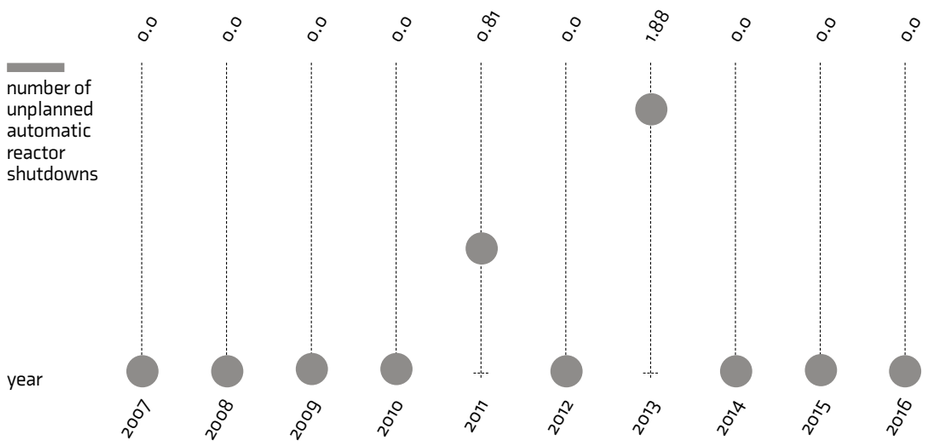
OPERATIONS

UNIT CAPABILITY FACTOR

NEK target for 2016: ≥89%



UNPLANNED AUTOMATIC SCRAMS PER 7000 HOURS CRITICAL



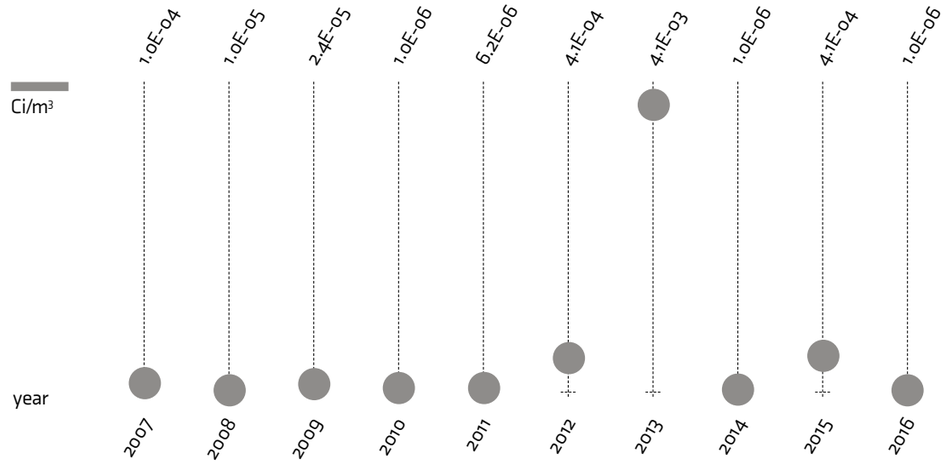
NUCLEAR FUEL AND SECONDARY CHEMISTRY

At the end of cycle 28, the specific activity of the primary coolant and its contamination was far below the limits prescribed by law and half the value of the previous cycle. There were no damages to the nuclear fuel or deterioration of its integrity.

With the start of cycle 29 and until the end of 2016, the nuclear fuel reliability indicator met the targets set by NPP and INPO (Institute for Nuclear Power Operations), which proves the reactor core operational reliability without nuclear fuel leakage.

FUEL RELIABILITY INDICATOR

NEK target for 2016: ≤ 3.0E-04



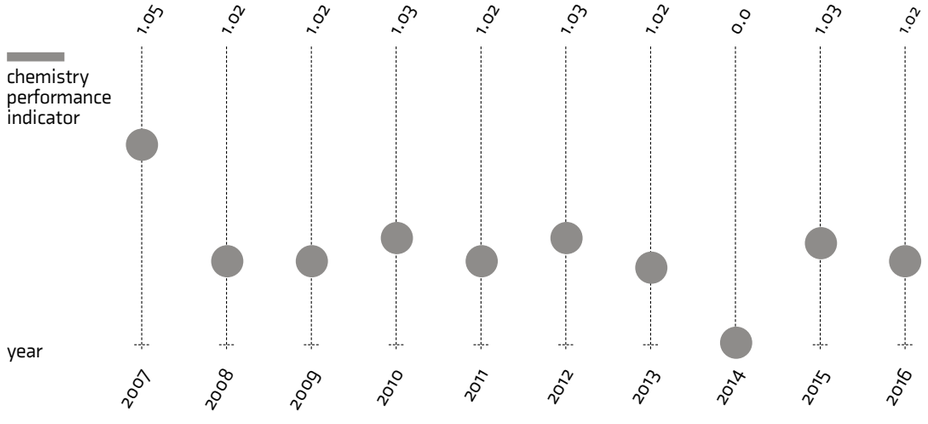
The chemical program of the reactor coolant and the secondary cycle was satisfactory. The chemistry and radiochemical parameters were maintained within technical and chemical specifications. The ingress of aggressive chemical contaminants into the primary and secondary systems was comparable to previous years and remained at a low level. This is the basis for ensuring long-term plant system availability and it contributes to nuclear fuel integrity and reactor coolant as well as to keeping the dose figures within limits.

The radiation source inventory, resulting from corrosion products in the reactor coolant, remained at the level comparable to previous years.

Following the replacement and repair of some materials in previous fuel cycles coupled with stable operations, the release of iron and iron oxide particles due to erosion and erosion corrosion in the secondary cycle was reduced. In 2016, the WANO indicator of the secondary chemistry was 1.015. The target indicator value of ≤ 1.02 was thus achieved.

Monitoring of key chemical parameters was effective, as well as the cleaning systems which contributed to the effective chemistry program. There was no increase in active corrosive mechanisms detected in the water cooling systems media.

CHEMISTRY PERFORMANCE INDICATOR



SERVICE AND EQUIPMENT PURCHASING

There has been an increase in administration coupled with relevant procedure harmonisation in the Krško NPP since the new Public Procurement Act (ZJN-3) which replaced the Public Procurement in the Water, Energy, Transport and Postal Services Act (ZJNVETPS) came into force. Purchasing staff took part in extensive training programs.

In the local market, there were no major changes in cooperation with business partners. Adjustments and optimisation of continued services via public procurement were successfully completed. The start-date for building work kept being postponed due to public invitations to tender. We worked together with HESS on joint projects related to the Brežice hydro power plant construction. Good coordination, timely and proper communication, and harmonised views constituted a solid foundation of good and successful cooperation in the future.

As for foreign markets, we continue to note great disinterest of American suppliers and their unreadiness to appreciate our strict respect of our laws and obligatory actions on the part of a customer, in particular relating to ZJN-1 (Public Procurement Act). The suppliers often took no respect to deadlines and change the wording of contracts, which resulted in their elimination from the procurement procedure. New power plant construction and extensive orders which our suppliers receive, slow down their response to our spare parts enquiries, which results in great delay of our order processing.

Krško NPP has joined numerous international professional organisations, which enables our employees to remain up-to-date with and to co-create the best practices, and exchange and transfer experience to their work environment. An active role and international inspection significantly contribute to the improvement of work processes and the achievement of good safety and operational results.

INTERNATIONAL COOPERATION

06

PARTICIPATION IN 2016

The President of NPP's Management Board is a member of the Management Board of WANO, the Paris Centre, which comprises the representatives of all countries as members of the Centre. One of NPP's employees has temporary employment in the WANO London Centre and is a senior adviser in the Operating Experience Central Team.

In the period from 7 to 11 November WANO Peer Review Follow-Up took place in Krško NPP to assess improvements in work processes as recommended by the international reviewers after the previous WANO Peer Review conducted in 2014. The conclusion was that all key work processes showed considerable improvements, two of which were assessed as excellent.

For several years now NPP has been taking part in WANO and INPO missions. Our experts have taken part in 46 missions worldwide. In 2016 two members of NPP took an active part in WANO Peer Review missions, i.e. *Daya Bay* plant in China and *Cruas* in France.

Through the Technical Assistance Missions our plant has received over 34 such missions in the past years with topics which cover various areas of the plant's activities. In 2016 two missions took place on the subject of readiness in case of an emergency event, and presence of managers in the workplace. A member of NPP's expert staff took part in a foreign material exclusion mission at Loviisa plant in Finland.

Krško NPP representatives take part in professional training organised by various organisations. Due to good results of our plant, it has been a model practice for other nuclear facility operators and a source of good practices in various fields of work. Through WANO we have been visited by representatives of ten countries for 28 different spheres of work.

In order to share operating experience, NPP sent to WANO eight reports on events in our plant.

Together with NUPIC, representatives of NPP took part in eight audits of safety equipment suppliers in the USA and Europe.

Krško NPP takes an active part in some of the important areas of EPRI activities, including:

- Equipment maintenance of nuclear facilities (NMAC - Nuclear Maintenance Applications Centre);
- Equipment upgrading, purchasing and qualification (PSE - Plant Support Engineering);
- Non-destructive testing and research (NDE - Non-Destructive Examination);
- Exchange of experiences in applying accident analysis programs (MAAP - Modular Accident Analysis Program User Group);
- Exchange of experience concerning erosion/corrosion issues (CHUG - Checworks Users Group).

Due to good results, our plant is becoming an example to other nuclear plant operators.

Our plant has participated in PWROG annual conferences (Pressurized Water Reactor Owners Group), organised separately for nuclear facilities from Europe.

We also took an active part in both conferences of the Slovenian and Croatian Societies of Nuclear Experts.

MEMBERSHIP IN INTERNATIONAL ORGANISATIONS

Krško NPP is a member of the following organisations:

WANO

All nuclear facilities in the world are members of the World Association of Nuclear Operators (WANO). NPP has been a member of this organisation since its establishment in 1989. Its aim is to promote the highest standards of operational safety, availability and excellence of nuclear power plants. WANO runs programs for sharing operational experience, reviews plants' operations, assists member plants in their operational improvement programs, encourages communication, and promotes benchmarking and copying best practices.

INPO

From as early as 1988 NPP has been a member of the Institute of Nuclear Power Operations (INPO) in the USA. Its primary objective is to increase the level of nuclear power plant safety and reliability. All American nuclear plants and/or their operators are INPO members, and through it they are members of the WANO organisation. Its membership extends both to nuclear operating organizations in other countries, as well as to the manufacturers and designers of nuclear facilities. With the start of 2017, INPO will stop their international program, and with it our membership will end.

IAEA

The International Atomic Energy Agency (IAEA) is an independent intergovernmental organisation which operates within the United Nations Organisation. Its primary objective is to help members in planning and using nuclear technology for various peaceful purposes. These include electricity generation as well as technology and/or know-how transfer in this field. The IAEA develops safety standards that promote achievement of a high level of safety in the use of nuclear energy and in protection of the population from ionising radiation. The organisation operates on the basis of various programs such as control over nuclear material, nuclear technology application, nuclear energy, nuclear safety and technical cooperation. As part of these programs, the IAEA organises OSART (Operational Safety Review Team) missions which involve visiting power plants in order to inspect and assess their operational safety.

EPRI

EPRI (Electrical Power Research Institute) is a non-profit and independent organisation for research in the area of electricity production and environment protection. It was established in 1973 in support of the development of the electrical industry. The Institute currently covers all aspects of production, transmission and use of electricity.

NRC

NRC (Nuclear Regulatory Commission) is a US independent nuclear regulatory commission to ensure safety and protection of people from radioactive nuclear material, reactors and nuclear waste reprocessing plants. Through URSJV and IJS the Krško NPP has become a member in several programs which gives us access to information and literature in various areas.

PWROG

PWROG (Pressurized Water Reactor Owners Group) is the association of all the pressurized water reactor (PWR) operators and Westinghouse. It offers various programs related to improved equipment, optimisation of technical specifications, reduced number of unplanned shutdowns, increased power of the plant, simplification of the plant systems, the manufacture and use of nuclear fuel, analyses by contemporary programs and analytical methods, etc.

ENISS

As a member of ENISS group (European Nuclear Industry Safety Standards), Krško NPP took part in the preparation of the EU nuclear industry position in drafting amendments to legislation in this industry. The work group acts within FORATOM, an EU nuclear industry organisation.

NUPIC

NUPIC (Nuclear Procurement Issues Committee) is a committee of American and other nuclear facilities for joint evaluation of safety class equipment suppliers. The aim of this organisation is to improve the process of locating the suppliers of high standards of quality.

Systematic in-house staff training, the training programs at equipment suppliers' premises and at international professional associations coupled with the transfer of knowledge ensure the high level of professionalism and enthusiasm of employees. Following our essential values - safety culture, excellence in relationships and integral development of each employee - we materialise our mission.

PROFESSIONALISM AND ENTHUSIASM OF STAFF AS THE BASIS OF SUCCESS

07

The fundamental values which are part of our work processes and relationships include safety culture, excellence in relationships and integral personal development. At the same time, these values are the reference line of our actions and the basis of our vision and mission.

INTEGRAL STAFF DEVELOPMENT

NPP's planned staff processes, timely staff recruitment and systematic development of all employees ensure long-term safe and stable operations.

We are aware of the fact that work can be accomplished safely, efficiently and at a high quality level and all work areas improved only by professional, well qualified and competent individuals. The established professional training programs are intended to acquire and reinforce professional knowledge and skills which ensure successful completion of all work tasks at a high professional level and in accordance with international standards. Reinforcement of knowledge and transfer of skills from highly experienced staff to younger generations are provided through training programs at the work place and mentorship. At the same time we take steps to bring up and develop the next generation for key positions in the plant. In human resources special attention has been paid for the last few years to staff enthusiasm and implementation of new managerial processes, such as annual development discussions.

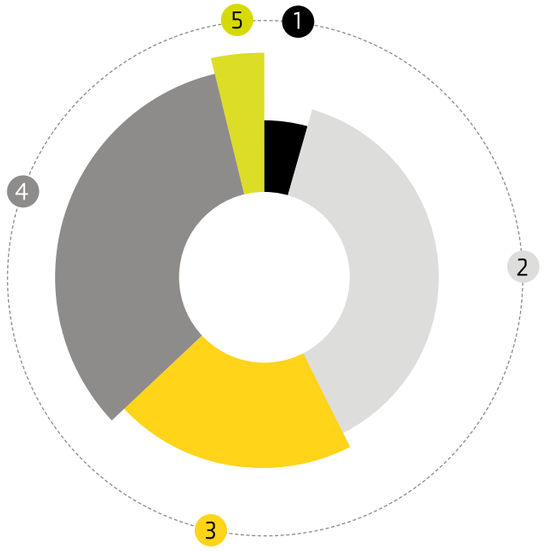
Staff with expertise and skill, while possessing suitable values, are of strategic significance and one of the key factors of nuclear safety, long-term stability, competitiveness and success.

In 2016 we provided stable and suitable staff structure in all work processes of the plant. The process of generation replacement is slowly coming to an end. Timely recruitment of new staff in previous years resulted in successful staff replacement due to retirement. We employed only one new member; the annual staff turnover was 3.9 percent.

At the end of 2016 there were 617 employees, of which 42 percent held high professional and university education. The employee structure included 9 doctors of science and 15 staff with master's degrees. The female share of the staff was 15 percent. At the end of the year there were 7 students receiving our scholarship at the second degree Bologna university study program.

Professional and dedicated staff – work processes performed efficiently and at a high quality level.

STAFF STRUCTURE PER LEVEL OF EDUCATION



1	Up to level 4	4.4%
2	Level 5	38.1%
3	Level 6	20.6%
4	Level 7	33.1%
5	Level 8	3.9%

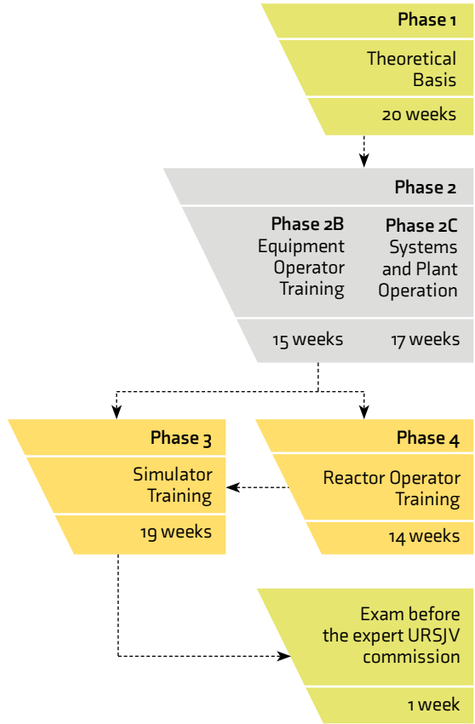
OPERATIONAL STAFF TRAINING

Training courses comprise initial and on-going licensed staff training, and on-going professional training of equipment operators.

Initial licensed staff training for reactor operators was conducted in accordance with national legislation requirements and practices in the nuclear industry. The 85-week training course is structured in four phases of different forms of training aimed at preparing the candidates for independent work in the main control room. In December, nine candidates successfully completed phase 3 training - Simulator Training and phase 4 training - Reactor Operator Training. Seven of the nine candidates successfully passed the exams for reactor operator licence before a commission appointed by URSJV.

In November, three candidates started phase 1 training - Theoretical Basis and will continue in 2017 with equipment operator post - phase 2B and phase 2C in systems and plant operations.

INITIAL TRAINING FOR LICENSED OPERATORS



On-going professional training of licensed staff was conducted in accordance with the approved outline program and NPP internal procedures. The training was conducted through lectures and simulator scenarios, during four weekly segments, attended by all operations crews and other licensed personnel.

Final exams were sat before a commission appointed by URSJV; all ten candidates were successful; of these, four candidates were awarded their first senior reactor operator licence, three of them successfully renewed their senior reactor operator licence, while three candidates successfully passed the exams for shift engineer.

The on-going professional training for equipment operators was conducted in parallel with the training for licensed staff, in four weekly training segments. The program focused on technical expertise and hands-on training by using system operating procedures in the technological building or with the full-scope simulator. Other training was rendered aimed at refreshing and upgrading existing knowledge and skills which equipment operators need in their day-to-day work.

A group of twenty operational staff attended four-day hands-on training, which included handling refuelling equipment. Training was aimed at preparing the participants for safe and first-class performance of this important refuelling activity.

According to internal practice from previous years, pre-outage staff training of various organisational units was conducted.

Operational staff underwent training on the full-scope simulator prior to infrequently performed tests and evolutions in the facility.

STAFF TRAINING FOR MAINTENANCE AND OTHER SUPPORT FUNCTIONS

The professional training of technical personnel included courses whose aim was for candidates to acquire the legally required general and specialist knowledge needed for performing maintenance, engineering and other supporting functions.

Courses aimed at acquiring legally required knowledge and refresher courses for general and professional knowledge were conducted for maintenance and other support functions.

Within the framework of initial training for technical personnel, a course in the fundamentals of nuclear power plant technology (OTJE) was carried out. In line with regular practice, the course was conducted in collaboration with the Training Centre for Nuclear Technology (ICJT). The OTJE courses are conducted in two parts - in the first part theoretical fundamentals are covered, while the second part is focused on systems and operations of the power plant. A total of two NPP staff attended this training.

Training of maintenance personnel continued with programs of specialist and legally required training, which were prepared on the basis of matrices of required qualifications. Some courses were conducted in the Maintenance Personnel Training Centre and in NPP technological units, and partly in cooperation with external institutions. The training was conducted by engaging, in addition to our own training staff, mentors of practical training from individual maintenance departments.

Under an on-going training of maintenance staff in three segments, we completed a training program on the subject of general and legally required areas. The maintenance staff was updated on the new aspects of plant processes and in-house and industry operating experience.

OTHER LEGALLY PRESCRIBED AND GENERAL TRAINING

Legally required training includes: occupational health and safety, fire protection, hazardous substances, etc. General training includes: general employee training program, first-line supervisor training, etc.

We continued with the implementation of established programs of initial and refresher courses related to occupational health and safety, fire protection, hazardous substances, protection and rescue plan (NZIR), movement within the power generating facilities, etc.

Radiation protection initial and refresher training was conducted according to legal requirements.

An extensive NZIR drill was carried out, supported by the full-scope simulator.

In addition, other courses were carried out for other departments within the power plant, intended to update the staff on new legislation, and introduce innovations in the area of production processes. Courses on computer literacy and language courses were also conducted.

An extensive general program of general training courses was conducted for external contractors, attended by over 2780 participants. The majority of them completed the general employee training program (2147), courses related to radiation protection (Radiation Protection 2, Radiation Protection 3) were attended by 345 participants; 99 participants acquired the initial knowledge for first-line supervisors, while refresher training was conducted for 189 first-line supervisors.

Legislation, the Intergovernmental Agreement, nuclear industry standards and the standards of effective company management represent a framework of NPP's business. The plant's strategic documents - Code of Safety and Business Ethics, Five-Year Development Plan, and Management System - provide replies to answers who we are, what we believe in, and how and what we want to achieve and lead us to the accomplishment of our mission and vision.

COMPANY ORGANISATION
08

In accordance with the intergovernmental agreement concluded between the Government of the Republic of Slovenia and the Government of the Republic of Croatia on regulating the status and other legal issues related to investments in the Krško Nuclear Power Plant, its utilisation and decommissioning, and the Articles of Association, both having entered into force on 11 March 2003, NPP is organised as a limited liability company. The bodies of the company, having parity membership, are the General Assembly, the Supervisory Board and the Management Board.

The nominal capital of NPP is divided into two equal business shares owned by the members *GEN energija, d. o. o., Krško* and *Hrvatska elektroprivreda d. d., Zagreb*. NPP generates for and supplies electricity exclusively to the members; it is their right and obligation to take 50 percent of the total available capacity and net electric power.

Company internal organisation and the performance of work processes are subject to nuclear industry standards.

Our internal organisation covers all functions in accordance with nuclear industry standards for managing nuclear facilities and legal requirements concerning professional performance of all work processes. Due to NPP's specific position, its internal organisation covers technical and corporate functions including Independent safety engineering group (ISEG). The Management System, as one of the key documents, outlines in a systematic manner the fundamental organisational features and defines responsibilities of managerial, key and support processes.

The advantage of our organisation is a stable staff structure with competent employees whose virtue lies in their high enthusiasm and motivation. Knowledge and professionalism are highly valued; therefore, employee personal development is among our top priorities.

ORGANISATION CHART

In 2016 NPP continued to strictly respect the Intergovernmental Agreement, Slovenian Accounting Standards and other legal regulations; we achieved good operational and business results. The economy of operations is backed up by financial results, while the positive auditor's report confirms that they reflect a fair picture of the financial position of the company, its financial results and cash flows.

SUMMARY OF THE 2016 FINANCIAL STATEMENTS

09

SUMMARY OF THE 2016 FINANCIAL STATEMENTS

In accordance with the Companies Act (ZGD-1) and the Articles of Association of NPP, a summary of the NPP Report for 2016 is given below. The summary includes the main characteristics of business operations in 2016 and consolidated fundamental financial statements. The full versions of fundamental financial statements are presented in the NPP Annual Report for 2016 prepared in accordance with the Agreement concluded between the Government of the Republic of Slovenia and the Government of the Republic of Croatia on regulating the status and other legal issues related to investments in Krško Nuclear Power Plant, its utilisation and decommissioning (Intergovernmental Agreement), NPP's Articles of Association, the Companies Act (ZGD-1) and Slovenian Accounting Standards (SRS).

The Annual Report of NPP for 2016 was submitted to the organisation authorised to process and publish the data the first working day after it had been accepted at NPP's General Meeting, and is published on NPP's website.

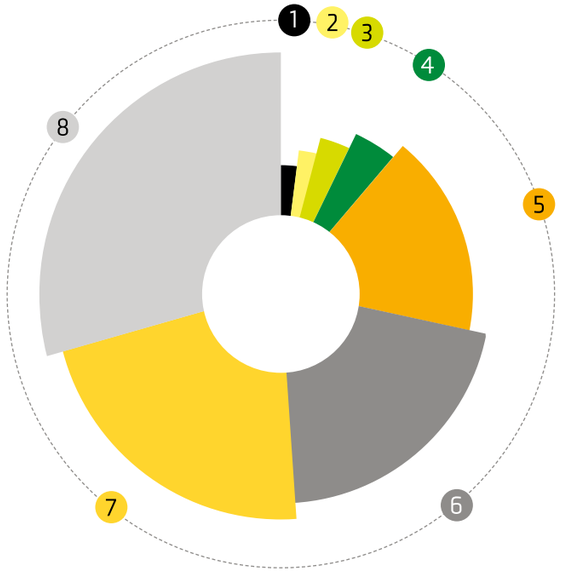
Year 2016 was successful; the plant's economy and nuclear safety were at a high level, while all environmental requirements were strictly respected. All key targets set were met. We had high annual output of 5431 GWh electricity, which is 31 GWh more than planned.

The successful business year is also reflected in the company's financial statements. We generated turnover in the amount of 163 494 thousand Euros while the total expenditure amounted to 163 043 thousand Euros. The year ended with a profit amounting to 451 thousand Euros.

The structure of expenses is illustrated in the graph below.

An amount of 5431 gigawatt hours of electric power was delivered to the grid.

STRUCTURE OF EXPENSES IN 2016



1	2%	other expenses
2	2%	cost of insurance
3	3%	water use fee
4	4%	compensation for restricted use of space and building land
5	17%	nuclear fuel
6	21%	depreciation costs
7	22%	cost of labour
8	29%	cost of material and services

The largest portions in the structure of expenses are represented by the cost of material and services, the cost of labour, the cost of depreciation and nuclear fuel, amounting to a total of 89 percent of all expenses.

Investments made in technological upgrading were higher than planned; however, the dynamics of the investment in technology upgrading was slower due to a rescheduled start of projects and their redefined scope included in the Safety Upgrade Program.

The financial position of NPP is satisfactory. Long-term resources cover all long-term assets and also all inventories. Business results are demonstrated in the consolidated fundamental financial statements. These should be interpreted together with notes detailed in the NPP's 2016 Annual Report which is published on the website of the Agency of the Republic of Slovenia for Public Legal Records and Related Services (www.ajpes.si).

AUDITOR'S REPORT ON FINANCIAL STATEMENTS TO BE PUBLISHED FOR PUBLIC USE

Deloitte.

Deloitte d.o.o.
Dunajska cesta 165
1000 Ljubljana
Slovenija

Tel: + 386 (0)1 3072 800
Fax: + 386 (0)1 3072 900
www.deloitte.si

REPORT OF THE INDEPENDENT AUDITOR ON THE SUMMARY FINANCIAL STATEMENTS
of Nuklearna elektrarna Krško, d.o.o., intended for public notice

Opinion

The summary financial statements, which comprise the summary balance sheet as at December 31, 2016, summary income statement, summary statement of changes in equity and summary cash flow statement for the year then ended are derived from the audited financial statements of Nuklearna elektrarna Krško, d.o.o. for the year ended December 31, 2016.
In our opinion, the accompanying summary financial statements are consistent in all material respects, with the audited financial statements, in accordance with ZGD and the materiality criterion and the nature of the summary financial statements purpose.

Summary Financial Statements

The summary financial statements do not contain all the disclosures required by aTreaty between the Government of the Republic of Slovenia and the Government of the Republic of Croatia on the Regulation of the Status and Other Legal Relations Regarding Investment, Exploitation and Decommissioning of the Krško Nuclear Plant (hereinafter 'the Intergovernmental Treaty'), a NEK, d.o.o. Contract of Members (hereinafter 'the Contract of members'), and Slovenian Accounting Standards in those parts that are not governed by the Intergovernmental Treaty or the Contract of Members. Reading the summary financial statements and the auditor's report thereon, therefore, is not a substitute for reading the audited financial statements and the auditor's report thereon.

The Audited Financial Statements and Our Report Thereon
We expressed an unmodified audit opinion on the audited financial statements in our report dated March 28, 2017.

Management's Responsibility for the Summary Financial Statements

Management is responsible for the preparation of the summary financial statements in accordance with and the materiality criterion and the nature of the summary financial statements purpose.

Auditor's Responsibility

Our responsibility is to express an opinion on whether the summary financial statements are consistent, in all material respects, with the audited financial statements based on our procedures, which were conducted in accordance with International Standard on Auditing ISA 810 (Revised), *Engagements to Report on Summary Financial Statements.*

DELOITTE REVIZIJA d.o.o.

Barbara Žibret Kralj
Certified Auditor

Deloitte.
DELOITTE REVIZIJA D.O.O.
Ljubljana, Slovenija 3

For signature please refer to the original Slovenian version.

Ljubljana, 28 March 2017

TRANSLATION ONLY – SLOVENIAN ORIGINAL PREVAILS

FINANCIAL STATEMENTS

BALANCE SHEET AS AT 31 DECEMBER 2016

in thousand EUR

BALANCE SHEET ASSETS	31/12/2016	31/12/2015
A. LONG-TERM ASSETS	317 895	297 905
Tangible fixed assets	317 649	297 626
Investment property	166	183
Long-term financial investments	80	96
B. CURRENT ASSETS	159 774	182 700
Inventories	68 833	60 232
Short-term financial investments	73 032	109 470
Short-term operating receivables	17 864	12 984
Cash	45	14
C. SHORT-TERM DEFERRED EXPENSES AND ACCRUED REVENUE	627	535
TOTAL ASSETS	478 296	481 140
Off-balance sheet assets	873	1 496

in thousand EUR

BALANCE SHEET LIABILITIES	31/12/2016	31/12/2015
A. CAPITAL	441 905	441 961
Called-up capital	353 545	353 545
Revenue reserves	88 843	88 843
Re-evaluation adjustment	(934)	(427)
Net profit or loss carried over	-	-
Retained net profit or loss	451	-
B. PROVISIONS AND LONG-TERM ACCRUED COSTS AND DEFERRED REVENUE	9 276	8 219
Provisions for jubilee benefits and severance pay	8 812	7 716
Other provisions	464	503
C. LONG-TERM LIABILITIES	212	222
Long-term operating liabilities	212	222
Č. SHORT-TERM LIABILITIES	26 779	30 570
Short-term operating liabilities	26 779	30 570
D. SHORT-TERM ACCRUED COSTS AND DEFERRED REVENUE	124	168
E. TOTAL LIABILITIES	478 296	481 140
Off-balance sheet liabilities	873	1 496

INCOME STATEMENT FOR THE YEAR ENDED 31 DECEMBER 2016

in thousand EUR

INCOME STATEMENT	2016	2015
I. OPERATING REVENUE	163 282	175 935
II. OPERATING EXPENSES	162 570	176 358
III. OPERATING PROFIT OR LOSS FROM OPERATIONS (I – II)	712	(423)
IV. FINANCIAL REVENUE	212	806
V. FINANCIAL EXPENSES	473	383
VI. OPERATING PROFIT OR LOSS FROM FINANCING (IV – V)	(261)	423
VII. OPERATING PROFIT OR LOSS FOR THE PERIOD (III + VI)	451	0
VIII. Corporate income tax	–	–
IX. NET OPERATING PROFIT OR LOSS FOR THE PERIOD (VII-VIII)	451	0

CASH FLOW STATEMENT FOR THE YEAR ENDED 31 DECEMBER 2016

in thousand EUR

CASH FLOW STATEMENT	2016	2015
I. CASH FLOWS FROM OPERATING ACTIVITIES		
1. Cash receipts from operating activities	177 202	201 444
2. Cash disbursements from operating activities	159 027	114 675
3. Net cash from operating activities (1 - 2)	18 175	86 769
II. CASH FLOWS FROM INVESTING ACTIVITIES		
1. Cash receipts from investing activities	303 809	337 140
2. Cash disbursements from investing activities	321 953	423 904
3. Net cash from investing activities (1 - 2)	(18 144)	(86 764)
III. CASH FLOW FROM FINANCING ACTIVITIES		
1. Cash receipts from financing activities	–	–
2. Cash disbursements from financing activities	–	–
3. Net cash from financing activities (1 - 2)	–	–
IV. CLOSING BALANCE OF CASH (VI + V)	45	14
V. Net cash inflow or outflow for the period	31	5
+		
VI. Opening balance of cash	14	9

STATEMENT OF CHANGES IN CAPITAL FOR THE YEARS 2016 AND 2015

in thousand EUR

CAPITAL COMPONENTS	Called-up capital	Profit reserves			Reserves from revaluation per value	Net profit/ loss carried over		Net profit or loss for the financial year	TOTAL CAPITAL
	Nominal capital	Legal reserves	Statutory reserves	Other reserves	Surplus due to revaluation	Net profit carried over	Net loss carried over	Net profit	
Opening balance 1. 1. 2016	353 545	35 354	53 321	168	(427)	–	–	–	441 961
Total comprehensive income of financial year	–	–	–	–	–	–	–	451	451
Transfer of net financial result of financial year	–	–	–	–	–	–	–	451	451
Changes within capital	–	–	–	–	(507)	–	–	–	(507)
Setting off losses as a deductable element of capital	–	–	–	–	–	–	–	–	–
Allocation of net profit in other profit reserves	–	–	–	–	–	–	–	–	–
Other changes in capital	–	–	–	–	(507)	–	–	–	(507)
Closing balance 31.12.2016	353 545	35 354	53 321	168	(934)	–	–	451	441 905
Opening balance 1. 1. 2015	353 545	35 354	53 321	–	(856)	–	(2 433)	2 601	441 532
Total comprehensive income of financial year	–	–	–	–	–	–	–	2 601	2 601
Transfer of net financial result of financial year	–	–	–	–	–	–	–	2 601	2 601
Changes within capital	–	–	–	168	429	–	2 433	(2 601)	429
Setting off losses as a deductable element of capital	–	–	–	–	–	–	2 433	(2 433)	0
Allocation of net profit in other profit reserves	–	–	–	168	–	–	–	(168)	0
Other changes in capital	–	–	–	–	429	–	–	–	429
Closing balance 31.12.2015	353 545	35 354	53 321	168	(427)	–	0	0	441 961

LIST OF ACRONYMS

AM	Severe Accident Management
BS OHSAS	British Standard – International Occupational Health and Safety Management Standard
CH	Chemistry
CHUG	Checworks Users Group
CORS	Center za obveščanje Republike Slovenije /*Information Centre of the Republic of Slovenia*/
DG	Diesel Generator
ECR	Emergency Control Room
ENISS	European Nuclear Industry Safety Standards
EPR	Emergency Preparedness and Response
EPRI	Electrical Power Research Institute
FAT	Factory Acceptance Test
FORATOM	European Atomic Forum
GLBS	Generator Load Break Switch
HESS	Hidroelektrarne na Spodnji Savi /*Lower Sava River Chain of Hydro Power Plants*/
HTO	Human, Technology and Organisation
IAEA	International Atomic Energy Agency
ICJT	Izobraževalni center za jedrsko tehnologijo /*Training Centre for Nuclear Technology*/
INEX	International Exercise
INPO	Institute for Nuclear Power Operations
I&C	Instrumentation and Control
ISEG	Independent Safety Engineering Group
ISI	In-Service Inspection
ISO	International Organisation for Standardization
LM	Leadership and Management for Safety
LTO	Long Term Operation
MA	Maintenance
MAAP	Modular Accident Analysis Program User Group
MD	Management Directive
NDE	Non-Destructive Examination
NEK	Nuklearna elektrarna Krško /*Krško Nuclear Power Plant*/
NMAC	Nuclear Maintenance Application Centre
NSRAO	Nizko- in srednjeradioaktivni odpadki /*Low- and intermediate-level radioactive waste*/
NRC	Nuclear Regulatory Commission
NUPIC	Nuclear Procurement Issues Committee
NZIR	Načrt zaščite in reševanja /*Protection and Rescue Plan*/
OE	Operation Experience
OL	Online
OP	Operations
OSART	Operational Safety and Review Team
OTJE	Osnove tehnologije jedrskih elektrarn /*Fundamentals of Nuclear Plant Technology*/
OVD	Okoljevarstveno dovoljenje /*Environmental Permit*/
PLC	Programmable Logic Controllers
PNV	Program nadgradnje varnosti /*Safety Upgrade Program - SUP*/
PSA	Probabilistic Safety Analyses Application
PSE	Plant Support Engineering
PWROG	Pressurized Water Reactor Owners Group
ReCO	Regijski center za obveščanje /*Regional Notification Centre*/
RP	Radiation Protection
SRS	Slovenski računovodski standardi /*Slovenian Accounting Standards*/
TS	Technical Support
TQ	Training and Qualification
URSJV	Uprava Republike Slovenije za jedrsko varnost /*Slovenian Nuclear Safety Administration*/
WANO	World Association of Nuclear Operators
ZGD	Zakon o gospodarskih družbah /*Companies Act*/
ZJN	Zakon o javnem naročanju /*Public Procurement Act*/
ZJNVETPS	Zakon o javnem naročanju na vodnem, energetskem, transportnem področju in področju poštnih storitev /*Act Regulating Public Procurement of Water, Energy, Transport and Postal Services*/