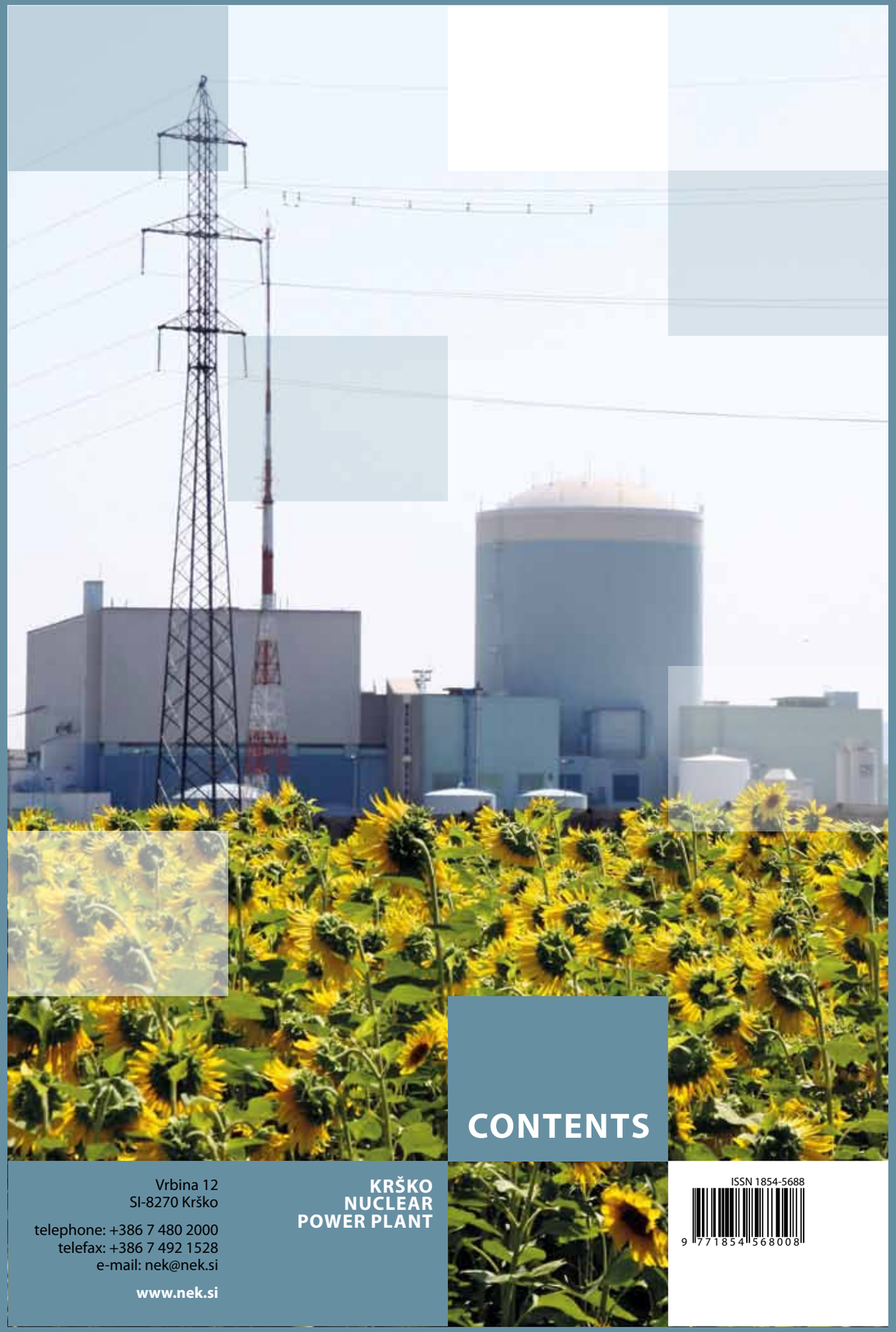
KRŠKO NUCLEAR POWER PLANT

ANNUAL REPORT

2018



CONTENTS

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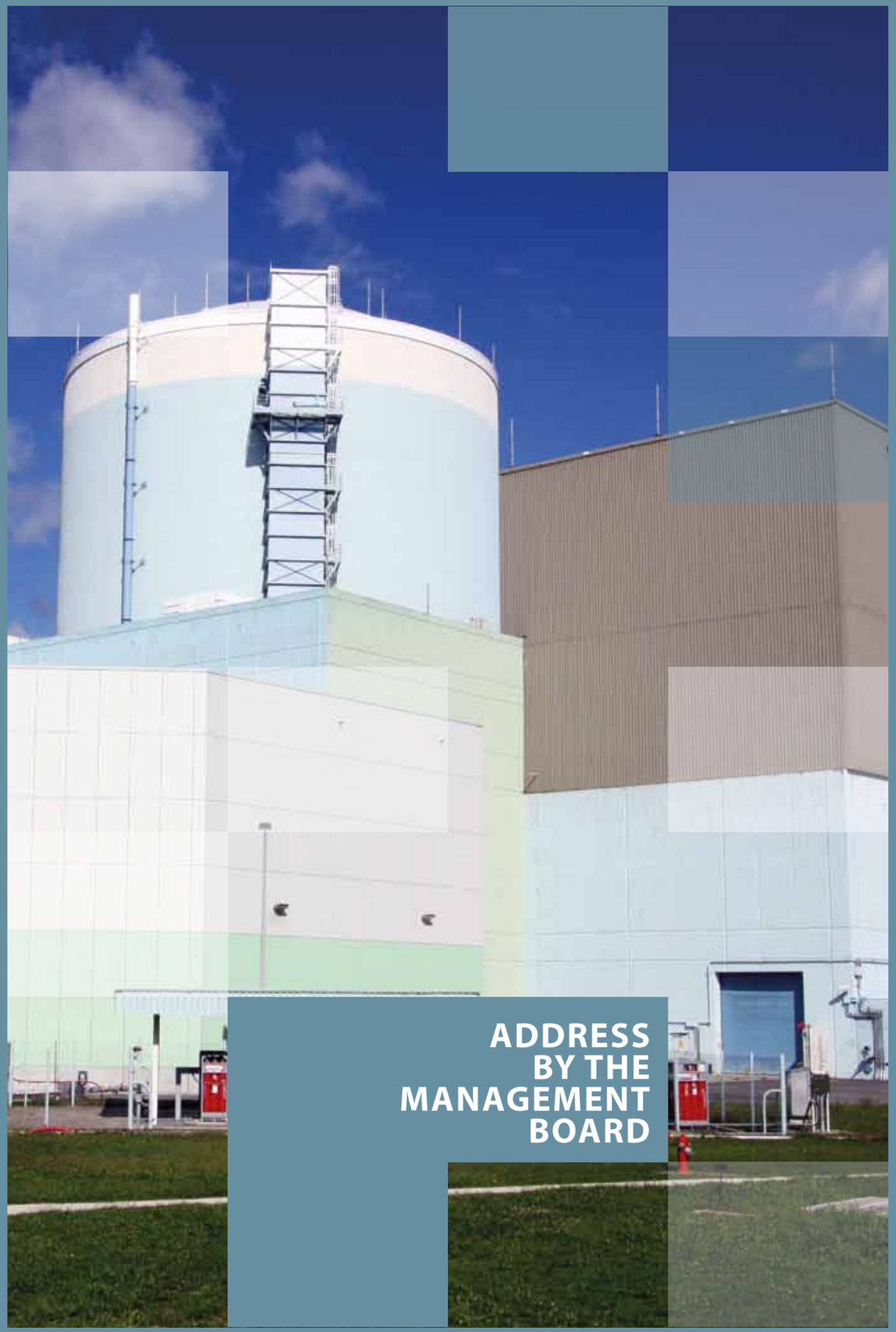
CONTENTS



ADDRESS BY THE MANAGEMENT BOARD

DEAR BUSINESS PARTNERS, OWNERS AND COLLEAGUES,

It is with great pleasure that we can report on the outstanding business and operational results achieved in 2018.

Some of the highlights to remember this business year include the shortest outage since the implementation of the 18-month fuel cycle, the exceeded annual power generation plan, perfect nuclear fuel integrity, the completion of extensive technological equipment upgrading and the construction of the Waste Manipulation Building.

Year 2018 is yet another year which will be marked by exceeding the power generation plan - we produced 5,489 billion kWh. In view of ever greater dependence on imports, this is a significant part of electricity in addition to being a low-carbon, foreseeable and reliable type of power. We have witnessed increasingly higher operational efficiency from year to year, resulting in greater stability of both electricity systems. Such results are due to careful operational supervision, good cooperation of all participants and commitments of all employees as well as due to beneficial hydrology as well as associated good thermodynamic efficiency of the plant. The production price of electricity was competitive in comparison with other sources and better than anticipated in the business plan, thus ensuring profitability to the owners under difficult electricity market conditions.

On the first of May an extensive and demanding 30-day outage was finished which included 38,000 maintenance and project activities, and 4,900 work orders. This was the shortest outage since the 18-month fuel cycle was implemented. The nuclear fuel was replaced and extensive maintenance and mechanical, electrical and I&C equipment inspections were carried out. Surveillance tests proved that the systems, structures and components are in good condition to perform their expected tasks. The majority of planned technological upgrades was completed.

The second phase of the Safety Upgrade Program was also finished of which the most demanding project being the construction of the Bunkered Building 1 (BB 1). It was completed to the extent of enabling the operation of the new Emergency Control Room and thus the supervision of a safe plant shutdown outside the Main Control Room. At the end of the year we also finished building works for the Operating Support Centre extension, a vital part of the second phase of the Safety Upgrade Program. The third phase of the Safety Upgrade Program was also started. This phase includes the construction of a Bunkered Building 2 (BB 2) which will house systems which will provide a long-term alternative heat outlet from the reactor core.

It is established that 50 percent of the Safety Upgrade Program has been completed and that the planned projects have progressed successfully. The implementation of new safety solutions and new acquisitions have changed the plant's features and increased its robustness and resistance against extreme external effects.

The new Waste Manipulation Building has been in use since spring. Its implementation ensures that we can maintain high standards and provide improved working conditions while handling low-level and intermediate-level radioactive waste. However, the key point of this project is that we have gained storage room for the low-level and intermediate-level waste, which will help us bridge the period until the final disposal solution and the removal of the waste from the nuclear plant premises.

In October we had a follow-up review conducted by the International Atomic Energy Agency. The members of OSART (Operational Safety Assessment Review Team) reviewed the operational safety of the plant by checking the fulfilment of recommendations in twenty areas; the findings in all areas confirmed our endeavours to implement suitable solutions and continuous improvements, which demonstrate our high level of nuclear safety.

The excellence of the NEK's work processes coupled with the WANO recommendations are often the reason for visits by numerous international expert groups who wish to familiarize themselves with our good practices, keep them as examples and implement them into their work processes. In this context, we hosted experts from Swedish plant Oskarshamn, Spanish plants Asco, Almaraz and Trillo, Slovak plant Moschovce and the Dutch plant Borselle. The latter has the plant life extension until 2033 approved by the Dutch government and owner EPZ, provided that the safety standards equal those in one quarter of the most successful plants in Europe, USA and Canada. One of these plants was also our plant, which speaks for itself and is valid evidence of the high position we have in the eyes of others within the nuclear industry. All this is a reward and affirmation of the invested efforts as well as a huge responsibility on our part to keep this high position.

ANNUAL
REPORT
2018

ADDRESS
BY THE
MANAGEMENT
BOARD

Our tasks cannot be completed and plans not achieved without the good support of our business environment, regulatory bodies and owners. It is vital that all participants respect and understand nuclear energy within the framework of its specific features and risks in order to be able to take suitable and responsible decisions. Only high awareness of all relevant aspects can provide a basis for the development of a long-term concept of nuclear energy use and optimised electrical power supply.

We thank all who trust the Krško nuclear power plant and all who support us in achieving our business and operational targets. Our goals remain ambitious, while our results of the past year are summarized in the contents of this annual report; it illustrates our efforts to achieve high standards, ethical acts and lawful work reflected in all our actions.

Stane Rožman
President of the Management Board

Hrvoje Perharić
Member of the Management Board

SUMMARY REPORT AND CHALLENGES FOR 2019

The year 2018 will also be recorded in the NPP's operating history as a very successful year; we provided to its two shareholders more electricity than planned and successfully completed the required outage and technological upgrades. The outage was the shortest in the history of NPP's operation, with an 18-month long fuel cycle despite extensive maintenance activities and safety upgrades. The plant achieved one of the important milestones in the implementation of the Safety Upgrade Program (SUP) since the Emergency Control Room is operational after the 2018 outage, allowing us to control all systems for safe shutdown and cooling of the plant when the Main Control Room is not available. We operated economically, in accordance with the adopted business plan, and constantly applied administrative restrictions and high nuclear industry standards. Reliability and expectancy of electricity generated in NPP, its carbon efficiency and low production cost are an effective answer to the question on energy trilemma posed by the modern world: how to provide energy security, access to electricity for all and environmental sustainability.

SUMMARY
REPORT AND
CHALLENGES
FOR 2019

In 2018, NPP reached an output of 5.49 terawatt hours which is more than the planned 5.43. The outage lasted 30.9 days. More than 9 large project changes were implemented among which the two most difficult ones were building the Emergency Control Room and replacing the generator exciter. Intensive preparations for the Spent Fuel Dry Storage projects include activities to obtain a building permit in accordance with the new laws. We completed most changes on the systems and structures that ensure the plant's safety and operational reliability upon simultaneous operation of the Brežice hydro power plant.

Even though this was a year when we had an outage, many other activities on training for an emergency situation took place at the plant. We conducted two drills under the Protection and Rescue Plan (NZIR), including the Beyond Design Basis Accident scenario where we ensured greater physical safety. We are preparing for the WANO mission that will take place in 2019 according to slightly amended methodology and scope.

In the second half of the year, self-assessment of the safety culture took place where we self-evaluated and analysed the fundamental principles of safety culture on the basis of a questionnaire.

In autumn, experts appointed by the International Atomic Energy Agency reviewed the efficiency in complying with recommendations given during the extensive expert review of operating safety by the OSART mission in 2017.

The external certification organisation successfully conducted a follow-up assessment of the Environmental Management System in accordance with ISO 14001 standard.

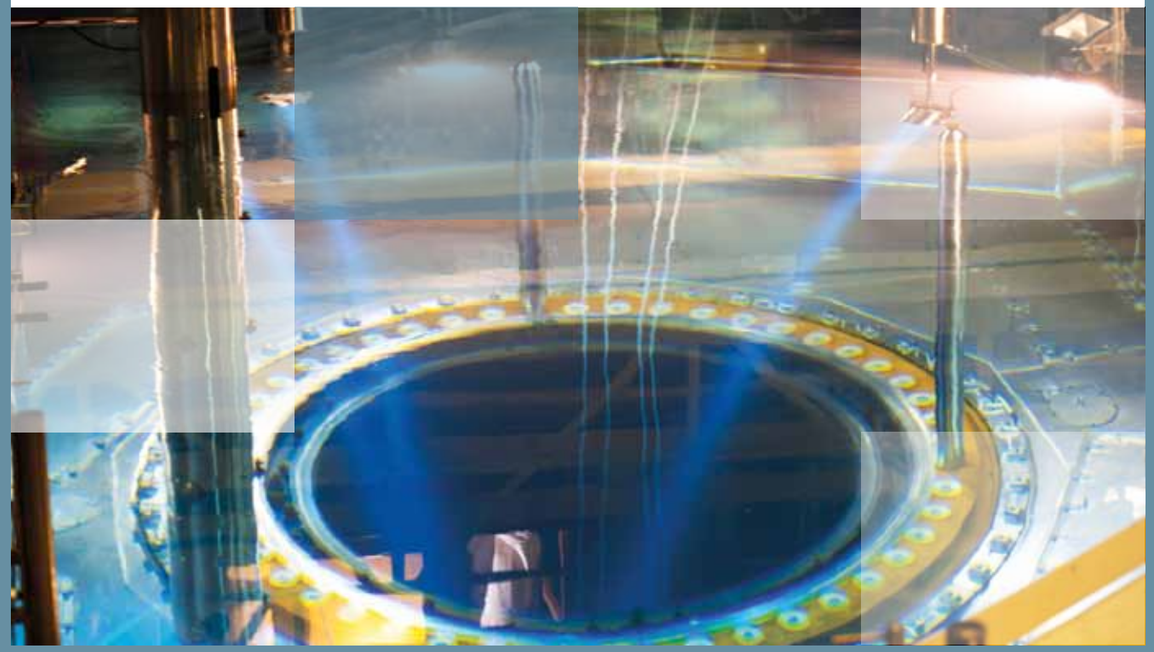
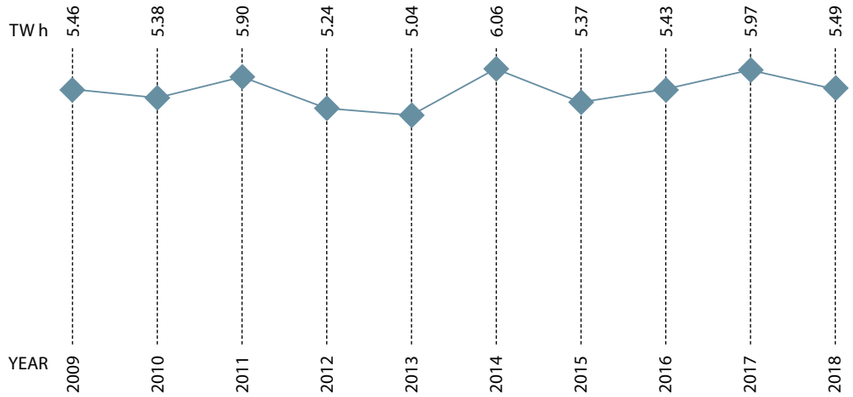


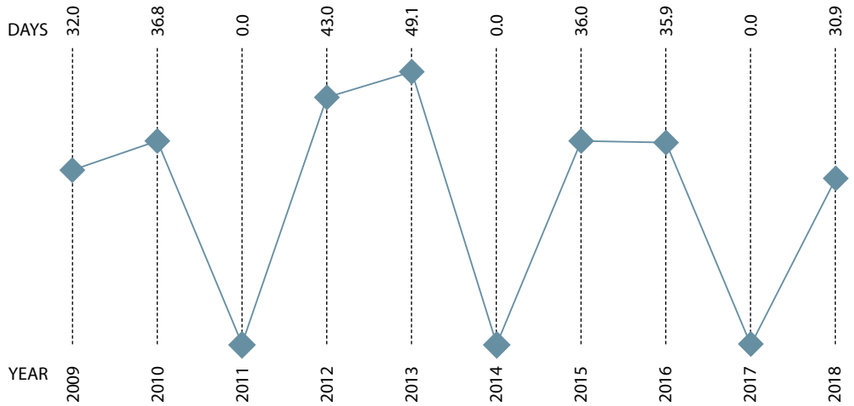
DIAGRAM OF OUTPUT BY YEARS

Total: 175.05 TW h
(output since the start of commercial operation)
NEK target for 2018: 5.43 TW h



NPP's operations in 2018 were stable; the production was slightly higher than planned. Aside from the outage, we disconnected the plant from the grid for a short period in July because of irregularities on the bushings of the main transformers. During the whole cycle we applied all operating restrictions and conditions as well as environmental restrictions as laid down in the water and environmental permit.

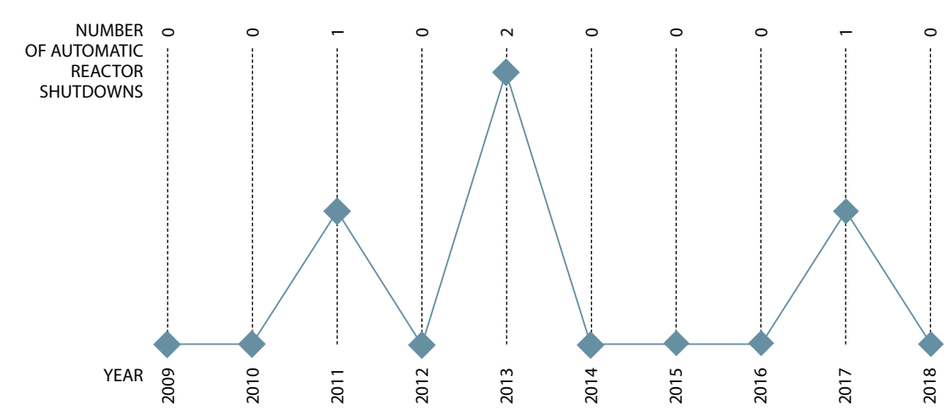
OUTAGE DURATION



ANNUAL
REPORT
2018

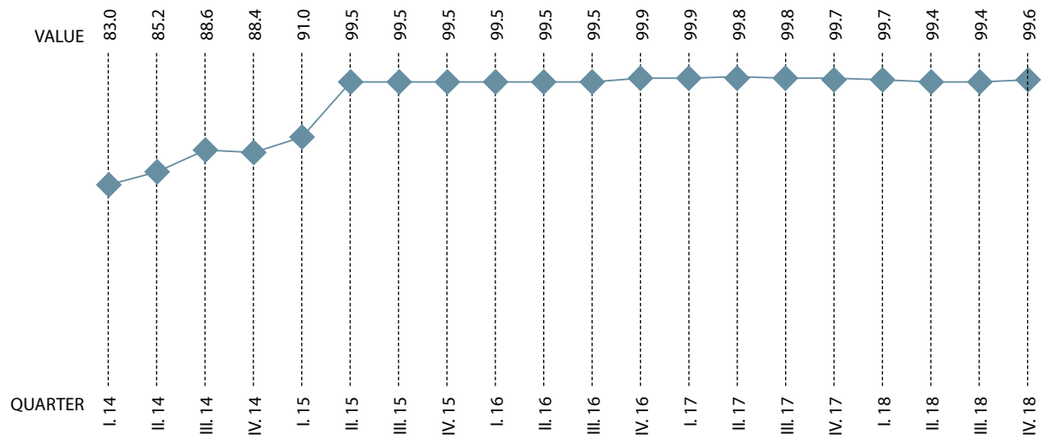
SUMMARY
REPORT AND
CHALLENGES
FOR 2019

UNPLANNED AUTOMATIC SHUTDOWNS



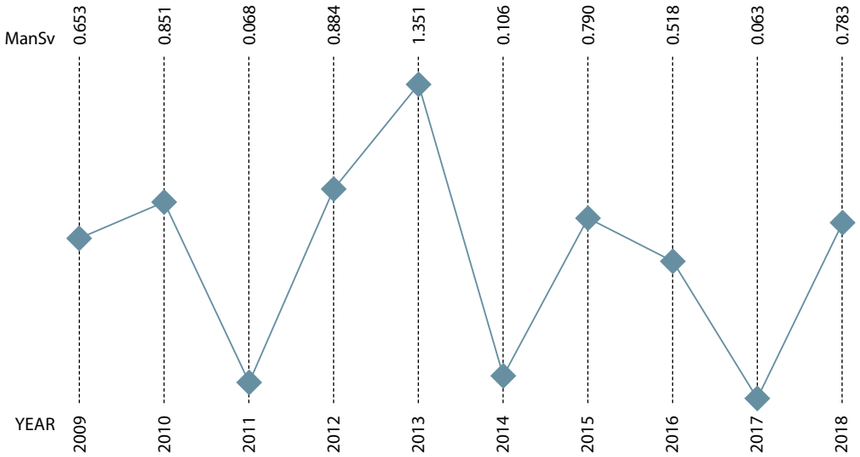
PERFORMANCE INDICATOR INDEX

NEK target for 2018: ≥ 94



The operational efficiency is supported by the high value of the Performance Indicator Index (above 99) which was instituted by WANO to facilitate performance monitoring and benchmarking. It is calculated by weighted values of individual indicators, with the scale 0 to 100.

TOTAL COLLECTIVE RADIATION DOSE



CHALLENGES FOR 2019

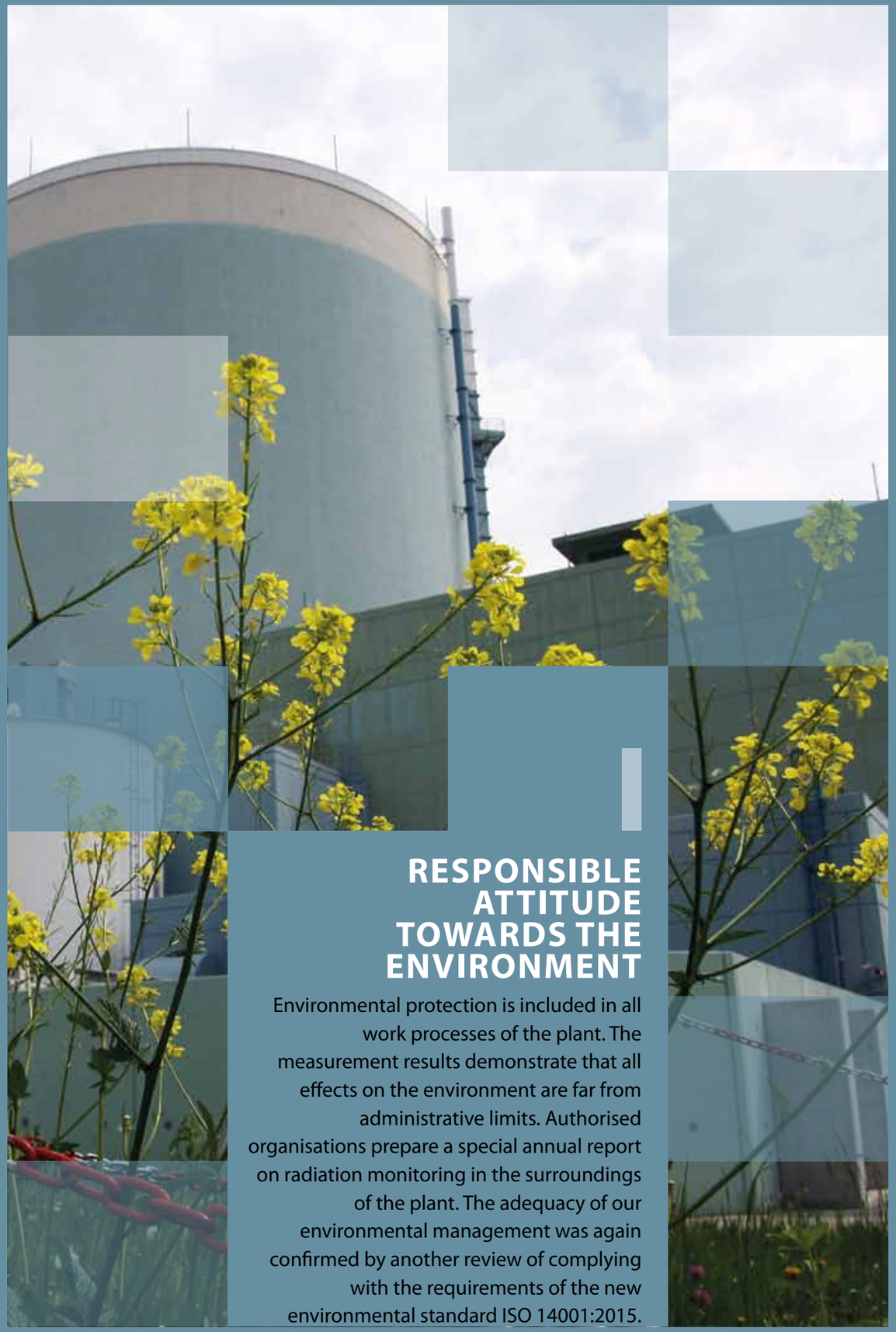
With high business and operating achievements the challenge is their permanent sustainability. In NPP we are aware that our operating and business success is built by employees through their knowledge, work attitude and high safety culture, coordinated cooperation, enthusiasm and ambitiously set objectives. To maintain the continuity of expert training, in addition to systematic training according to high international comparative nuclear standards, we had also set up programs for the systematic transfer of knowledge and skills to the younger generation. Replacing generations has been successful in NPP as the staff, having worked at the plant during its construction and from the start of its operation, has been retiring. Intensive reforming of the management team has been ongoing in the last two years, many important positions taken over by a younger generation to continue in the direction to ensure long-term and efficient operation of the plant.

Nuclear energy is special because of its properties brought by exceptional energy potential in a small space, sources of radioactive radiation and residual heat even after the plant's shutdown. Nuclear energy therefore requires an appropriate level of deference, high expert qualifications and responsible staff at all levels, including its shareholders and other stakeholders.

High reliability and expectancy of electricity produced in NPP is an exceptional added value for the power system in Slovenia and Croatia. In the World Energy Council (WEC) analysis, Slovenia gained four places and on the world energy trilemma index, it was in sixth place among 125 countries. The Energy Trilemma Index Report 2018 assesses results and advancement of countries on all elements, so called energy trilemmas, including energy security, energy equity and environmental sustainability. Reliability and foreseeable electricity production in NPP, its low carbon technology and low production cost are an effective answer to the question of the energy trilemma posed by the modern world.

Constant investments into upgrading of equipment and processes are part of NPP's strategy for long-term reliable operation of the plant and for retaining its competitiveness. Digitalisation of processes is part of upgrades, spreading faster among NPP's business processes, now mostly digital, than with the technology for producing electricity. For systematic treatment of detected discrepancies, and domestic and international operating experience, we developed an application to support the Corrective Action Program more than a decade ago. The application, which we upgrade ourselves, supports the whole process: from recording discrepancies, screening of requirements, coding, analysing, opening of forums for collecting comments on analysis to implementing approved corrective actions to prevent discrepancies being repeated. All approvals in these sub-processes are electronic. In Technical Operations we also digitalised management of narrative logs, walkdown of equipment, tagging and restoration of systems. We digitalised very important and extensive work order processes which are now electronic, from preparation, planning, obtaining permits, authorisation, implementation of individual operations according to a work order until completion and recording of history. We also digitalised the procurement process, warehouse, reception control, planning and control over use of resources.

Digital and cyber-security are a challenge for the whole society and the nuclear industry is not an exception. Taking into account the nature of technology in NPP and its conservative approach to introducing digitalisation into important plant's systems, we have set up a long-term digitalisation strategy based on the needs of final users. Colleagues at NPP, through their active participation in international expert organisations in the nuclear industry field, are exchanging experience and comparable good practices on digitalisation in the nuclear industry while realising cost savings.



RESPONSIBLE ATTITUDE TOWARDS THE ENVIRONMENT

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 monitoring in the surroundings of the plant. The adequacy of our environmental management was again confirmed by another review of complying with the requirements of the new environmental standard ISO 14001:2015.

The objective of radiation monitoring is to monitor the plant's 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 wastewater releases 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 measuring stations located in the vicinity of the plant which can detect changes in the natural level of 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 NPP on the environment 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 a dose received by an individual in 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 is approximately 1 microsievert or less than 0.1 percent of the dose on average received by a person from natural sources of radiation (approximately 2500 microsieverts). The annual dose for NPP is limited to 50 microsieverts per individual (at a distance of 500 m from the reactor or more) from air and water transition channels. The results of measurements taken are dealt with in detail in the special report for 2018, prepared for NPP by the Jožef Stefan Institute together with the Institute for Occupational Safety, MEIS and the Ruđer Bošković Institute.

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 0.017 percent of the additional annual limit of activity for liquid discharges. The activity of discharged tritium was approximately 23.4 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 a body in the event of its intake.

The plant observed administrative and technical regulations which require the concentration of radioactivity in the discharge channel wastewater not to exceed the prescribed limits.

DATA ON LIQUID RADIOACTIVE DISCHARGES IN 2018

RADIOACTIVE SUBSTANCES	ANNUAL LIMIT	PERCENTAGE OF THE LIMIT
fission and activation products	100 GBq	0.017
Tritium (H-3)	45 TBq	23.4

RADIOACTIVE RELEASES INTO THE AIR

The annual limit dose of 50 microsieverts for releases into the air and water are checked monthly. The dose calculated for the air at a 500-metre distance from the reactor is calculated as the dose that could have been received by an individual at such distance in one year from external and internal radiation. The least favourable monthly average air rarefaction values and releases near the ground are presumed in the calculation of particular wind directions. The result for 2018 was 0.93 microsieverts (1.86 percent of the annual limit). More detailed data is given in the table below.

DATA ON RADIOACTIVE RELEASES INTO THE AIR IN 2018

RADIOACTIVE SUBSTANCES	TOTAL ANNUAL LIMIT	DOSE	PERCENTAGE OF THE LIMIT
fission and activation gases (total)		3.86E-02 µSv	
Iodines (I-131 and others)		1.01E-04 µSv	
dust particles (Cobalt, Caesium, etc.)		1.80E-07 µSv	
Tritium (H-3)		6.74E-01 µSv	
Carbon (C-14)		2.19E-01 µSv	
	50 µSv	**Total 0.93 µSv**	**1.86**

Technical regulations were taken into account to the effect that radioactive concentrations in the air, e.g. the dose rate within a 500-metre distance from the reactor, did not exceed the prescribed value.

MEASUREMENTS OF RADIOACTIVE RELEASE AND ENVIRONMENTAL SAMPLES

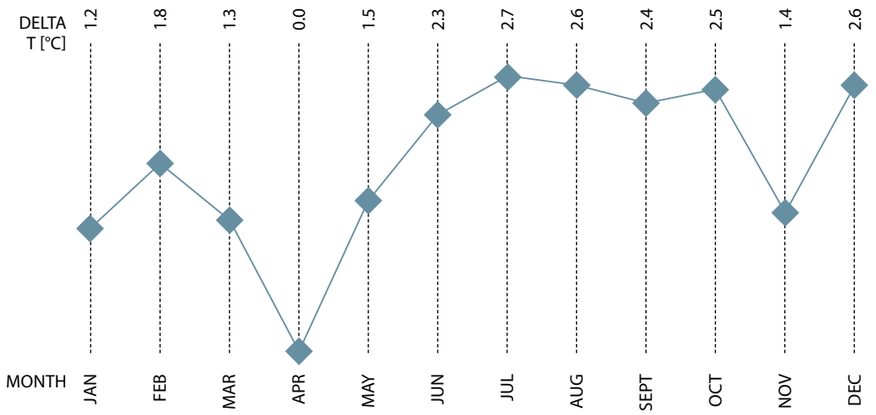
The NPP laboratory for radioactive protection regularly checks air and environmental samples by an accredited method, thus having fulfilled conditions set by the standard SIST EN ISO/IEC 17025; this is checked by a Slovenian accreditation body. The accredited measurements of radioactivity of periodically 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 on water emissions and the water permit, we measured the Sava River temperature and its flow rate, and monitored the river level, and took monthly measurements of biological and chemical oxygen consumption.

Unfavourable weather conditions in the second half of the year caused maximum permitted temperature level increase of 3 °C to be reached a number of times.

AVERAGE INCREASE OF WATER TEMPERATURE IN THE SAVA RIVER IN 2018



Groundwater is regularly inspected by the power plant and authorised organisations; the groundwater level and temperature in three boreholes and at two locations on the Sava River are measured constantly and weekly in ten boreholes in the Krško-Brežice fields. The level of groundwater in the boreholes, observed in the vicinity of the watercourse, increased for about 2 m due to the setting up of the accumulation of the Brežice hydro power plant, and it is equal to the level in the second half of 2017 when the level was rising due to creating a dam for the Brežice hydro power plant.

DATA ON RADIOACTIVE WASTE AND SPENT NUCLEAR FUEL

In 2018, 18 new packages of Low- and Intermediate-level Waste (LILW) were stored, with a total volume of 10.2 cubic meters (m^3). During the year 14.6 cubic meters of LILW was generated. Part of waste from 2018 will be stored in 2019 because technological equipment for processing radioactive waste, such as high pressure press and measuring equipment, needed to be moved from storage into the new Waste Manipulation Building. The new building gives high work standards for handling waste and for testing and maintenance.

We sent 350 packages of combustible waste for incineration, with a total volume of 72.8 cubic metres. The total volume of inventory stored in the LILW NPP storage on 31 December 2018 was 3705 packages with a total 2271.25 m3 and the total activity of 15.9 TBq.

The Spent Fuel Pool contains 1264 spent fuel elements from 29 fuel cycles. The overall mass of spent fuel material is 491.3 tonnes.

ANNUAL
REPORT
2018

RESPONSIBLE
ATTITUDE
TOWARDS THE
ENVIRONMENT

ENVIRONMENTAL MANAGEMENT AND MUNICIPAL WASTE

Since the end of 2008, the standard ISO 14001 on the environmental management has been in place in NPP. Since the certificate was granted, the system has been checked regularly, on an annual basis, by an external certification organisation. The regular follow-up audit was conducted; this time according to the standard ISO 14001:2015. 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, and efficiency of treatment at the outlet are taken by an external organisation, which is in line with the environmental permit requirements. Monitoring results show adequate operation of the treatment plant since all values were in accordance with regulations.

HIGH LEVEL OF NUCLEAR SAFETY

Nuclear safety always has a priority at NPP. 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.

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, procurement and other activities which all contribute to safe plant operations and the safety of the wider population. We are committed to ongoing progress, professional work and personal growth. Our mission is achieved through independent verification, continual improvements of human actions and safety culture, own critical self-assessment of results achieved, permanent comparison with best comparable facilities in the world, operating experience at home and abroad, and continual assessment of safety and stability of plant operations.

Due to its specific nature, NPP had its attitude towards environment implanted in its very initial project (extensive research prior to site selection, strict respect of standards during building). During the start-up and later operations, independent supervision of the effects on the environment was established (radioactive substance release into water and air, measuring of radioactivity in the environment, management of spent nuclear fuel, radioactive and hazardous waste). The Protection and Rescue Plan of NPP (NZIR NPP) has been prepared, defining organisation, measures and means to be followed in case of emergency events having potential radioactive effects on the environment. The attitude towards the environment is part of the business policy within which we give priority to safe and stable operation. The environment treatment practice in NPP is in accordance with the standard ISO 14001-2005, 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. After the events in Japan in 2011 we started to prepare and implement certain short-term measures already in that year; on the basis of industry experience and regulatory requirements and upon the request of the Regulatory Body, the Safety Upgrade Program (SUP) of NPP was developed and is to be completed within the next three years; it will ensure a long-term upgrading of the plant.

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. Certain projects have already been finished, some are still on-going. Currently, phases 2 and 3 are on-going on a number of projects. Among the most important projects is the completion of the new Emergency Control Room. Phase 3 - to be completed by 2021 - includes the construction of an extra reinforced Bunkered Building BB 2 and a Spent Fuel Dry Storage (SFDS). As a part of preparation for the SFDS project, inspections took place during the year as well as the reinforcement of spent nuclear fuel, both of which will allow for this fuel to be stored in casks.

In June and November, NPP carried out regular scheduled annual theoretical and practical drills for taking action in an emergency situation. The drill was attended by: security staff, reserve shift simulator operators and equipment operators, Technical and Operational Support centres and Emergency Operations Facility, the Slovenian Nuclear Safety Administration, the Emergency Notification Centre of the Republic of Slovenia and the regional Emergency Notification Centre.

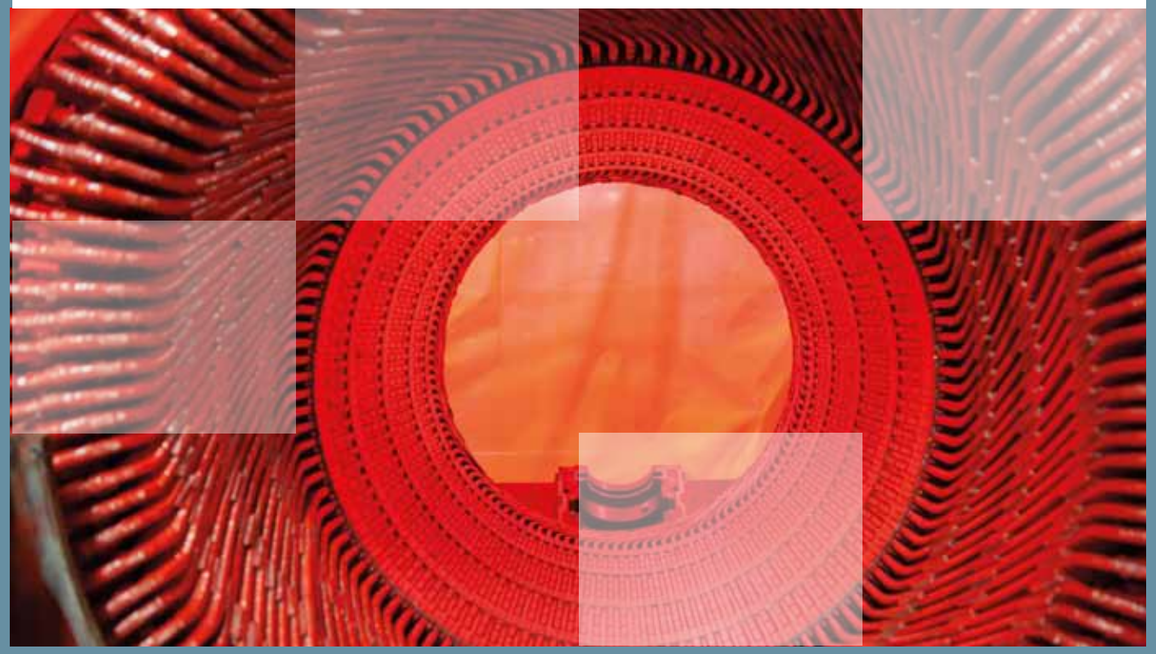
HIGH LEVEL OF NUCLEAR SAFETY

During the drill, we tested the activation of staff and centres for emergency management, informing competent authorities of the event, prescribed operational measures and intervention repairs, extinguishing imaginary fire in the Main Control Room which necessitated evacuation of the Simulator Control Room and operating the plant from the evacuation panels of the Simulator Control Room, the plant protective measures, including evacuation from the plant premises, and measures for physical safety of the plant. We also checked strategies for managing Beyond Design Basis conditions not included in projects by the use of mobile equipment. We achieved the objectives and completed drill targets.

In May, representatives from WANO Paris centre explained at the meeting with the NPP management the scope of the next peer review in 2019. The visit was also intended to present changes in the methodology and previous collection of suitable information in the field of safety project solutions.

In September, five experts from WANO visited NPP and presented the organisation, the course and scope of WANO mission which will take place at NPP in March 2019. The novelty of the mission will be the review of the functioning of the operational staff on the simulator while reviewing many areas: safety culture, organisation and administration, performance improvement and operating experience, operations, maintenance, chemistry, work management, engineering, configuration management, fuel performance, reliability of equipment, radiological protection, training and qualifications, fire protection, health and safety at work, emergency measures and implementation of WANO SOER recommendations (Significant Operating Experience Report).

This mission will be the fifth mission since the plant has been operating. The last one was held in 2014.



Laws and international standards require that plants carry out a periodic safety review every ten years and report the results to a relevant regulatory body. Periodic safety reviews, as a supplementary tool to a regular safety review, check comprehensively the level of plant's nuclear safety and confirm whether the plant is able to operate safely in the next 10-year period. NPP carried out a second periodic safety review which was confirmed, together with the implementation plan, by the Slovenian Nuclear Safety Administration by the end of May 2014. All modifications and improvements must be in compliance with legislation completed within five years of the report endorsement date which is end of May 2019. We are pleased to report a visible advancement in the execution of the plan of modifications and upgrading of the plant since more than 95 percent of all actions were completed by the end of 2018.

This is one of the key reviews through which we ensure long-term operations of the plant.

In the second half of the year we completed the fourth self-assessment of safety culture. With periodic self-assessment of safety culture we try to determine compliance of safety culture in NPP with international guidelines and standards in this area.

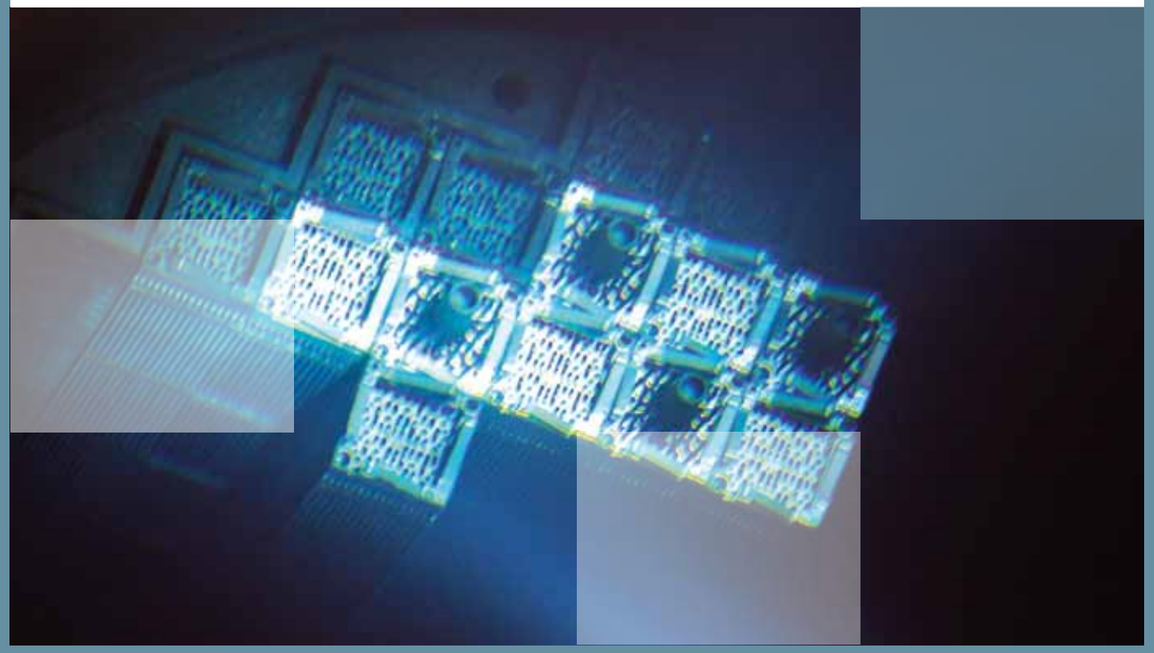
Workers voluntarily complete a questionnaire, the information obtained is analysed and conclusions presented to the management and individual departments. All statements in the questionnaire were categorized by ten principles of safety culture and their relevant categories (in accordance with documents of WANO and NPP). The findings of the group for self-assessment of safety culture are the basis for preparing action plans. Action plans in individual departments will be introduced due to their specifics by their management.

In May and June 2017, the work of the plant was examined by the OSART mission, as organised by the International Atomic Energy Agency. The objective of the mission was to evaluate and compare operational practices at NPP against the best international practices, to assess the adequacy of implementing the IAEA standards and to locate any areas for improvement. The OSART experts evaluated 13 operating areas. In September 2017, we developed an action plan on integrating the OSART's recommendations. There were 87 recommended actions in twenty different areas, each with their owners and deadline assigned.

In October, the members of the OSART mission carried out an expert follow-up review, to review the adequacy of complying with the recommendations given in June of the previous year. They assessed that NPP was fully meeting the goals in 14 areas while recommendations for 6 areas were still being implemented. The progress was satisfactory; however, more time is still needed to achieve the desired level.

Our developmental tasks and work priorities are part of the document entitled Internal Policies and Goals. They reflect the management board's expectations and established polices as well as our priority areas. In 2018 we directed our attention to improving three areas: exemplary work preparation and work performance, exemplary execution of the SUP (Safety Upgrade Program) with team work, and exemplary mutual relationships.

In November, NPP's external certification organisation conducted control assessment of the Environmental Management System in accordance with standard ISO 14001:2015 as well as of the Occupational Health and Safety Management System in accordance with standard BS OHSAS 18001:2007.



PROCESS AUDITING

An integral part of the NPP operations is specific risks due to enormous stored energy in the reactor, residual heat and radioactive material in the reactor core. The formally defined management system in NPP lays down fundamental premises and processes for ensuring adequate control of radioactivity and consequently nuclear safety, which in turn ensures adequate operation, maintenance, project changes and control of radioactive releases, etc. We treat nuclear safety in all areas of our work as our first priority. By encouraging and respecting the principles of safety culture at all levels, each NPP's employee, within their individual expertise, responsibility and competence, takes part in ensuring nuclear safety, the safety of employees, population and environment. The principles of our operation are manifested in the efficiency of inter-dependant processes within NPP and which support the overall facility's operations.

The adequacy of NPP's programs and efficiency of processes are assessed by periodic internal audits. We assess the efficiency of activities with a direct impact on structures, systems and components by assessing their effects on safe and reliable plant operation. We plan audits regularly in accordance with the Quality Assurance Program. The internal audits are carried out by qualified staff without direct responsibilities for areas being assessed. A written report is drawn up for every assessment and its results, which is sent to individuals responsible for the relevant process, including harmonised proposed corrective measures and deadlines for their completion. NPP's management is informed of the audit conclusions at the management review.

In 2018, QA engineers in cooperation with other departments in NPP conducted ten internal reviews in the following areas:

- organisation and administration: assessing compliance of the environmental management system with standard SIST EN ISO 14001 and the occupational health and safety management system with standard BS OHSAS 18001;
- radiological protection, including checking compliance of accredited laboratories with standard ISO 17025;
- chemistry, including radioactive waste, and checking compliance of accredited laboratories with standard ISO 17025;
- fire protection;
- production;
- training;
- nuclear fuel and reactor core;
- emergency planning;
- preventive maintenance, civil maintenance and in-service inspection; and
- procurement process.

The conclusions of internal audits confirm that systems implemented in NPP function in accordance with the standards' requirements and comply with policies and objectives set. Discrepancies found are recorded in a Corrective Action Program which includes named owners and deadlines set for implementing corrective measures. Corrective measures, defined on the basis of discrepancies detected in the previous audits, were successfully completed.

OBSERVATION AND COACHING

Observation and coaching is one of the most important tools for preventing human error at work, enabling high quality of work processes and the strengthening of safety culture. Such observation with coaching consists of observing an individual's behaviour at work and emphasising the desired behaviour, followed by an immediate correction of the behaviour which was not in line with expectations. The main objective of observing is to give help at work.

At the beginning of 2018, a group for monitoring the effectiveness of observation programs started to operate. Its objective is to analyse trends and to assess the quality of observers' records and recommendations.

The group presented its work results in records for three-month periods and in the annual report, highlighted areas of good practice and discrepancies, and recommended an action plan for improvements.

The results in the reports were drawn up on the basis of 697 observations that took place in 2018. The observations included all disciplines and work groups in different plant departments.

III

TECHNOLOGICAL MODERNISATION AND SAFETY UPGRADE PROGRAM

In 2008 we continued with technological modernisation and upgrades in NPP which were carried out during the outage and on-line operation. We carried out modifications and technological improvements having direct impact on improved nuclear safety and operational reliability.

We introduced changes to systems and structures that ensure plant's safety and operational reliability upon simultaneous operation of the Brežice hydro power plant. We completed the first part of the project to build an Emergency Control Room and thereby made it possible to control and operate plant's shutdown when the Main Control Room is not available. We are continuing with other projects under the phase 2 of modernisation according to the Safety Upgrade Program (SUP) which is to ensure development and expansion of safety solutions in case of unlikely accidents. We also started the modernisation projects under phase 3 as provided for in the SUP.

During the outage, we carried out nine planned technological upgrades, the most difficult among these was the building of the Emergency Control Room and replacing the generator exciter. The realisation of investments in technological upgrades in 2018 was related mostly to the realisation of projects under phase 2 of the SUP. We started to build the Bunkered Building BB 2 and to design Spent Fuel Dry Storage which is part of the third and the last phase of the safety upgrades.

The application for building permit for Spent Fuel Dry Storage was submitted to the Ministry for the Environment and Spatial Planning (MOP). The procedure will take place according to the amended building laws which include an assessment of the effects on the environment.

Among projects completed or commenced in 2018, we present some of the most important individual sections:

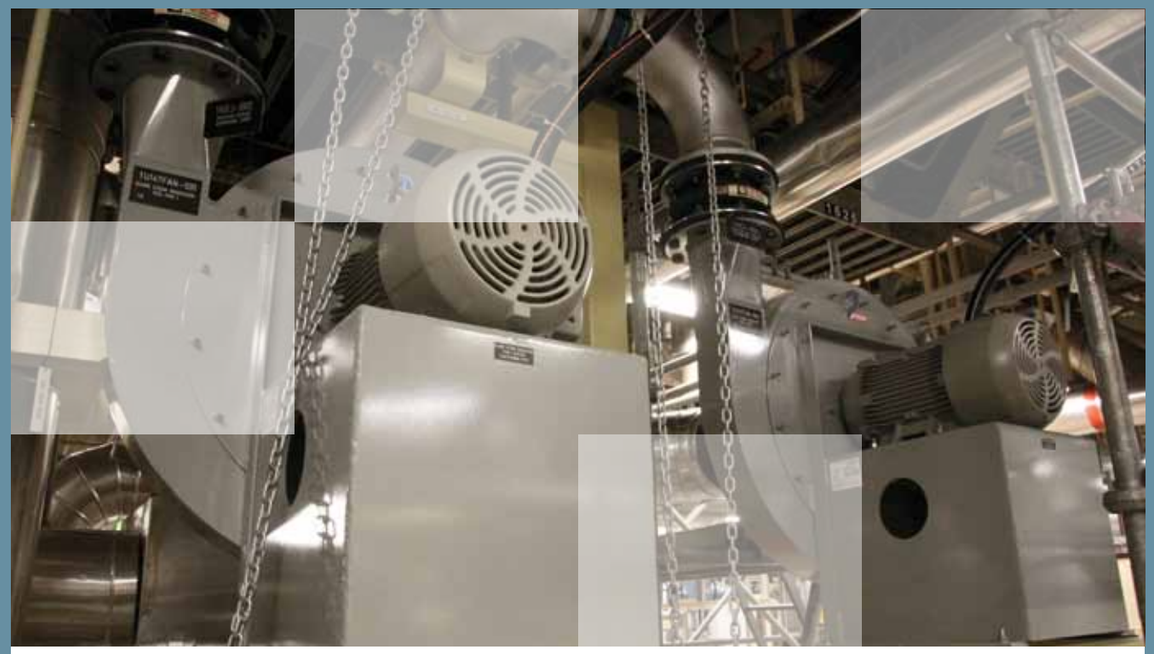
ENSURING SAFETY AND OPERATIONAL RELIABILITY

Among the most important upgrades are projects which allow us to comply with environmental legislation requirements, projects which enable stable operation of the plant, and upgrades by which we will ensure safe and reliable operation of NPP in the future as well.

MODIFICATION OF THE VENTILATION SYSTEM OF THE TURBINE-DRIVEN AUXILIARY FEEDWATER PUMP (TDAF)

The existing ventilation system did not provide the required stable temperature of the area where the TDAF pump is situated. The TDAF pump is an important component for managing an emergency also in the event of a longer loss of AC power supply, when the existing electrical ventilation system fails to ensure the required temperature stability of the room. We replaced the ventilation system with a new one that provides stable temperature during the functioning of the TDAF pump, when all power supply is lost and the high-energy pipeline breaks.

The update also ensures safety of the area against floods.



TURBINE GLAND STEAM SYSTEM UPGRADE

The Turbine Gland Steam System also maintains the sub-atmospheric pressure in the steam seal condenser. A reliable functioning of the system is always important when retaining vacuum in the main condenser.

Before the upgrade, the sub-atmospheric pressure in the seal steam condenser was maintained by one pressure blower. All discrepancies and difficulties with the pressure blower directly affected the functioning of the Lube Oil System which increased moisture in the turbine lubricating oil system.

To prevent situations when the conditions for efficient operation weaken due to irregular functioning of a component (single point vulnerability), we installed an additional blower as part of the upgrade during the outage which will be a spare blower to the existing one. We also replaced the existing blower with a new one. In addition, we installed a new gauge to measure the level of condensate in the steam seal condenser. Information on loss of sub-atmospheric pressure has been added into the alarm window in the Main Control Room (MCR).

The upgrade increases the reliability of plant's operation, reduces single point vulnerability and improves control over parameters that are important for reliable operation.

REPLACEMENT OF EXCITER AND VOLTAGE REGULATOR

During the 2018 outage, the exciter replacement completed the project of upgrading the generator system which started during the outage in 2016 when we replaced the voltage regulator.

The new exciter is by its basic design similar to the old one and has sufficient design capacity margin, allowing for reliable functioning of the system in all operating regimes. A coordination of generator protection and its auxiliary systems was carried out, the required limit values were set and the presentation in the operating diagram of the control system was updated which now shows the actual status of the whole system.

By replacing the exciter, the upgrade of the generator system to 880 MVA apparent power has been completed. This was a pre-condition for replacing the high pressure turbine, planned to take place in 2021; it will provide additional plant power uprate.

Replacing the exciter and the voltage regulator, together with the coordinated settings in the complete exciter and protection system, will ensure reliable and safe operation of the generator within the limits of its operation diagram.

REPLACEMENT OF FUEL TANK FOR THE AUXILIARY STEAM SYSTEM

In 2018, we started to replace the fuel tank for the auxiliary steam system. The upgrade includes replacing the existing fuel tank with 1514 cubic metres capacity with five underground tanks, with total usable capacity of not less than 500 cubic metres.

The main reasons for the replacement arise from the requirements to bring fuel tanks in line with the requirements from the Decree on the storage of hazardous liquids in fixed storage facilities 104/09. The new underground tanks are double shell and manufactured in accordance with the Decree and high NPP standards on environmental protection.

It is planned to replace all the associated equipment needed for smooth operation of the system (valves, instrumentation, status control, alarms in the Main Control Room), build a new pump station with new pumps, replace underground pipeline for fuel distribution and renovate the surroundings by removing the existing tank.

ISOLATION OF AUXILIARY STEAM SYSTEMS (SA) AND AUXILIARY STEAM HEATING (HS) IN CASE OF PIPE RUPTURE WITH HIGH ENERGY MEDIUM

The upgrade expanded the system for detecting high energy pipeline ruptures. The temperature switches were installed in areas where high energy medium pipelines run and where equipment important for safe and reliable operation is situated. Switches may detect high temperature in the event of rupture and initiate the closing of isolation valves in the SA or HS systems.

We installed 14 new temperature switches in seven areas in the plant.

The installation improved environmental conditions (temperature, pressure) in many areas of the auxiliary and intermediate building in the event of the rupture of auxiliary and heat steam pipelines.

SAFETY UPGRADE PROGRAM 2013–2021

The Safety Upgrade Program (SUP) is based on the decision on the plant's long-term operation and has been supplemented with experience gained following the nuclear accident in Japan. It was confirmed by Slovenian Nuclear Safety Administration (URSJV). It comprises the construction of additional safety systems to provide cooling of the reactor core and spent fuel and it 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 enable the integrity of the containment and ensure minimum releases into the environment in the event of unlikely extreme accidents.

IMPLEMENTING SAFETY UPGRADE PROGRAM IN 2018

Works under the phase 2 of the Safety Upgrade Program (SUP) continued, the main project of which is the Emergency Control Room (ECR).

Activities under the phase 3 of the SUP were started and included:

- Spent Fuel Dry Storage and
- Bunkered Building (BB 2)

CONSTRUCTION OF THE ECR

The main objective of the ECR was setting up of alternative control location that enables safe shutdown and cooling of the plant outside the MCR if it could not be used.

The modification was planned and designed for implementation in a number of phases:

- In phase 1 – during the outage in 2016 – preparatory works were carried out; a part of planned new instruments were installed in the reactor building; two transfer panels were also installed.
- In phase 2 – during the operation in the 29th fuel cycle – all cable infrastructure, including laying of cables, was installed. All the main control panels were also installed as well as the majority of control instruments for plant shutdown.
- In phase 3 – during the outage in 2018 – all required re-wiring for the use of safety components from the ECR were made and their functionality tested. All other instruments required for plant's control from the emergency location were installed and all new instrument connections were calibrated.

- In phase 4 – before and during the outage in 2019 – we plan to wire all other components for safe shutdown from the emergency location, to upgrade nuclear instruments installed during the previous outage and install instruments for the control of radiological discharges from the containment through the Passive Containment Filtered Pressure Relief Ventilation System (CFVS).

Modifications of similar scope were carried out also on the full NPP simulator. The simulator allows for quality training in areas which are the same as the actual ECR.

INSTALLING ADDITIONAL PRESSURE RELIEF VALVES IN THE REACTOR COOLANT PRESSURE RELIEF SYSTEM

The upgrade is part of phase 2 of the SUP and a response to the requirement to install an independent system that provides pressure relief for the reactor coolant system. Therefore two additional motor operated valves (MOV) were installed. This will allow for fast lowering of pressure in the reactor coolant system and for the cooling of the core with the feed and bleed method in the event of a severe accident, which has the highest priority in severe accident management.

Valves can be operated from the MCR and the ECR through transfer switches for the DEC design in the bunkered building BB 1.

ANNUAL
REPORT
2018

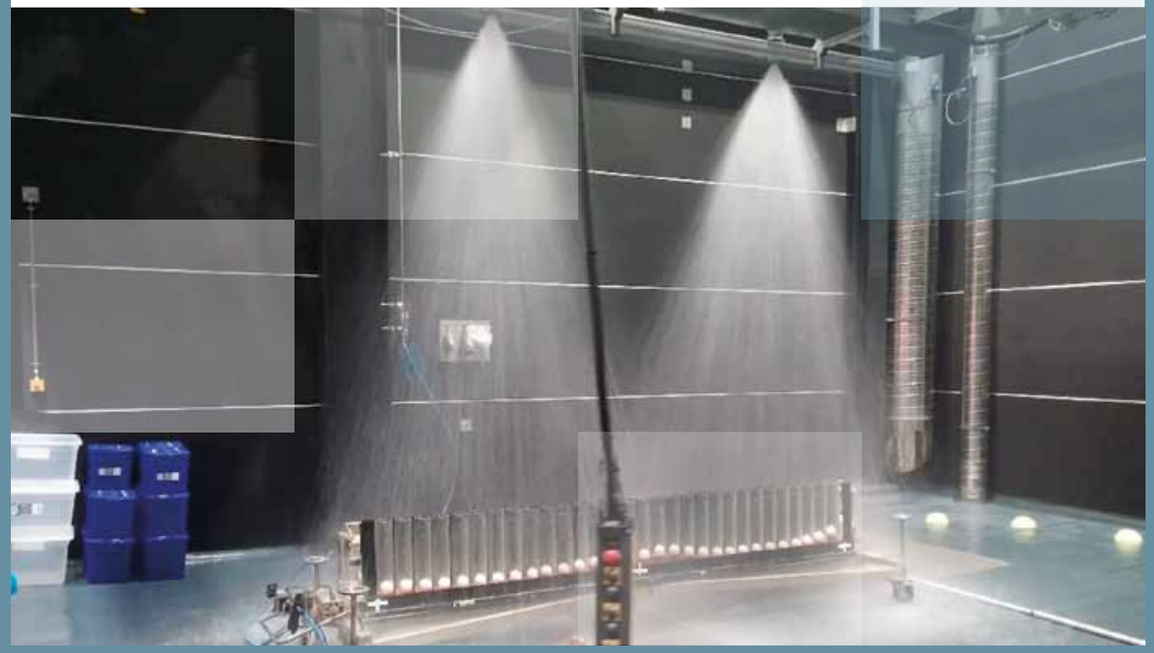
TECHNOLOGICAL
MODERNISATION
AND SAFETY
UPGRADE
PROGRAM

ALTERNATIVE COOLING OF THE SPENT FUEL POOL (SFP)

The upgrade of the SFP cooling was also carried out during phase 2 of the SUP. It is intended to prevent or mitigate consequences in the event of a severe accident in the Fuel Handling Building (FHB).

To prevent spent fuel elements in the SFP from melting in case of a serious disaster, some design changes were already introduced to allow for:

1. alternative SFP cooling with a mobile heat exchanger in case of the failure of all spent fuel cooling systems built in by the basic designs; permanently installed connected mobile heat exchanger will allow for pumping water out of the pool and for cooled water to return back to the pool; the water will be cooled by water from the Sava river;
2. alternative cooling of fuel elements with a spray – if the pool leaks to the extent that the existing water supply systems fail to replace the loss, a stable spray system will be used which will cool down uncovered fuel elements;
3. pressure relief of the FHB – if water evaporation in the SFP caused overpressure in the building, the installed decompression flap will provide steam relief from the building.



TECHNOLOGICAL MODERNISATION AND SAFETY UPGRADE PROGRAM

UPGRADING THE OPERATIONAL SUPPORT CENTRE (OSC)

Increasing the capacity and upgrading the OSC fall under phase 2 of the SUP. Capacities of the existing underground shelter will be increased, while the new building will provide conditions for long-term work and habitability for 200 people, even in case of an extreme earthquake, flood and other unlikely emergency accidents. Aside from additional air filters, the new diesel generator will provide independent power supply for the centre. In 2018, the new building construction was started.

Basic building works were completed while the remaining building works and equipment installation will be completed in 2019.

TECHNOLOGICAL UPGRADES DUE TO BREŽICE HYDROPOWER PLANT

RECONSTRUCTION OF EQUIPMENT ON THE NPP DAM

Equipment upgrading on the NPP dam following the construction of Brežice hydropower plant, which took place in 2018, included modifications of existing systems on the Sava river and setting up the central management and control system for operating the tilting gates from the MCR.

We also bought a diesel generator to operate tilting gates smoothly; the generator provides power to tilting gates drive if the external power supply fails.

The upgrades increased the reliability of tilting gates operation and control of the heat sink.

The NPP modifications due to the Brežice hydropower plant to be carried out in 2019 include the building of permanent wells for reducing the level of groundwater in areas where NPP technological buildings are situated. Higher groundwater results from higher Sava river level and building a sealing curtain along the river bed, which restricts the groundwater drainage path.

IV

MAJOR MAINTENANCE ACTIVITIES AND INSPECTION OF PRESSURE BOUNDARIES

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.

During corrective activities on equipment included in the preventive maintenance program, we conduct a detailed sample analysis and revise the program as needed.

The most vital maintenance activities are carried out during the outage, while others during plant' operation - the majority of them in accordance with preventive plans and plans on managing ageing of equipment and components.

The 2018 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 activities included: low voltage turbine overhaul, main electric generator review, the replacement of electromotor and internal parts of reactor pump, replacement of fission cell guides, the replacement of 6.3 Kv breakers on the electrical safety bus, turbine valves overhaul, the 3-year review of 50 percent of all U-pipes in both steam generators with Eddy Current method, the repair of the inlet and outlet internal areas of the heat exchanger for safety components cooling, the replacement of two heat exchangers in the containment cooling units and various other tasks according to the equipment Ageing Management Program (AMP).

Predictive maintenance included determining the equipment health by using various techniques which are not part of the primary maintenance: thermographic monitoring, vibration monitoring of vital rotating components, monitoring the lubricant quality and monitoring rotors during operation of major powerful electrical motors.

Checking the integrity of components which represent a pressure boundary of the primary system was carried as planned; non-destructive methods were used for this purpose. There were no discrepancies found.

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

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

V
PLANT PERFORMANCE

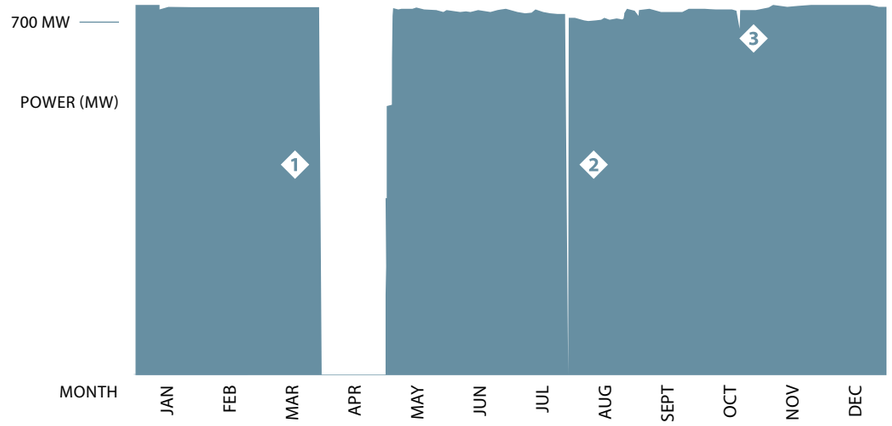
Performance indicators used to follow up the achievement of operating targets, efficiency and improvements in certain areas of the plant's operations, support decision making process, facilitate setting work priorities and the provision of assets to ensure successful operation of the plant. These indicators also allow for comparison with other power plants.

In 2018, the NPP's total output at the generator outlet was 5,776,439.33 MWh of gross electricity, representing 5,489,907.91 MWh of net electricity. The annual output was higher than planned, amounting to 5,430,000.00 MWh. The availability factor was 91.5 percent while the capability factor was 90.9 percent.

PRODUCTION DIAGRAM FOR 2018

Gross energy produced: 5,776,439.3 MWh
Net energy produced: 5,489,907.9 MWh
Availability factor: 91.5%
Capability factor: 90.9%

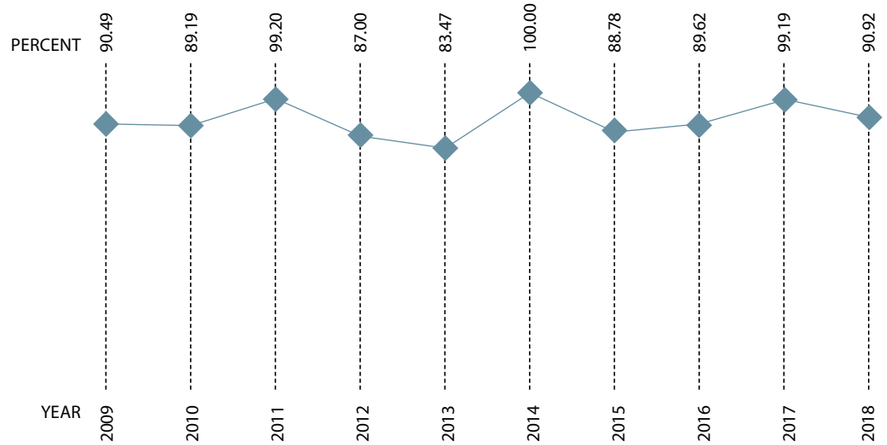
1. Outage 2018
2. Disconnection from the grid for main transformers bushings on-line measuring system removal
3. Turbine valves test



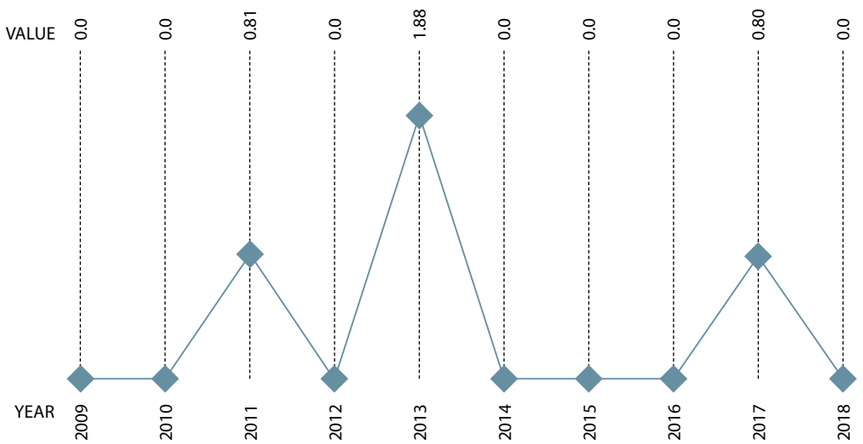
OPERATIONS

UNIT CAPABILITY FACTOR

NEK target for 2018: ≥ 90%



UNPLANNED AUTOMATIC SCRAMS, NORMALISED AT 7000 HOURS CRITICAL

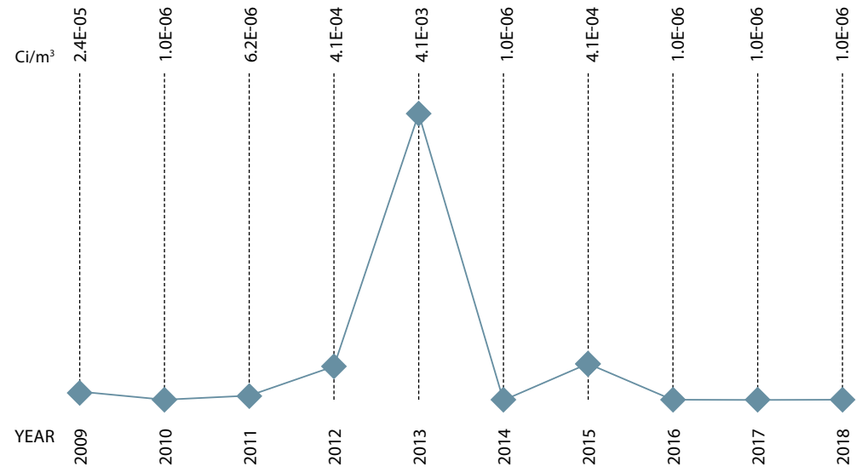


NUCLEAR FUEL AND SECONDARY CHEMISTRY

Specific activities of the primary coolant and its contamination in 2018 (during fuel cycles 29 and 30) were far below the limits prescribed by law. In the fuel cycles 29 and 30 until the end of 2018, there were no damages to the nuclear fuel or deterioration of its integrity. The Fuel Reliability Indicator (FRI) of this period was better than 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 2018: ≤ 2E-04



Chemical and radioactive parameters in the cooling water media systems were kept in accordance with the technical and chemical specifications. The ingress of aggressive chemical contaminants into the primary cycle was comparable to previous years and remained at a low level. This applies also to the radiation source inventory, resulting from corrosion products in the reactor coolant.

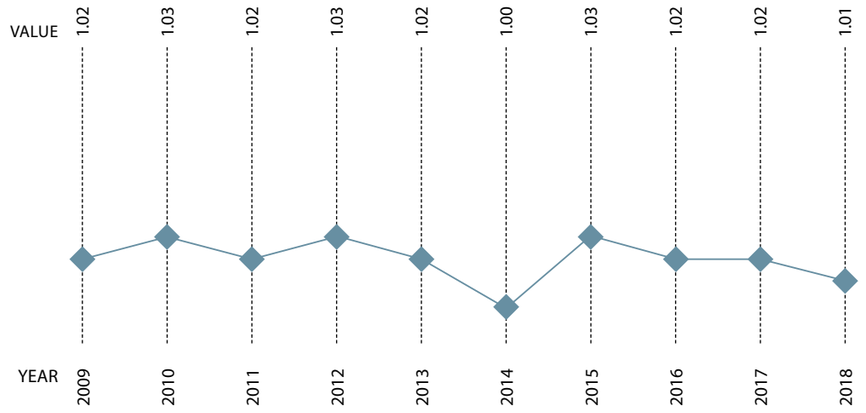
The ingress and discharge of chemical contaminants into the secondary cycle were occasionally detected, in particular during transients (following changes in power and after restarting the plant) but they remained moderate. There were no significant effects of degradation mechanisms of installed material. Release of metal particles and iron oxides due to erosion and erosion corrosion in the secondary cycle was slightly lower when compared to previous years. WANO indicator of the secondary chemistry cycle, which includes the concentration of aggressive contaminants and the release of iron in its evaluation, reached the value of 1.01. The target indicator value of ≤ 1.02 improved (optimal indictor value is 1.00).

The chemistry of other water media in the closed cooling cycles was also adequately maintained. No particularities were detected in the Component Cooling System (CCS) where in 2017 the corrosion inhibitor was replaced and toxic chromate removed.

The monitoring of key chemical parameters was effective as well as the cleaning systems which contributed to the effective chemistry program. Since 2018, NPP has been monitoring biological activities in certain systems, especially those where conditions exist for occurrence and growth of microorganisms which could have an effect on degradation processes and heat exchange. Values measured in this area were within the expected parameters and do not require any special measures.

The chemistry of water media systems continues to ensure long-term plant system availability and importantly contributes to the integrity of nuclear fuel and reactor coolant as well as to keeping doses within limits.

SECONDARY CHEMISTRY PERFORMANCE



PROCUREMENT OF SERVICES AND EQUIPMENT

We continued purchasing services and equipment for the 2019 outage and with providing support in the implementation of the SUP. In line with relevant laws, internal plant procedures and granted resources, all the remaining procurement processes were carried out.

We published 128 public invitations to tender on the Public Procurement Portal of which 45 were also published in the Official Journal of the EU (TED); on the basis of these publications we received 107 offers from various providers. In 2018 we had no audit request. In accordance with legislative changes on public procurement we introduced a new application for electronic submission of offers.

Cooperation with suppliers in the local market was successful. In the foreign market, difficulties with American suppliers have been increasingly greater as they are abandoning support for the nuclear industry or are involved in larger projects and therefore not interested in relatively small supply to European business partners. An additional obstacle is public procurement and e-commerce.

To understand regulations and to use the application for e-commerce better, we will continue visiting our vital business partners.

VI
INTERNATIONAL COOPERATION

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 in their work environment. An active role and international reviews significantly contribute to the improvement of work processes and the achievement of good safety and operational results.

OUR PARTICIPATION IN 2018

The President of NPP's Management Board was appointed vice-president of the Governing Board of Paris WANO, which comprises representatives of all countries who are members of this Centre. Two NPP's employees are temporarily working at WANO. One of NPP's employees worked in the London Centre as a senior adviser in the operating experience team. The second NPP's employee is in the Paris Centre working as a peer reviewer in nuclear plant expert missions of WANO.

In August, preparatory meetings for the 5th international expert peer review of plants' operations (mission WANO Peer Review) took place in NPP. The mission is to take place in 2019. The mission is to introduce a review of response by simulator operational staff.

For years now NPP has been an active participant in WANO and INPO organisations. Our experts have taken part in 51 of their missions worldwide. In 2018 three of our representatives took an active part in international peer reviews of plants operations in Tihange in Belgium, Goesgen in Switzerland, and Sellafield in the United Kingdom.

Through the Technical Assistance Program our plant has hosted 34 such missions in the past years, with topics which cover various areas of the plant's activities.

The NPP's representatives take part in professional training organised by various expert organisations. Good results of our plant are becoming a model practice for other nuclear facility operators and a source of good practices in various fields of work. There have been 39 expert benchmarking visits in NPP. In 2018 we received experts from the Spanish plants Asco, Trillo and Almaraz, the Dutch plant Borssele, the Swedish plant Oskarshamn, the Slovak plant Mochovce and the Russian organisation Rosenergoatom. Our experts attended the international benchmarking meeting in Byron plant in the USA.

Through WANO, NPP informed the industry of eight operating experiences in our plant.

OSART follow-up mission took place in NPP between 15 and 19 October and it was carried out by IAEA. Its objective was to determine the status of recommended areas for improvement and the suitability of implemented actions that were developed on the basis of OSART mission recommendations from 2017. A total of 70 percent of recommendations were assessed as suitably applied while 30 percent of recommendations were assessed as a satisfactory improvement.

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

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

- equipment maintenance in 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 experience in applying accident analysis programs (MAAP - Modular Accident Analysis Program User Group);
- exchange of experience concerning erosion/corrosion issues (CHUG - Checworks Users Group).

Our plant has participated in the PWROG annual conferences, organised separately for nuclear facilities from Europe.

We actively participate in conferences of Nuclear Society of Slovenia and Croatia.

ANNUAL
REPORT
2018

INTERNATIONAL
COOPERATION
VI

MEMBERSHIP IN INTERNATIONAL ORGANISATIONS

At NPP we are aware of the importance of participating in international organisations and in the international monitoring of our operation. Only this way can we attain international comparable operation and safety results. For this purpose, NPP is a member of many organisations listed below:

WANO

All nuclear power plants in the world are members of 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.

IAEA

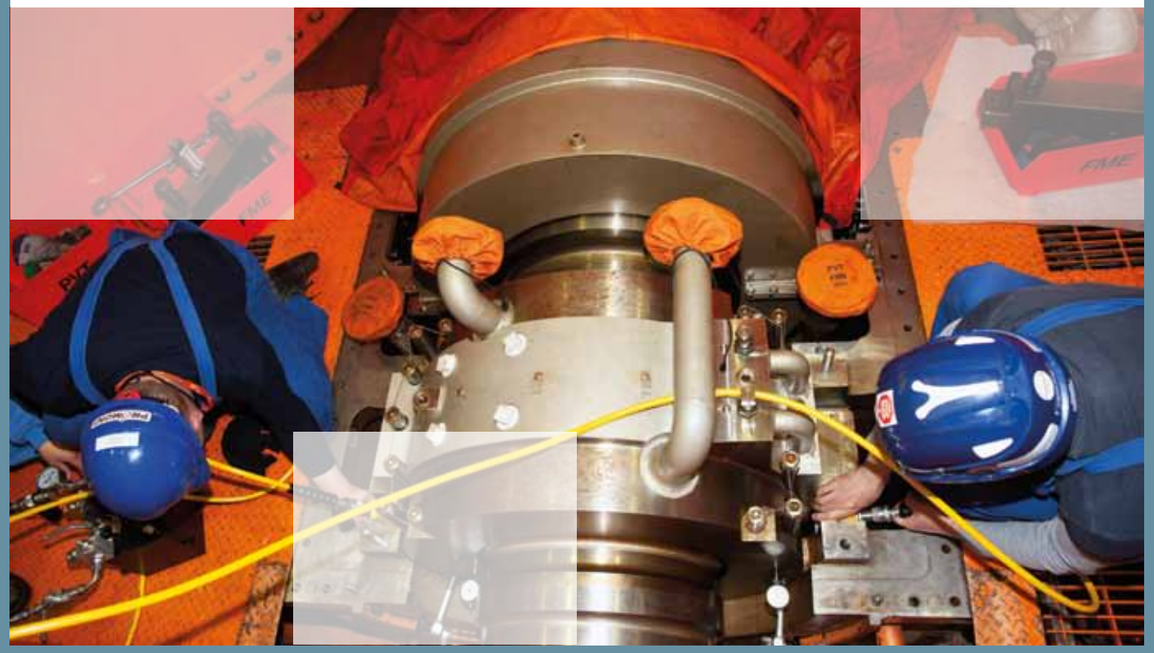
The International Atomic Energy Agency (IAEA) is an independent intergovernmental organisation which operates within the United Nations Organisation. Its primary objective is to help members in planning and using nuclear technology for various peaceful purposes. This includes production of electricity and transfer of technology and knowledge in this area. IAEA develops safety standards that support the realisation of high level of safety in using nuclear energy and on protecting the public against 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. It 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 USA 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, NPP has become a member in several programs which gives access to information and literature in various areas.



ANNUAL
REPORT
2018

INTERNATIONAL
COOPERATION
VI

PWROG

PWROG (Pressurized Water Reactor Owners Group) is an association of all the pressurized water reactor (PWR) operators of the company Westinghouse. The organisation 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), 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.

VII

PROFESSIONALISM AND ENTHUSIASM OF STAFF AS THE BASIS OF SUCCESS

Through systematic staff training and the system for managing staff knowledge we ensure high level of professionalism and enthusiasm. The comprehensive development of staff is one of the fundamental values which are the basis for our activities and with the assistance of which we realise our vision and mission.

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.

COMPREHENSIVE DEVELOPMENT OF STAFF

Prerequisites for long-term safe and stable operation of the plant are provided through long-term planning of human resource processes, timely staff recruitment and the provision of systematic development for all employees. We are aware that professional, well qualified and competent individuals are a prerequisite for work processes to be performed safely, efficiently and at high quality level, as well as for constant improvements in all work areas. The established professional training programs are intended to provide 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 onto younger generations are provided through on-the-job training programs at the work place and under mentorship. At the same time steps are taken to bring up and develop the next generation for key positions in the plant. In human resources special attention has been paid to monitoring staff enthusiasm and managerial processes, such as annual development discussions.

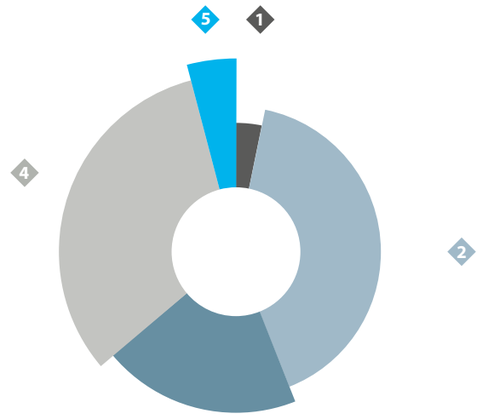
Staff with expertise and skill, while possessing suitable values, are of strategic significance and one of the key factors of nuclear safety, long-term stability, competitiveness and success.

In the field of human resources, the year 2018 was another year of gradual replacement of generations – this year to a more limited extent – which has been monitored in the past decade. It reflected in 36 new employees for existing and future needs. In accordance with expectations, employee retirement process continued for those who had met the conditions for old-age retirement. We also had first retirements based on the new compulsory occupational insurance scheme. The annual staff turnover was 1.74 percent, expressing a stable human resources culture.

At the end of the year, there were 633 employees at NPP of which 44.5 percent had high professional and university education or academic title. The employee structure included 11 doctors of science and 15 masters of science. Share of female staff was 14.2 percent. At the end of the year, 11 students were receivers of our scholarship for the Bologna second degree university study program.

DISTRIBUTION OF EMPLOYEES ACCORDING TO THE LEVEL OF EDUCATION

- 1 UP TO LEVEL 4: 3.2%
- 2 LEVEL 5: 40.8%
- 3 LEVEL 6: 19.8%
- 4 LEVEL 7: 32.1%
- 5 LEVEL 8: 4.1%



TRAINING OF OPERATING STAFF

In NPP we organise initial licensed staff training, provide on-going licensed staff training and professional training of equipment operators.

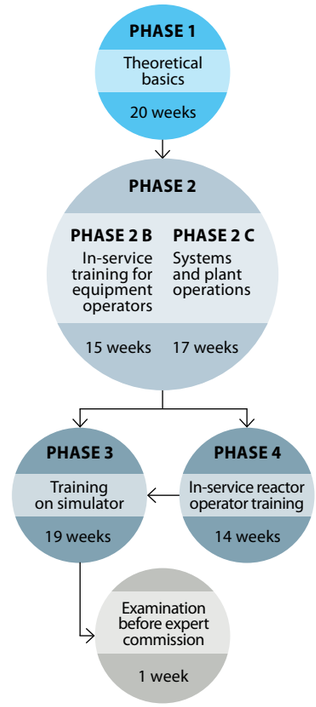
Initial licensed staff training for reactor operators was conducted in accordance with national legislative requirements and practices in the nuclear industry. The 85-week training course is structured in four phases of different forms of training, aimed at preparing the candidates for independent work in the MCR. In December, three candidates successfully completed phase 3 training - Simulator Training and phase 4 training - Reactor Hands-on Operator Training. All three candidates also successfully passed the exam before an expert examination commission appointed by URSJV for a licensed Reactor Operator (RO).

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

THE INITIAL LICENSED STAFF TRAINING

ANNUAL
REPORT
2018

PROFESSIONALISM
AND ENTHUSIASM
OF STAFF AS
THE BASIS
OF SUCCESS
VII



Final exams before an expert commission appointed by URSJV were successfully passed by all 25 candidates: two candidates were awarded their first senior reactor operator (SRO) licence, three candidates were awarded the first shift engineer license, seven successfully renewed their SRO licence, five their licence for a RO and eight their license for a 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 aimed at refreshing and upgrading existing knowledge and skills which equipment operators need in their day-to-day work.

A group of 19 production staff attended a four-day hands-on training for refuelling equipment handling. Training was aimed at preparing the participants for safe and quality performance of this important refuelling activity during the outage.

Prior to undertaking major activities in the plant, the operational staff underwent training on the full-scope simulator.

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

Within the framework of initial training for technical staff, a course in the Fundamentals of Nuclear Power Plant Technology (OTJE) is usually carried out. In 2018 there were two such courses, one in the spring and the other in autumn. More than 22 participants from NPP attended the two courses.

Training of maintenance personnel programs continued in the field of specialist and legally required knowledge. The training required was 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 for practical training from individual maintenance departments.

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

OTHER LEGALLY PRESCRIBED AND GENERAL TRAINING

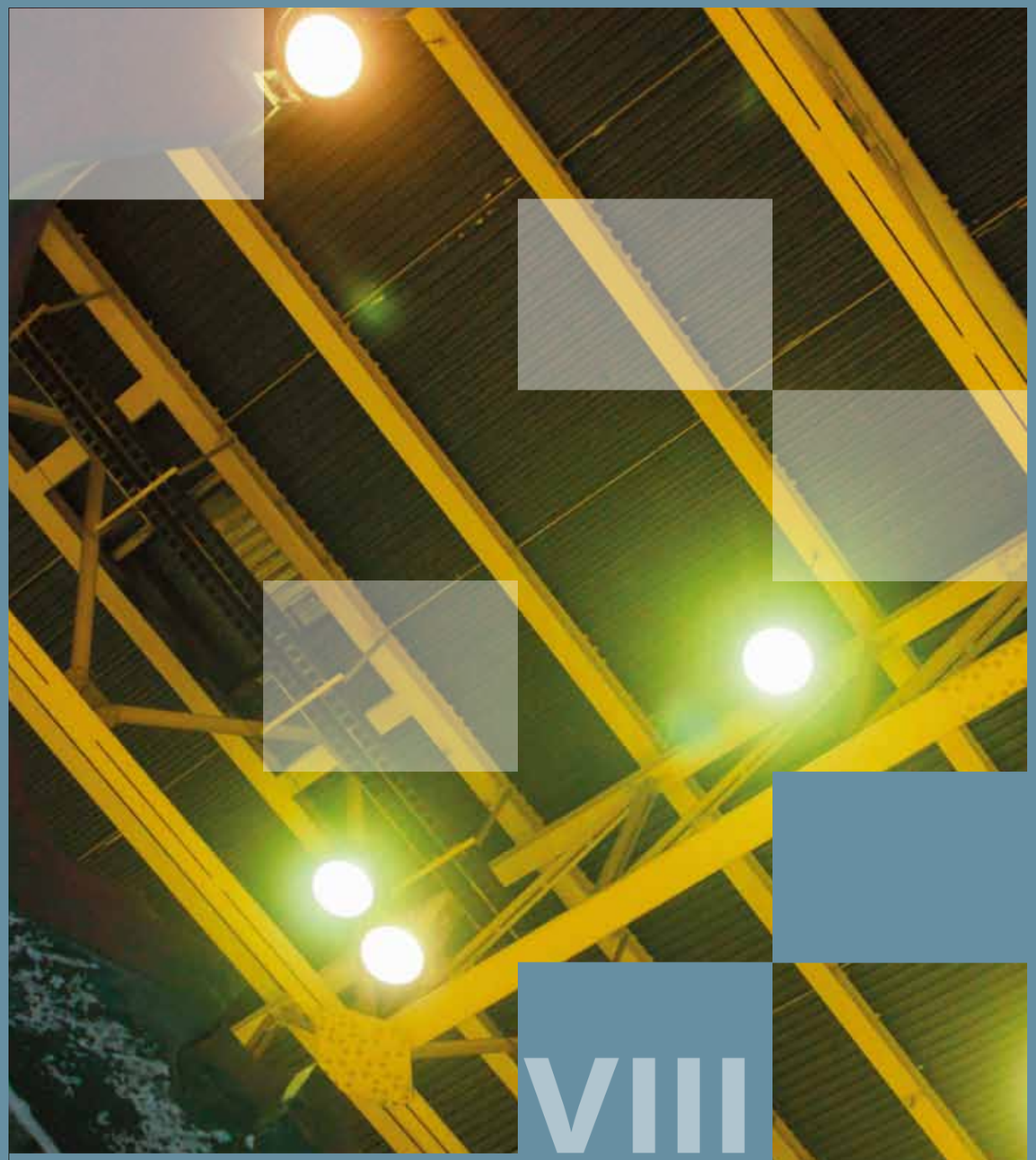
Legally required training includes: occupational health and safety, fire protection, hazardous substances, etc. General training includes: General Employee Training (GET) program, first-line supervisor training, etc.

We continued with established programs of initial training 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.

Extensive two NZIR drills were carried out, both supported by the use of the full-scope simulator.

In addition to the above mentioned training, many courses were carried out for other departments within the power plant. They were intended to update the staff on new legislation, on the implementation of innovations in individual processes, as well as general courses on computer literacy and foreign languages.



VIII
COMPANY ORGANISATION

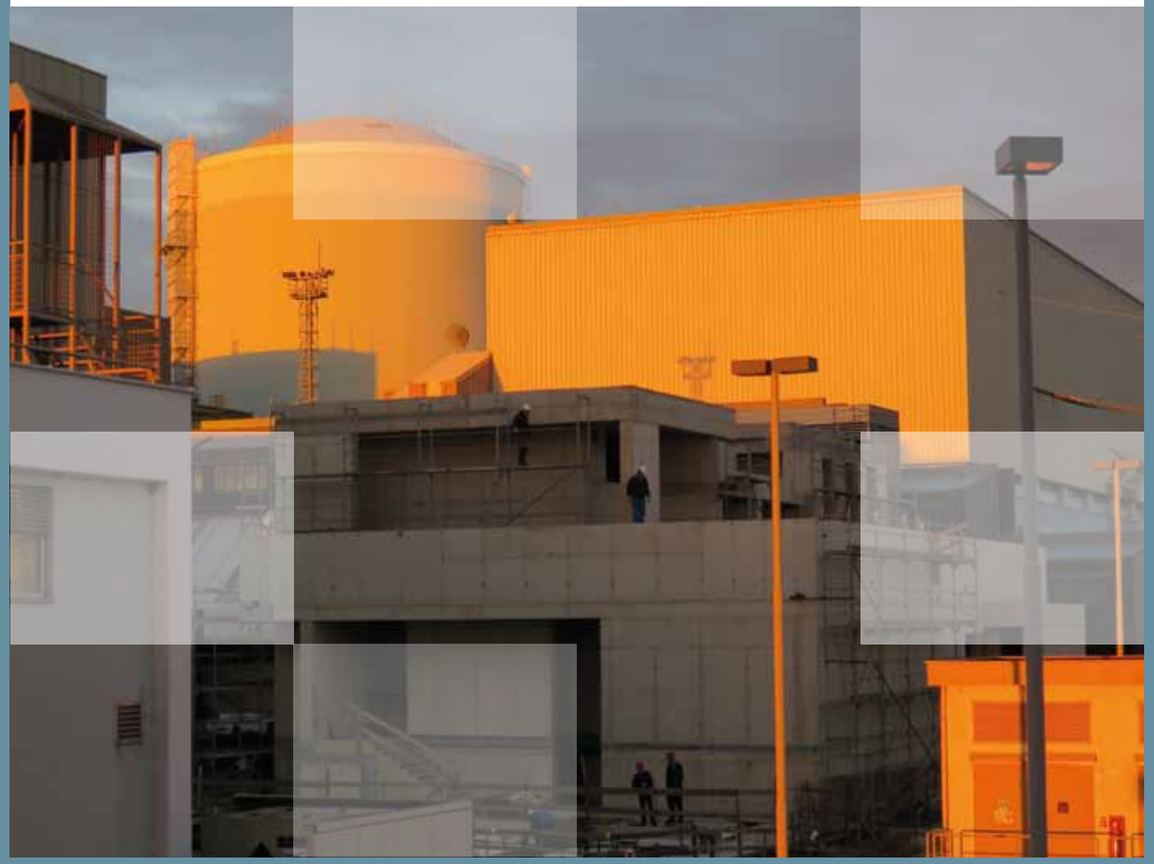
Legislation, the Intergovernmental Agreement, Articles of Association, and nuclear industry standards represent the external framework for the operation and business of NPP. The plant's strategic documents - Code of Safety and Business Ethics, Five-Year Development Plan, and Management System - provide answers to questions 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.

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 company with limited liability. 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 two members – GEN energija, d. o. o., Krško and Hrvatska elektroprivreda d. d., Zagreb. NPP generates 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.

The internal organisation of the company is designed to cover all functions which are in accordance with nuclear industry standards and regulations necessary for the work processes to be carried out professionally and at a high quality level. Due to the company's specific position, its internal organisation covers engineering and corporate functions, including independent nuclear safety function. The Management System, one of the key documents, outlines in a systematic manner the fundamental organisational features and defines the responsibilities of the management, and the key and support processes.

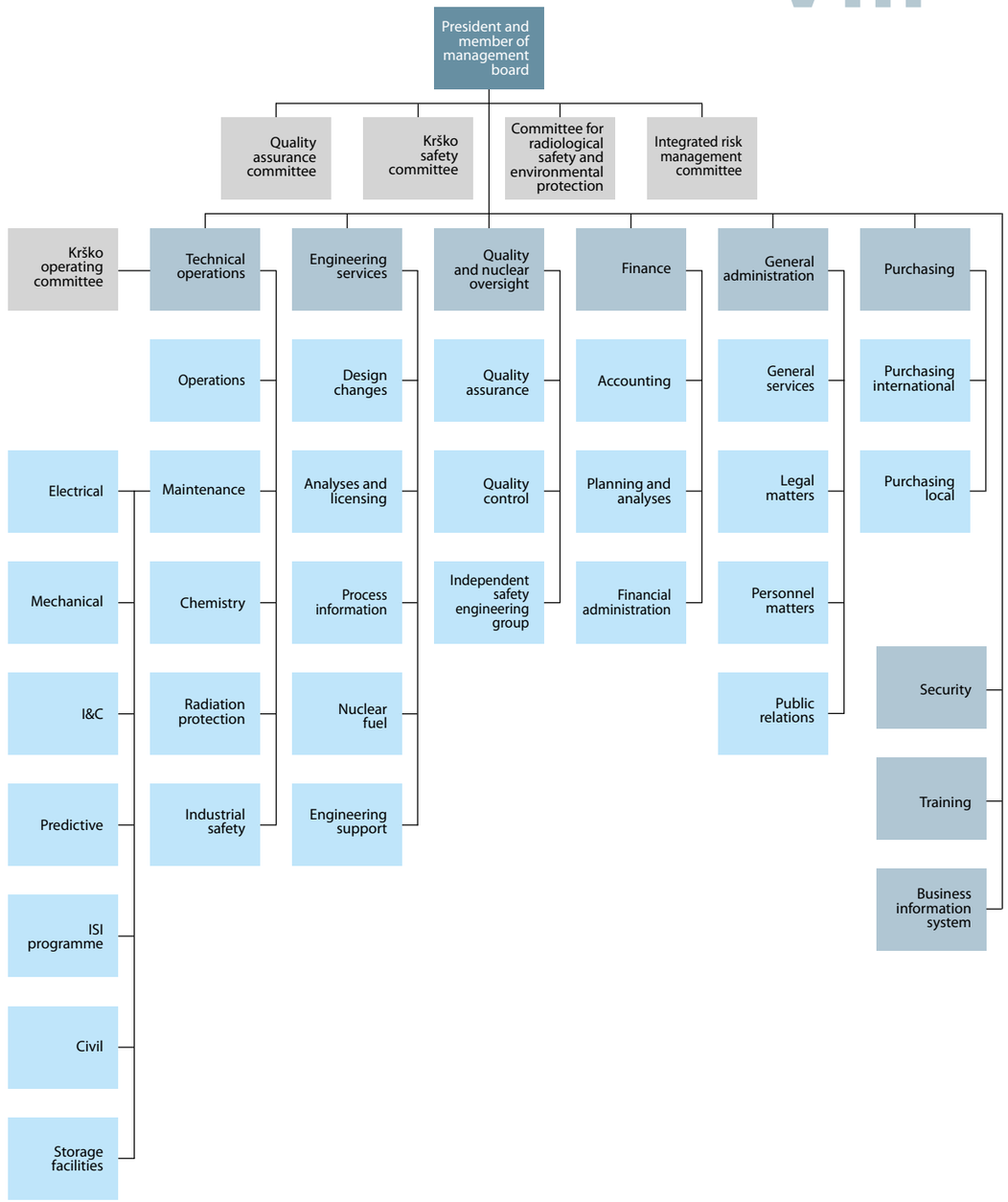
The advantage of our organisation lies in the competent and responsible structure of our employees, whose virtue lies in their high enthusiasm and motivation. Knowledge and professionalism are highly valued; therefore, employee personal development is one of our on-going activities.

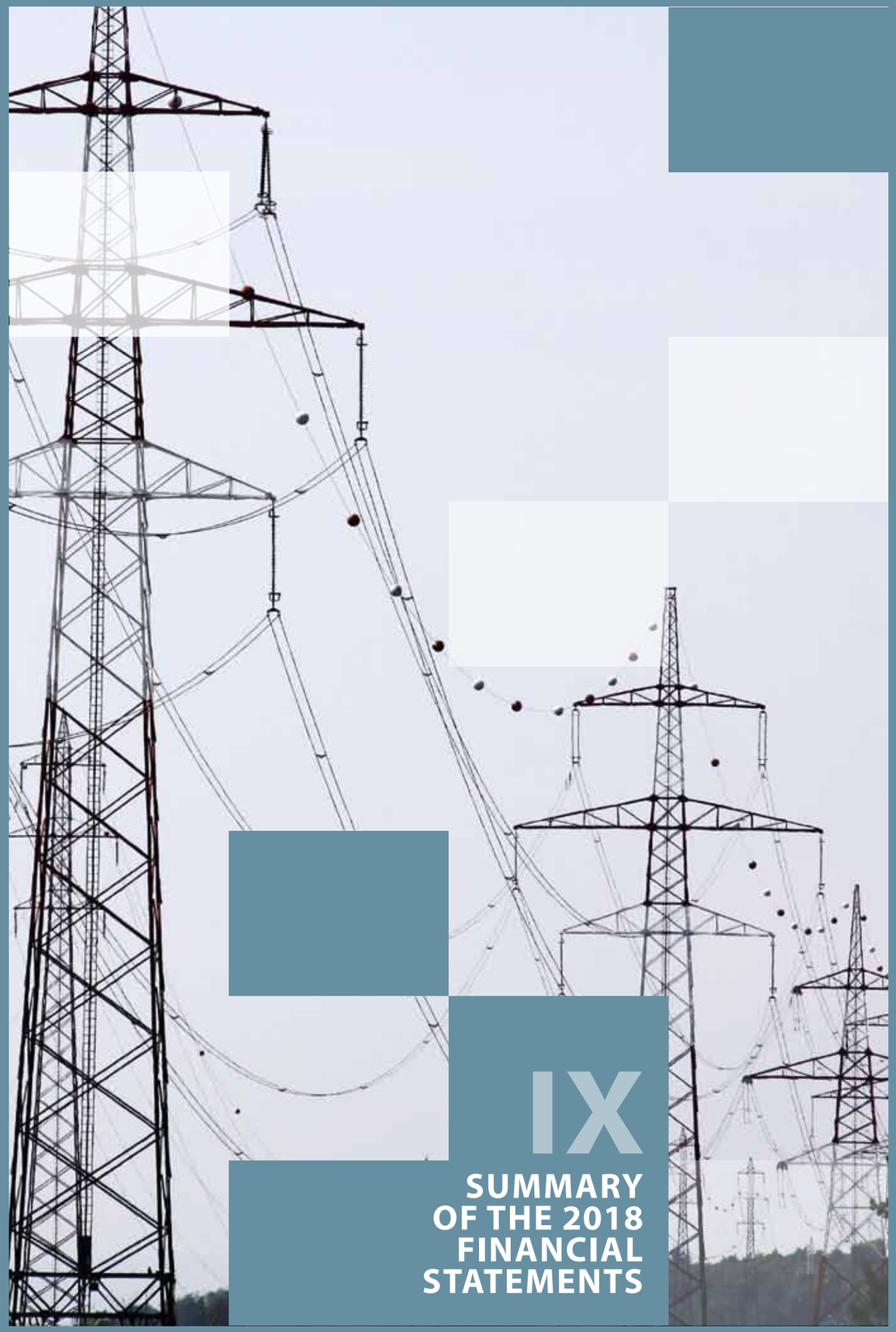


ORGANISATION CHART

ANNUAL
REPORT
2018

COMPANY
ORGANISATION
VIII





IX
SUMMARY OF THE 2018 FINANCIAL STATEMENTS

SUMMARY OF THE 2018 FINANCIAL STATEMENTS
IX

In accordance with the Companies Act (ZGD-1) and the Articles of Association of NPP, a summary of the NPP Report for 2018 is given below. The summary includes the main characteristics of business operations in 2018 and abridged basic financial statements. The full versions of basic financial statements are presented in the NPP Annual Report for 2018, 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).

Business results are shown in abridged basic financial statements. These should be interpreted together with the notes detailed in the NPP's 2018 Annual Report. The Annual Report was submitted to the organisation authorised to process and publish the data – AJPES – on the first working day after it had been accepted at NPP's General Meeting. It is published on its web page (www.ajpes.si).

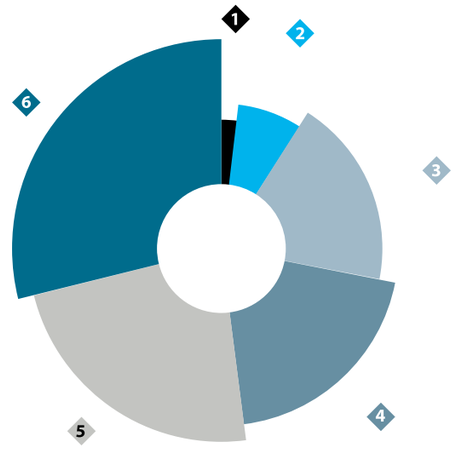
The year 2018 was successful for NPP; the plant's economy and nuclear safety were at a high level, while all environmental requirements were strictly respected. All key targets were met. We exceeded annual planned production and generated 5,489,429 GWh of electricity, which is 59,429 GWh more than planned. We generated EUR 158,494,568 of turnover and EUR 158,494,568 of expenditure which means turnover and expenditure were equal.

The expenditure structure is shown in the graph below.

SUMMARY OF THE 2018 FINANCIAL STATEMENTS IX

EXPENDITURE STRUCTURE FOR 2018

1 2% OTHER EXPENSES
2 7% WATER USE FEE
3 19% NUCLEAR FUEL
4 20% DEPRECIATION COSTS
5 23% COST OF LABOUR
6 29% COST OF MATERIAL AND SERVICES



The largest share in the structure of expenditure represents costs for materials and services, without nuclear fuel, these are followed by costs for labour, cost of depreciation, cost of nuclear fuel; in total these represent 91 percent of all expenses.

The financial position of NPP is satisfactory. Long-term resources cover all long-term assets and also all inventories.

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

ANNUAL
REPORT
2018

SUMMARY OF THE 2018 FINANCIAL STATEMENTS IX

Deloitte.

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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, 2018, the 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, 2018.

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 18, 2019.

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.

For signature please refer to the original Slovenian version.

Nina Kravanja Novak
Certified Auditor

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

Ljubljana, 18 March 2019

TRANSLATION ONLY, SLOVENE ORIGINAL PREVAILS

SUMMARY
OF THE 2018
FINANCIAL
STATEMENTS

IX

FINANCIAL STATEMENTS

BALANCE SHEET AS OF 31.12.2018

in EUR

ASSETS	31.12.2018	31.12.2017
A. Long-term assets	382,842,516	335,759,148
Tangible fixed assets	382,803,838	335,706,571
Investment property	–	–
Long-term financial investments	38,678	52,577
B. Current assets	134,867,019	161,003,271
Inventories	89,067,547	76,420,003
Short-term financial investments	30,053,829	67,143,151
Short-term operating receivables	15,712,965	17,405,995
Cash	32,678	34,122
C. Short-term deferred expenses and accrued revenue	665,541	647,309
TOTAL ASSETS	518,375,076	497,409,728

LIABILITIES	31.12.2018	31.12.2017
A. Capital	440,651,659	440,362,215
Called-up capital	353,544,826	353.544.826
Revenue reserves	89,294,326	89,294,326
Reserves from fair value re-evaluation	1,616,979	1,327,535
Net profit or loss carried over	–3,804,472	–3,804,472
Retained net profit or loss	0	0
B. Provisions and long-term accrued costs and deferred revenue	10,828,224	14,003,883
Provisions for jubilee benefits and severance pay	10,433,453	10,454,628
Other provisions	394,771	427,152
Long-term accrued costs and deferred revenue	0	3,122,103
C. Long-term operating liabilities	187,298	197,916
Long-term operating liabilities	187,298	197,916
Č. Short-term operating liabilities	61,050,079	38,212,307
Short-term operating liabilities	61,050,079	38,212,307
D. Long-term accrued costs and deferred revenue	5,657,816	4,633,407
TOTAL LIABILITIES	518,375,076	497,409,728

SUMMARY
OF THE 2018
FINANCIAL
STATEMENTS

IX

INCOME STATEMENT FOR YEAR ENDING 2018

in EUR

	2018	2017
Operating revenue	158,195,044	158,392,606
Operating expenses	158,242,254	158,542,053
OPERATING PROFIT OR LOSS FROM OPERATIONS	–47.210	–149.447
Financial revenue	299,524	298,397
Financial expenses	252,314	148,950
OPERATING PROFIT OR LOSS FROM FINANCING	47,210	149,447
NET OPERATING PROFIT OR LOSS FOR THE PERIOD	0	0
NET OPERATING PROFIT OR LOSS FOR THE PERIOD	0	0

CASH FLOW STATEMENT FOR THE YEAR ENDING 2018

in EUR

	2018	2017
A. Cash flows from operating activities		
Cash receipts from operating activities	176,290,556	177,295,834
Cash disbursements from operating activities	131,299,138	135,022,905
POSITIVE OR NEGATIVE CASH FLOW STATEMENT FROM OPERATING ACTIVITIES	44,991,418	42,272,929
B. Cash flows from investing activities		
Cash receipts from investing activities	209,180,340	202,262,315
Disbursements from investing activities	254,173,202	244,546,055
POSITIVE OR NEGATIVE CASH FLOW STATEMENT FROM OPERATING ACTIVITIES	–44,992,862	–42,283,740
C. Cash flow from financing activities		
POSITIVE OR NEGATIVE CASH FLOW STATEMENT FROM FINANCING ACTIVITIES	–	–
CLOSING BALANCE OF CASH	32,678	34,122
Cash flow statement for the period	–1,444	–10,811
Opening balance of cash	34,122	44,933

SUMMARY
OF THE 2018
FINANCIAL
STATEMENTS

IX

STATEMENT OF CHANGES IN CAPITAL FOR THE YEARS 2018 AND 2017

in EUR

	Nominal capital	Legal reserves	Statutory reserves	Other reserves from profit	Reserves from fair value re-evaluation	Net profit or loss carried over	Retained net profit or loss	TOTAL
Opening balance 01.01.2018	**353,544,826**	**35,354,483**	**53,321,477**	**618,366**	**1,327,535**	**–3,804,472**	**0**	**440,362,215**
Changes to equity – transactions with owners	–	–	–	–	–	–	–	–
Total comprehensive income of financial year	–	–	–	–	–	–	0	0
Changes within capital – allocation of part of net profit for reserves from profit	–	–	–	–	–	–	–	–
Changes in capital – other changes in capital	–	–	–	–	289,444	–	–	289,444
Closing balance 31.12.2018	**353,544,826**	**35,354,483**	**53,321,477**	**618,366**	**1,616,979**	**–3,804,472**	**0**	**440,651,659**
Opening balance 01.01.2017	**353,544,826**	**35,354,483**	**53,321,477**	**167,488**	**–933,709**	**450,878**	**0**	**441,905,443**
Changes to equity – transactions with owners	–	–	–	–	–	–	–	–
Total comprehensive income of financial year	–	–	–	–	–	–	0	0
Changes within capital – allocation of part of net profit for reserves from profit	–	–	–	450,878	–	–450,878	–	0
Changes in capital – other changes in capital	–	–	–	–	2,261,244	–3,804,472	–	–1,543,228
Closing balance 31.12.2017	**353,544,826**	**35,354,483**	**53,321,477**	**618,366**	**1,327,535**	**–3,804,472**	**0**	**440,362,215**

LIST OF ACRONYMS

AJPES	Agency of the Republic of Slovenia for Public Legal Records and Related Services
AMP	Aging Management Program
BB	Bunkered Building
BS OHSAS	British Standard – International Occupational Health and Safety Management Standard
CCS	Component Cooling System
CFVS	Passive Containment Filtered Pressure Relief Ventilation System
CHUG	Checworks Users Group
NP	Net Profit
DEC	Design Extension Condition
ECR	Emergency Control Room
ENISS	European Nuclear Industry Safety Standards
EPRI	Electrical Power Research Institute
EPZ	Elektriciteits Produktiemaatschappij Zuid-Nederland
EU	European Union
FHB	Fuel Handling Building
FORATOM	European Atomic Forum
FRI	Fuel Reliability Indicator
GET	General Employee Training
HS	Auxiliary Steam Heating System
IAEA	International Atomic Energy Agency
IJS	Jožef Stefan Institute
INPO	Institute for Nuclear Power Operations
I&C	Instrumentation and Control
ISI	In-Service Inspection
ISO	International Organisation for Standardization
MAAP	Modular Accident Analysis Program User Group
MOP	Ministry of the Republic of Slovenia for the Environment and Spatial Planning
MOV	Motor Operated Valve
NDE	Non-Destructive Examination
NEK/NPP	Nuklearna elektrarna Krško /Krško Nuclear Power Plant/
NMAC	Nuclear Maintenance Application Centre
NORP	Compensation for Restricted Use of Area
LILW	Low- and Intermediate-level Waste
NRC	Nuclear Regulatory Commission
NUPIC	Nuclear Procurement Issues Committee
NZIR	Protection and Rescue Plan
OSART	Operational Safety and Review Team
OTJE	Fundamentals of Nuclear Plant Technology
SUP	Safety Upgrade Program
PSE	Plant Support Engineering
PWR	Pressurized Water Reactor
PWROG	Pressurized Water Reactor Owners Group
RO	Reactor Operator
RS	Republic of Slovenia
SA	Auxiliary Steam System
SAM	Severe Accident Management
SFDS	Spent Fuel Dry Storage
SFP	Spent Fuel Pool
SOER	Significant Operating Experience Report
SRO	Senior Reactor Operator
SRS	Slovenian Accounting Standards
TDAF	Turbine-Driven Auxiliary Feedwater
TED	Tenders Electronic Daily
URSJV	Slovenian Nuclear Safety Administration
WANO	World Association of Nuclear Operators
WEC	World Energy Council
ZGD	Companies Act