



2014

ANNUAL REPORT

Krško  
Nuclear  
Power Plant



## Krško Nuclear Power Plant

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## ADDRESS BY THE MANAGEMENT BOARD

### DEAR READER,

In the history of Krško NPP, 2014 will be remembered as a year of several overachievements. In addition to reaching over 6 billion kilowatt hours of electric power during one year for the first time during the operational life of the plant while maintaining extraordinarily good operational stability, we also mark a historical decision taken by the owners on the power plant operational life extension till the end of 2043. The key decisions related to our energy future coincided with our jubilee: 40 years has passed since the symbolic foundation stone for the nuclear power plant was laid. The long past period was marked by a significant technological breakthrough, while in the business year of 2014 plentiful evidence bore witness to this effect, proving again that Krško NPP meets all the attributes of contemporary national energy strategy - reliability in power provision, competitiveness and environmental suitability.



Our operation was successful and efficient within the planned business framework. The cost price was maintained on the basis of a turnover achieved from electric power and quantities supplied below the planned values and at the level of the most competitive prices of supply sources to power consumers. The decision on the power plant life extension was based on the economic efficiency which was verified in 2014 by an international study of economic viability of the long-term plant operation. The study, together with the owners' consideration that the nuclear energy source would remain a competitive source with other energy sources in the next decades, was crucial for the final decision. In addition, the plant life extension until 2043 provides for a planned safety upgrading. The green light for it was lit by the long-term investment plan approved in December for the next five-year period, which included significant safety upgrading projects which will bring our technological solutions close to the new generation plants.

Through the year project documentation was being prepared and preparatory activities took place for more than 50 projects in the last operational cycle and the 2015 outage. Priority was given to those projects which refer to safety upgrading, radioactive waste storage and operational availability. To a significant extent, the high level of operational availability was due to the highly professionally performed outage of 2013, which, on the basis of technological equipment preventive maintenance and the integrity of all equipment, ensured operational reliability and stability of the 27<sup>th</sup> fuel cycle.

One of the major achievements of 2014 was a new definition of our vision based on our goal of becoming a model facility for its nuclear safety and excellence at the global level. Since the accomplishment of such a vision necessitates excellent individuals and harmonised work, on the occasion of our jubilee and in view of the new generation of experts who are slowly taking over the responsibility for running the plant, our Safety and Business Ethics Code was modernized. Its fundamental values embedded include safety culture, integrity of staff development, excellence in relationships and open communication. In addition, a new five-year plan was adopted reinforcing the existing developmental promotion policy.



In support of all safety, operational and economic goals we also implemented the so called integral management system. All documents support the perception of excellence to ensure that it becomes an integral part of every approach to work in which an employee might be engaged.

The fact that we have followed the best practices was confirmed by an extensive expert review carried out in the autumn by the World Association of Nuclear Operators (WANO). After the completion of the review, the plant received the highest rating, which is a remarkable accomplishment and reaffirmation that Krško NPP ranks among the world leaders in assuring nuclear safety.

We are entering the second life span of the facility well prepared, with a strategy of development and growth, encouraged by the over-achievements reached in 2014.

We would like to take this opportunity to express thanks for the professional and dedicated work of our employees, our business partners for their cooperation, and to the owners for taking such a crucial decision on the plant life extension, thus reaffirming that we succeeded in bringing to a fruitful realisation our day-to-day efforts to maintain a high level of safety, stability and reliability coupled with an attempt to achieve the added value on which many energy investments and the development of business environment of the two countries are rooted.

We look forward to another 29 similarly successful years and good working relationship with all and everyone who happens to be engaged in creating permanent energy value.

Stane Rožman  
President of the  
Management Board

Hrvoje Perharić  
Member of the  
Management Board



## IMPORTANT ACHIEVEMENTS IN 2014, CHALLENGES FOR 2015

Just over a year has passed now since the NPP's employees, with our focus on the future, bravely redefined our vision to become a model of nuclear safety and excellence at the global level, we can look back with satisfaction when assessing our achievements. We accomplished our vision and responsibility in all four basic areas: safe and stable operations of the plant, competitive production, acceptance by the public on the basis of transparent and honest operation, and critical self-assessment of the achievements with permanent improvements.

NPP's operations were safe and stable and the output above the planned figure - for the first time in the operational period the facility's output was over 6 billion kilowatt hours. During the past year, there was not a single deviation event which should have been reported, in accordance with legal regulations, to the Slovenian Nuclear Safety Administration. The goals set out in the business plan were achieved and over-achieved including the financial goals resulting in the provision of competitive production. The European electricity market remains under the influence of general economic stagnation and renewable sources resulting in a low electricity price. Careful planning of production costs remains a constant and a challenge to maintain business success while providing a high level of nuclear safety.





Improving our business practices and the vision defined were proven by the results of an extensive expert review conducted by the World Association of Nuclear Operators (WANO) which took place in October and November. NPP received the highest total rating for nuclear safety and operational readiness. By presenting the review results, the mission members pointed out the above-average high implementation of recommendations of international operational experiences and safety achievements. The safety culture represents universal principles which direct the nuclear facilities and are the basis of safe and stable operations. Among good practices depicted by the mission to be followed as a model by other nuclear facilities were the capacity and the quality of the full-scope simulator for operations staff training. The highest rating of the nuclear safety and operational efficiency assessment is another commitment achieved by equal excellence in the field of management, communication of internal guidance, work expectations and cooperation in improvement endeavour.

There were two more significant events which marked year 2014 and represent a special accomplishment dictating responsible work to maintain long-term plant operations. In mid year the second regular periodic safety review was conducted; this has to be carried out every ten years. The Slovenian Nuclear Safety Administration confirmed the proposed plan of improvements which will result in rectification of discrepancies with regard to the newest standards and good global practices. The second major event in the past year happened in November when the owners, based on the results of the economic study prepared by an international consulting organisation, took the decision to extend the plant operations until 2043. The study assessed various aspects of two scenarios. The first scenario analysed the effects if electric power was to be replaced by alternative sources (solar, wind, gas power plants, etc.) with Krško NPP closing down in 2023, or by import, and the second one the effects if NPP stayed in operation until 2043. The analysis results clearly showed that the plant life extension is the most economical solution. The Supervisory Board approved the execution of the second phase of the Safety Upgrade Program, which is an achievement and at the same time a professional challenge for future years.



The decision on the plant operational life extension also reflects decades-long successful operations of NPP. Professionalism, enthusiasm and loyalty have been only some of the virtues of all generations of employees, performing their tasks impeccably, making such a decision possible. The long-term operation now depends on responsible and strict response by the present and future generations. Everybody, including representatives of the younger generation, has been included in the preparation of our strategic documents. The Safety and Business Ethics Code, the Five Year Developmental Plan and the Management System represent a contemporary and integrated business framework harmonised with contemporary standards of efficient management of businesses, nuclear industry standards and administrative requirements. At the same time it reflects our high ambitions. Company bonds and affiliation coupled with enthusiasm of all employees sustain internal support of long-term operations.

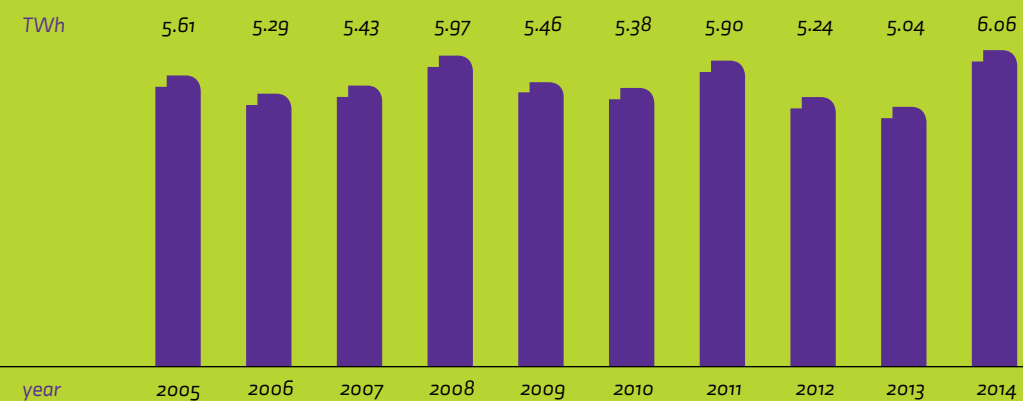
Year 2014 was also our jubilee year; in 1974 the symbolic foundation stone was laid for the nuclear power plant. Years of construction and decades of its operation made the vision of the creators of the use of nuclear energy in our environment come true. The validity of the decision to build a nuclear power facility was confirmed by the plant's latest achievements. However, while enjoying the goals achieved, it must not be forgotten that permanent development is paramount. Therefore, we must keep in mind that the excellence is the road and each achievement a challenge for the next step.

## SUMMARY REPORT

In 2014 the plant's operation was safe and stable. The year was marked by exceptionally stable operations and record output of electric power in the history of NPP's operations. The plant's output was 6.06 terawatt hours of electricity. There were no unplanned shutdowns or events necessitating unplanned shutdowns. The rectification of the fuel core damage after the 2013 outage proved to be effective proving the suitability of planned and implemented measures following damage to the nuclear fuel elements.

The plant continued carrying out the Safety Upgrade Program (PNV) required by the Slovenian Nuclear Safety Administration (URSJV) by their ruling and is one of the conditions for NPP's operational life extension. The economic viability study of the plant's life extension showed that Krško NPP is the best and cheapest electric power generating facility in comparison with other energy sources. After the completion of the first phase of the PNV together with system modification for pressure relief and reactor building passive filtration and passive autocatalytic recombiners, the PNV's second phase scope was resumed; this is to be finished by the end of 2018. It includes the construction of a subsidiary control room and additional flood barriers, installation of additional pressurizer relief valves, modernisation of the operational support centre, additional heat-exchangers for spent fuel pool cooling, and outlet of residual heat from the fuel core in the event of beyond-design-basis accidents. The URSJV approved the action plan of the second periodic safety review to be completed in NPP by 30 May 2019.



ANNUAL  
PRODUCTION

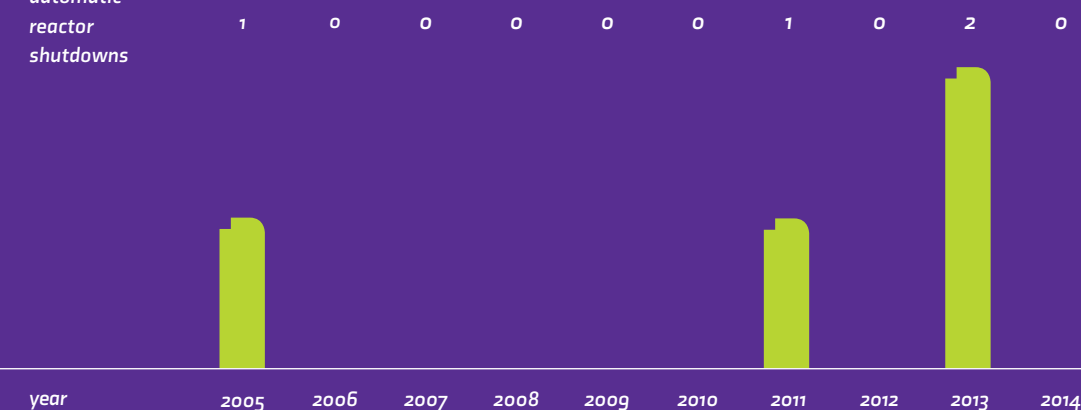
NEK TARGET  
FOR 2014: 5,90 TWh

TOTAL: 152,79 TWh  
(production from the start  
of commercial operation)

There was no outage in 2014. There were a few minor technological modernisations carried out during plant operation; however, major activities were directed to preparatory work concerning major technological modernisations during the 2015 outage.

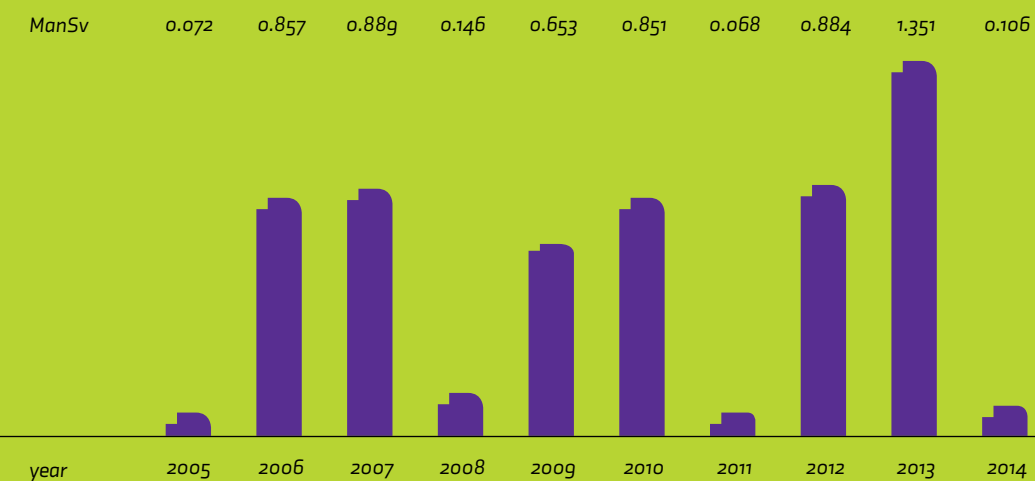
OUTAGE  
DURATIONUNPLANNED  
AUTOMATIC  
REACTOR TRIPS

Number of  
automatic  
reactor  
shutdowns



NEK TARGET  
FOR 2014: ≤ 1

NPP's operation was safe and in accordance with the requirements set by the Slovenian legislation and international regulations and standards. The collective dose was low due to the fact that there was no outage in 2014.

COLLECTIVE  
DOSE

NEK TARGET  
FOR 2014: ≤ 0,15 ManSv

# 1.0

## ENVIRONMENTAL IMPACT

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

The objective of the radiation monitoring is to monitor the plant operations and assess the impact on the surroundings and the local population. This is also the basis for verifying compliance with legal limits.



The effects on the population are so low that they are practically immeasurable. However, they can be calculated by models for the most exposed groups of the population and the annual dose can be compared with the dose received due to natural and other radiation sources. The assessment of an individual dose received by a critical reference group (an adult receiving the highest doses and whose food originates exclusively from locally grown food and fish) shows that the annual dose of such an individual has been approximately 1 microsievert or less than 0.04 percent of the dose on average received by a person due to natural sources of radiation (approximately 2,500 microsieverts). The annual dose for NPP is limited to 50 microsieverts per person (at a distance of 500 m from the reactor or more) from air and water media. The results of measurements taken are dealt with in detail in a special report for 2013, prepared for NPP by the *Jožef Stefan* Institute together with the Institute for Occupational Safety, and the *Ruđer Bošković* Institute.

#### DATA ON LIQUID RADIOACTIVE DISCHARGES IN 2014

RADIOACTIVE SUBSTANCES	ANNUAL LIMIT	PERCENTAGE OF THE LIMIT
FISSION AND ACTIVATION PRODUCTS	100 GBq	0.048%
TRITIUM (H-3)	45 TBq	3.5%

#### 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 0.048 percent of the additional annual limit of activity for liquid discharges. The activity of discharged tritium was approximately 3.85 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 low radiotoxicity.

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

#### RADIOACTIVE RELEASES INTO THE ATMOSPHERE

The annual dose limit of 50 microsievert is checked monthly for discharges into the air and water, for air in a 500-metre distance from the reactor by calculating a dose that could have been received by a person at such distance in one year due to external and internal radiation. The least favourable monthly average air rarefaction values and releases near the ground are presumed in the calculation of individual wind directions. The result for 2014 was 0.51 microsieverts (1 percent of the annual limit). More detailed data is given in the table below.



#### DATA ON RADIOACTIVE RELEASES INTO THE ATMOSPHERE IN 2014

RADIOACTIVE SUBSTANCES	TOTAL ANNUAL LIMIT	DOSE	PERCENTAGE OF LIMIT
FISSION AND ACTIVATION GASES (TOTAL)		0.058 µSv	
IODINE (I-131 AND OTHERS)		3.94E-04 µSv	
DUST PARTICLES (COBALT, CAESIUM, ETC.)	50 µSv	1.27E-05 µSv	1.01%
TRITIUM (H-3)		0.427 µSv	
CARBON (C-14)		0.021 µSv	

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

#### MEASUREMENTS OF THE SAVA RIVER AND GROUNDWATER PARAMETERS

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



Due to favourable weather conditions during the year, the Sava river did not increase in temperature over the permitted level of 3 °C.

Groundwater is regularly inspected by the power plant which constantly measures the ground water level and temperature in three boreholes and two locations on the Sava river and, on a weekly basis, in ten boreholes in the Krško-Brežice fields. The groundwater level was slightly higher in comparison with previous years due to heavier precipitations.



### DATA ON RADIOACTIVE WASTE AND SPENT NUCLEAR FUEL

In 2014, 124 packages of radioactive waste were stored, with a volume of 34.4 cubic meters. In accordance with accepted practice all compressible waste material is compressed in the super compactor on a regular basis as it is generated, while combustible waste is prepared for shipment to the external contractor for incineration. There were 350 standard drums of combustible material sent out for incineration. The total volume of radioactive waste in the interim storage on 31 December 2014 was 2258.4 m<sup>3</sup>, while the total activity was 18.5 TBq.

The spent fuel storage pool contains 1096 spent fuel elements from the previous 26 fuel cycles. The overall mass of spent fuel material is 448 tonnes.



### ENVIRONMENTAL MANAGEMENT AND COMMUNAL WASTE

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

A special waste water treatment plant is used for communal waste water. Measurements of pH, temperature, non-soluble substances, chemical and biological use of oxygen at the outlet are taken by an external organisation, which is in line with the OVD requirements.



### MEASUREMENTS OF RADIOACTIVE RELEASE AND ENVIRONMENTAL SAMPLES

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

### MEASUREMENT OF RADIATION EXPOSURE

Two accredited methods are used by the laboratory for dosimetry for personal dosage measurement - passive and electronic alarm dosimeters. In 2014, after having been reviewed by a special technical commission, the laboratory received an authorisation by the relevant administrative authority to conduct neutral dosage measurements by passive dosimeters.



# 2.0

## MAINTAINING AND IMPROVING HIGH LEVELS OF NUCLEAR SAFETY

NPP pays special attention to ensuring and checking the execution of regulations and standards for nuclear technology, as well as other modern technologies in project solutions (equipment upgrading), operation and maintenance activities, the purchasing process and other activities which contribute to safe plant operation and the safety of the population. We are committed to on-going improvement, professional work and personal growth. Our mission is performed through independent review, on-going improvement of human performance and the safety culture, critical self-assessment of results achieved, constant comparison with the best comparable facilities in the world, by learning from both in-house and foreign operating experience, and on-going plant assessment in terms of plant operation safety and stability.

Due to its specific nature, NPP took an especially cautious stand towards the environment at an early stage of the project (extensive research concerning its location prior to a final decision, strict respect of standards during construction). During the plant start-up and its operation, independent monitoring of the effects on the environment was put into action (radioactive releases into water and emissions into the air, and nuclear fuel and hazardous waste management). A Protection and Rescue Plan (NZIR) for emergency events was prepared, detailing the organisation, measures and means of emergency management if there is a potential danger of radioactive effects on the environment. Care for the environment has always been a special concern of the plant's business policy. The practices of NPP concerning the environment are in accordance with the ISO 14001 standard, internationally the most widely recognised environmental management system.





One of the vital aspects of maintaining and improving safety in the nuclear industry is respecting operating experience. The nuclear accident at Fukushima Daiichi nuclear plant in Japan which happened in 2011 as a result of a powerful earthquake and tsunami had a great impact on the entire nuclear industry. As a response to the events in Japan, NPP prepared and implemented, during that year, certain short term action plans, and prepared long term action plans on the basis of experience in the industry and management requirements. In January 2012, an integrated program on upgrading safety was approved. The program defines projects for upgrading certain safety systems, the electrical safety power supply, supervision of radioactive discharges, flood safety and storage of spent nuclear fuel. Certain projects have been completed, some are in progress; however, the overall program is anticipated to be completed by 2018.

In November, a national theoretical-practical exercise in the event of an emergency was carried out in which some of NPP's supporting organisations took part. The purpose of the drill was comprehensive verification of NPP readiness in the event of an emergency in NPP and harmonisation with the NPP's Protection and Rescue Plan (NZIR) at a local and national levels. The following aspects were verified: procedures in the event of emergency by NPP's support institutions, organisation, equipment and readiness of NPP's intervention facilities and NPP's support facilities, suitability of the operational plan of procedures in the event of emergency, operations of management centres, and the functional ability of equipment and connections to manage an emergency event. The aim of the exercise was, on the basis of a prepared scenario of an emergency event which necessitates the declaration of general public emergency circumstances, to test the elements of emergency event management. In addition to the exercise, training on the subject of first aid and medical treatment of contaminated injured individuals was conducted, as well as evacuation of a limited scope, fire extinguishing and engaging exceptional event management organisations. At the NPP level, the purpose and goal of the exercise were achieved. The exercise proved suitable readiness of the plant in terms of emergency event management aspects which were tested, and pointed out areas where improvements could be made.

The legislation and international standards require that, from time to time (every ten years), the plants carry out a safety review and prepare a report which is to be submitted to a competent administrative body. The legal basis for it is stipulated in the Ionising Radiation Protection and Nuclear Safety Act and the Rules on operational safety of radiation and nuclear facilities. In 2011 the second periodic safety review of NPP started. The main objectives of such a review are to prove that the plant meets the requirements stipulated in the administrative permits and international safety standards, to demonstrate the suitability of the measures until the following such periodic review, and to compare the safety results with those of the previous safety review. Planned review activities were carried out throughout 2012. The final report of the second periodic review was submitted to the competent administrative authority by the end of 2013. In June 2014 URSJV issued a Decision confirming that NPP had fulfilled all conditions arising out of its operating license related to nuclear safety and that it can continue operations for the following 10 years. The report of the second periodic review contains actions for plant improvements. Their implementation is split into three time-groups: however, according to legal requirements, all changes and improvements as defined in the accepted report have to be completed within five years from the date of acceptance.



From 20 October to 7 November 2014, WANO carried out an extensive review of the plant performance. This was the fourth such verification in NPP (1995, 1999, and 2007). The review included verification of processes and samples of employee behaviour, as well as managerial approaches in relation to the highest standards and practices in the nuclear industry, implementation of important WANO recommendations, a review of fundamental safety functions of the plant and managerial processes. The review was carried out by a team of 42 members, comprising experts in relevant fields of WANO organisation and representatives of nuclear power plants from 13 countries.

WANO made some improvement recommendations to NPP. It also pointed out good practices which will serve as a model to other operating facilities in the world. The overall assessment of operational activities and nuclear safety of Krško power plant was excellent, which is an outstanding achievement and yet another affirmation that we are among the leading facilities in the world in the area of nuclear safety.



In addition to the Environment Management System audit, the facility had the first re-certification audit of the Occupational Health and Safety Management System in accordance with BS OHSAS 18001.

### PROCESS AUDITING

A document "MD-2 Management System - process organisation" was implemented. It represents a new developmental step in the field of management, as it includes essential elements of contemporary management of a nuclear facility contributing to permanent improvements of the radiation and nuclear safety. MD-2 gives a description of processes, defines their purpose and guidance to management to facilitate the understanding of individual processes and their complementary effects, their interdependence and support of the overall plant operations. This defines the integral management system and is in line with the standard of nuclear industry and legal requirements.

Maintaining nuclear safety has been one of the priorities in every field of work in NPP. By maintaining high levels of quality, the plant's systems and equipment are kept in operation in compliance with the design basis; in this manner, different processes of the plant can be under independent surveillance, such as design changes, plant procedure revisions, spare parts and services purchasing and other processes. In addition, independent audits are carried out - plant processes auditing and auditing of external companies, contractors and equipment suppliers. The purpose of such audits is to ensure independent assessments of processes and thus to maintain criteria defined in international standards concerning nuclear technology vital for quality, including:

- Organisation;
- Quality program;
- Internal processes (design, production, special processes etc.);
- Documents and records control;
- Non-compliance control;
- Corrective Action Program;
- Training, etc.



There were eight audits concerning NPP's internal processes related to environmental management, occupational health and safety, radiation safety, chemical processes, training, readiness in the event of emergency, purchases and fire safety.

Suppliers are audited by NPP's own staff or together with NUPIC, an international organization who organises and carries out regular team audits at suppliers' premises. There were 26 independent audits of external suppliers from Slovenia, Croatia, Spain, Germany, USA, and the Czech Republic. With the NUPIC organisation we took part in eight audits in the USA and Europe. The entire annual audit plan, slightly larger in comparison with previous years, was completed.

A team self-assessment of the 2013 outage and decision making processes in NPP was carried out. Assessments and key recommendations as well as action plan with responsible units and deadlines were prepared for individual areas and outage processes. A general view following the self-assessment of decision making processes was that NPP's scheme of decision making processes was well outlined. Improvements could be made by involving NPP's management in corrective measures and modification program.

### OBSERVATION

Observations and analysis of work processes on the technological unit are conducted by the management and other staff in order to identify deviations and take relevant corrective measures. The fundamental objective of observations is not to criticize an individual, but rather to detect deviations in the work processes and their rectification, finding methods for their improvements and to underline the desired standards and good working practices. Instructions for the preparation, execution and observation results analysis are defined in a special administrative procedure.

In 2014, more than 200 observations were carried out in NPP during its operation. All disciplines and work groups underwent the observation procedure in different organisational units. The results analyses of these observations showed that some work processes could be improved, in particular in the sphere of work preparation and documentation.

# 3.0

## MAJOR TECHNOLOGICAL MODERNISATION

### INVESTMENTS

The Treaty between the Republic of Slovenia and the Republic of Croatia on the regulation of the status and other legal relations regarding investment, exploitation and decommissioning of the Krško Nuclear Power Plant enables the plant to make provisions for long-term investments in reconstruction and technical upgrading which affect the safety and economical effectiveness of the power plant. The provisions of the Treaty, requirements set by the Slovenian Nuclear Safety Administration (URSJV), recommendations by the suppliers of the essential technological systems, operating experience at home and abroad, as well as international professional organisations are the basis for a 5-year plan of technological upgrading. Therefore, there have been over 800 modifications and/or technological changes carried out in the plant which had a direct impact on better nuclear safety and/or reliability of the operations, a fact supported by WANO (World Association of Nuclear Operators) performance indicators.





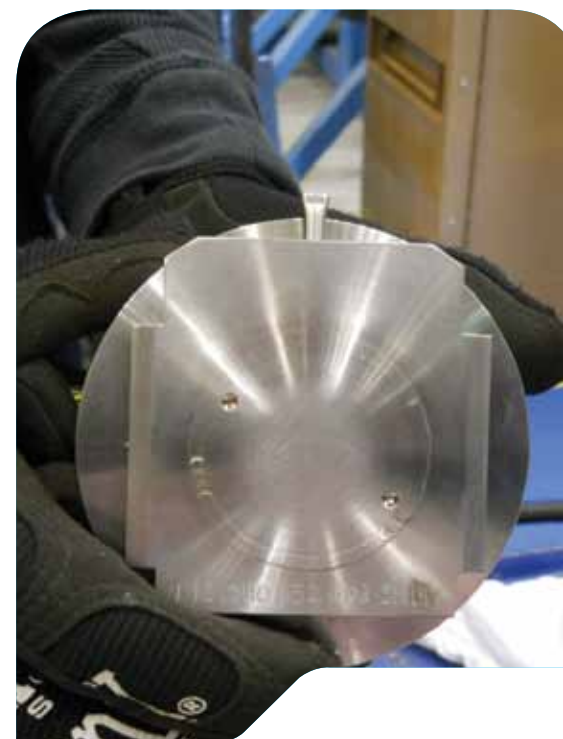
Following a systematic analysis of technological equipment and process more than 100 additional technological upgradings are planned in the next 5-year period, including upgrading incorporated in the Safety Upgrade Program which has to be finished by the end of 2018 to meet the requirement set in the Ruling passed by the Slovenian Nuclear Safety Administration (URSJV).

The 2014 investment in technological upgrading included 17 minor technological upgradings carried out during the plant operation. These investments were essentially lower than planned due to the majority of the investment being linked to the outage and the plant's Supervisory Board's decision that the safety upgrading be continued after the completion of the study which will substantiate grounds for the plant's operational life extension; this resulted in a substantial prolongation of all projects of the second safety upgrading phase. Therefore, the company was engaged in preparing projects and international tenders for

safety upgrading projects and major technological modernisation planned for the 2015 outage or later. Some major complex projects included:

#### **REPLACEMENT OF IN-CORE INSTRUMENTATION - REPLACEMENT OF THE SYSTEM TO PROVIDE INFORMATION ON NEUTRON FLUX DISTRIBUTION IN THE CORE**

The modification includes the replacement of the complete system used to provide data on neutron flux distribution in the core (Flux Mapping System) including the range of components from flexible neutron flux detectors to the control panel in the main control room. The new system has functionally equal main components as the existing one; the difference is in its technology. The new technological solution will necessitate less operational and maintenance interventions, which were frequent in the past few years due to various system malfunctions or failures.



#### **REACTOR VESSEL UPFLOW CONVERSION**

In order to achieve efficient long-term rectification of fuel assembly damage due to vibrations caused by cross flows of the cooling media through reactor baffle plate gaps, a project to change the direction of the bypass cooling media flow between the reactor core baffle plates and lower internals barrel was prepared to alter the flow from a down-flow to an up-flow direction. This will effectively reduce the hydraulic pressure difference through the core baffle plates, thus eliminating vibrations which cause damage to the nuclear fuel.



#### **AUXILIARY FEEDWATER TURBINE-DRIVEN PUMP REPLACEMENT**

In 2014, the auxiliary feedwater turbine-driven (AF TD) pump replacement project was started. The project included the removal of the turbine feedwater pump and its steam-powered turbine. A new robust pump of a different design will be installed in its place. This will need no external support systems for its operation. It will meet the same design requirements and ensure the water supply into the steam generators under all design conditions, and a higher level of reliability of the auxiliary feedwater system. This in turn will result in a decrease in core damage prospect.

### RECONSTRUCTION OF THE SWITCHYARD LOAD POWER SUPPLY SYSTEM AND THE RECONSTRUCTION OF THE SWITCHYARD LIGHTING

In accordance with the Agreement on the technical aspects of investments, a complete reconstruction of the switchyard was undertaken by the plant and system operator (ELES). The reconstruction was started during the 2010 outage, and was continued during the 2012 and 2013 outages; it included the replacement of the entire primary equipment such as circuit breakers, disconnectors and buses, and the replacement of measuring and control systems. We installed modern computerised control of primary equipment. The investment is to end during the 2015 outage, when the switchyard load power supply system will be replaced and the switchyard lighting system reconstructed. The switchyard reconstruction is very important for reliable operation of the electricity system in this part of Europe and for ensuring reliable electricity supply to people.

### FLOOD SAFETY OF NPP FACILITIES

Following the accident in the Japanese Fukushima Daiichi nuclear power plant in 2011, the Krško power plant started implementing measures for prevention and lessening of serious accident effects as set out in the URSJV's Decision. The long-term measures are included in the Safety Upgrade Program and are reasonable in view of the plant operating life extension. One of the areas included in the program is also ensuring that all plant's facilities are flood safe.



In 2014, project solutions were prepared concerning the flood safety of NPP up to the 157.530 m A.S.L. including the event of a collapse of the downstream and upstream flood barriers on the Sava river. The project consists of passive and active elements of protection. The passive elements include water-tight building walls, the replacement of outside doors with water-tight doors and the replacement of seals in the external wall penetrations with water-tight ones. The active flood protection will be performed by installing water barriers and the installation of flood-safe valves

in drain systems. The proposed system of passive and active anti-flood protection of the facilities represents an efficient and simple technical solution for the prevention of beyond-design-basis accident effects. The new anti-flood protection of NPP will be designed and will have dimensions as to ensure a functional protection also in the event of an earthquake ground acceleration of 0.6 g.



# 4.0

## 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, related primarily to equipment not crucial to the availability and safety of the power plant.

There are also other activities carried out in accordance with programs related to the management of ageing equipment, components and structures.

During corrective measures on important equipment, which is included in the preventive maintenance program, a detailed root cause analysis is carried out and if necessary the preventive maintenance program is revised accordingly.



Major maintenance activities were carried out on the equipment suitable for on-line maintenance – most of them in accordance with the preventive maintenance plan and management of ageing equipment and components.

The mechanical maintenance was conducted in accordance with the preventive measure program. Major work included the overhaul of various pumps, compressors, valves and other components. There were no significant corrective actions.

The maintenance of the electrical equipment was also performed in accordance with the preventive measures programs and plans. Standard preventive work included electric equipment inspection and inspection tests of various batteries and relay protection. In addition, overhauls and revisions of various high-voltage and low-voltage motors, circuit breakers and transformers were carried out.

The instrumentation maintenance staff conducted regular surveillance tests of reactor automatic protection instrumentation and radiological inspection. As there was no outage in 2014, measuring instrumentation gauging and preventive maintenance were carried out on-line.



Predictive maintenance included establishing equipment status on the basis of various techniques not part of the primary maintenance – thermographic inspection, vibration inspection of major rotating components, lubricant quality inspection, and the inspection of rotors during the operation of high-power electric motors.

As there was no outage in 2014, the scope of work under the component integrity inspection program – representing the primary system boundary – by means of non-destructive testing methods, was very limited. There were no deviations detected. The secondary system component inspection for erosion and corrosion effects showed no situations necessitating major corrective measures.

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

# 5.0

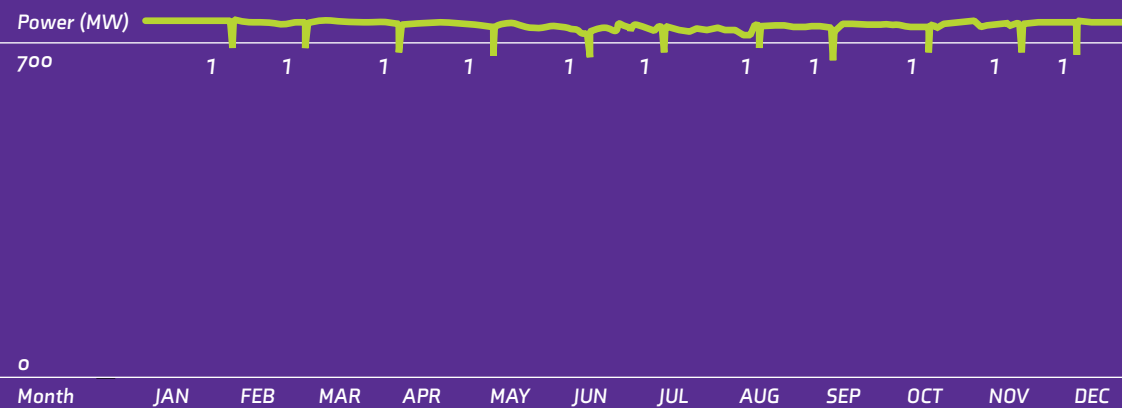
## PERFORMANCE

NPP's 2014 total output at the generator outlet was 6 369 631.80 MWh of gross electricity or 6 060 821.80 MWh of net electricity. This annual output figure was the highest ever in the history of the plant's operation. Due to the uninterrupted operation at 100 percent power and with no significant reductions, the availability and capacity factors were 100 percent.

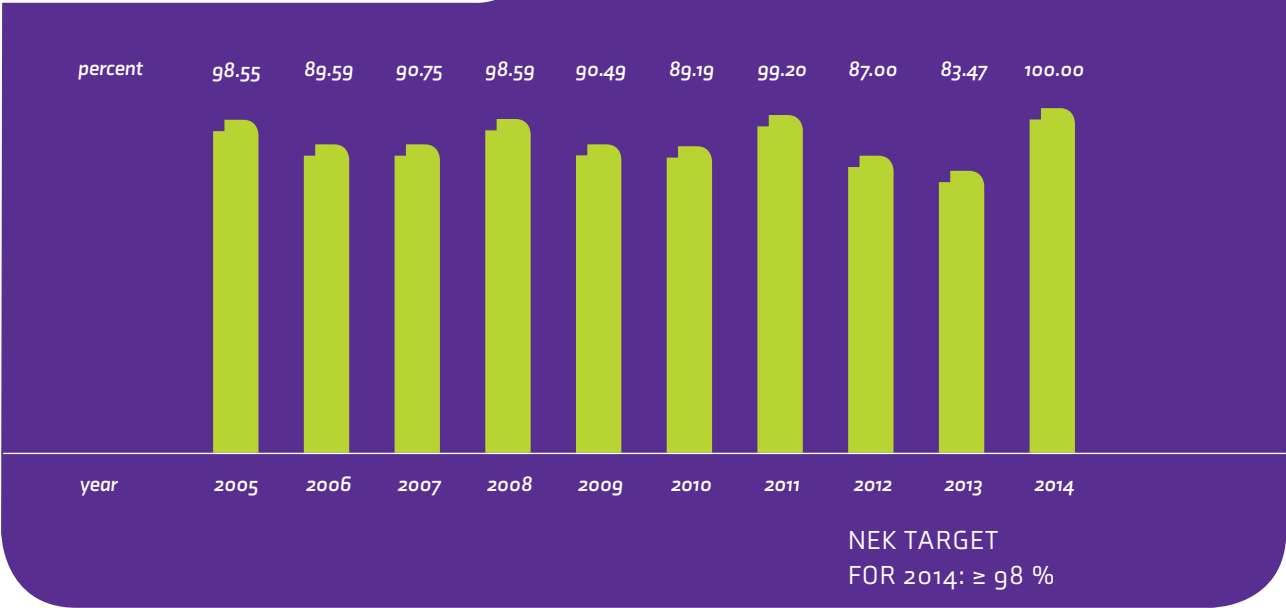
### OUTPUT IN 2014

Gross energy produced: 6 369 631.8 MWh  
Net energy produced: 6 060 821.8 MWh  
Availability factor: 100.00%  
Capacity factor: 100.00%

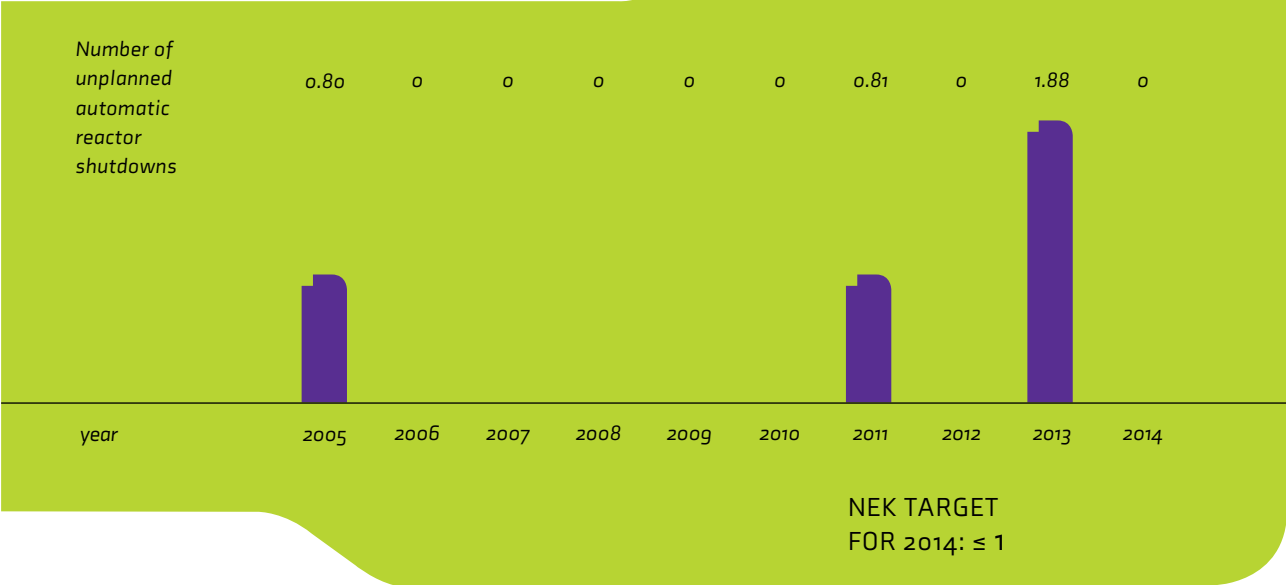
1 Turbine valves test.



### PLANT CAPACITY FACTOR



### UNPLANNED AUTOMATIC REACTOR SHUTDOWNS AT 7000 HOURS CRITICALITY

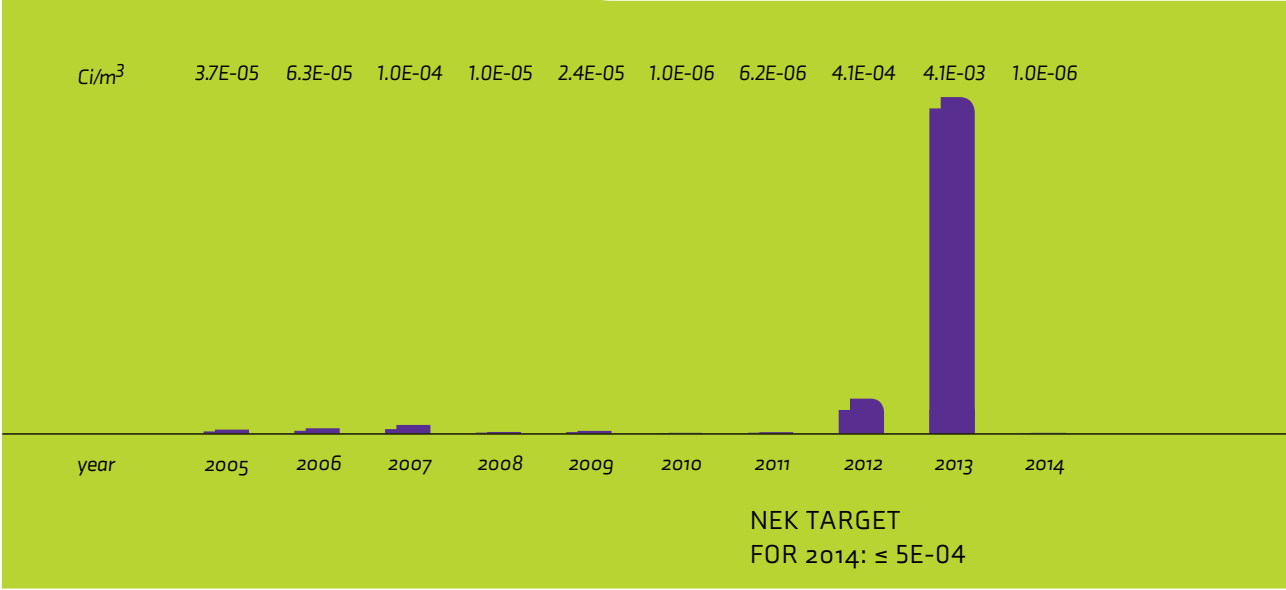


### NUCLEAR FUEL AND SECONDARY CHEMISTRY SYSTEM

The specific activity of the primary coolant and its contamination were essentially lower than the figures defined as still acceptable by our

strategic targets. The fuel reliability indicator for 2014 met the target figures set by Krško NPP and INPO; this is due to reliable operations without fuel leakage.

### FUEL RELIABILITY INDICATOR



Ingress of aggressive electrolytes into the secondary system was low; therefore, corrective measures were not needed. Monitoring of key

parameters was effective, as well as the cleaning systems which contributed to the effective chemistry program. In 2014, for the first time in the history of the plant's operation, the optimum value of this indicator was achieved; it was 1.00.

### SECONDARY CHEMISTRY PERFORMANCE INDICATOR



### SERVICE AND EQUIPMENT PURCHASING

The purchasing procedures have changed due to the Public Procurement in the Water, Energy, Transport and Postal Services Act (ZJNVET-PS). Due to the law's complexity and additional

requirements, the new legislation resulted in an increase in administration, affecting the realisation of outlined plans and obligations and extending purchasing procedures, which may affect nuclear safety and plant availability.

# 6.0

## INTERNATIONAL COOPERATION

### EXPERIENCE OF OTHERS – GUIDANCE FOR OUR WORK

At NPP we are aware of the importance of joining international organisations and the international control of our operations. It is the only way to achieve internationally comparable operating and safety results.

### WANO

All nuclear facilities in the world are members of the World Association of Nuclear Operators (WANO). NPP has been a member of this organisation since its establishment in 1989. Its aim is to promote the highest standards of operational safety, availability and excellence of nuclear power plants. WANO implements a program for sharing operating information, promoting communication, mutual comparison and copying best practices.



## INPO

From as early as 1988 NPP has been a member of the Institute of Nuclear Power Operations (INPO) in the USA. Its primary objective is to increase the level of nuclear power plant safety and reliability. All American nuclear plants and/or their operators are INPO members. Its membership extends both to nuclear operating organizations in other countries, as well as to the manufacturers and designers of nuclear facilities.

## IAEA

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

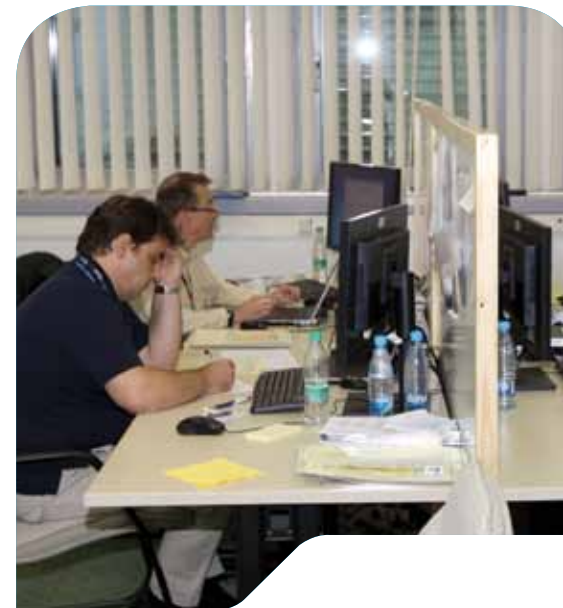
Together with IAEA, we organised three OSART missions and some other missions. Our experts took part in 16 such missions worldwide. IAEA inspectors, who monitor the nuclear fuel, carry out declared and undeclared inspection visits.

## NUMEX

For over ten years, NPP has been a member of the NUMEX organisation (Nuclear Maintenance Experience Exchange) engaged in the exchange of experience in the sphere of nuclear power plant maintenance.

## 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.



NPP has had an active role in several significant fields of the Institute's activities, including:

- nuclear power plant equipment maintenance (NMAC - Nuclear Maintenance Applications Centre);
- improvements and development of engineering processes to ensure safe and reliable operations of the plant, systems and equipment (PE - Plant Engineering Program);
- non-destructive testing and research (NDE - Non Destructive Examination);
- exchange of experience in applying accident analysis programs (MAAP - Modular Accident Analyses Program User Group);
- exchange of experience concerning erosion/corrosion issues - CHUG (Checworks Users Group).

## NRC

The NRC (Nuclear Regulatory Commission) is an independent agency in the USA in charge of safety and protection of the population against the effects of radiation from nuclear material, reactors and facilities for processing nuclear material. NPP studies and, when appropriate, uses their documents and publications.





### PWROG

PWROG (Pressurized Water Reactor Owners Group) is the association of all the pressurized water reactor (PWR) operators. It carries out 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 ENIS group (European Nuclear Industry Safety Standards), Krško NPP took part in the preparation of the EU nuclear industry position in drafting amendments to legislation in this industry. The work group acts within FORATOM, an EU nuclear industry organisation.

### NPP ACTIVITIES

The fourth specialist WANO Peer Review of work processes and the first WANO Corporate Peer Review of the NPP facility were carried out. The reviews were based on interviews as well as observations and assessments of actual work in progress. A report was prepared by the team consisting of 42 specialists in different fields of the WANO organisation and representatives of nuclear power plants from 13 countries; the report included recommendations for improvements, pointing out good practices. The Plant's operations and nuclear safety of the facility were assessed with the highest grade, which is an additional encouragement for excellence.

Our specialists have taken part in 42 such missions worldwide. Three of our representatives took an active part in international specialist reviews (WANO Peer Review mission) at Sizewell B power plant in Great Britain, Chooz B in France, and Almaraz in Spain.

Within the framework of Technical Assistance Missions, NPP has so far received 32 such missions covering all activities of the plant. Our representative participated in the mission to Bohunice power plant in Slovakia in a technological systems review.

Our representatives regularly take part in specialist training programs organised by various organisations. Due to good results, our plant has become a model plant for other operators of nuclear plants and a source of good experience in various fields of work. So far, representatives of ten countries for 24 different areas have visited us through WANO. We have visits by experts in chemical processes and the environment, nuclear fuel, long-term investments, nuclear safety assessment and fire protection procedures, while our representative has become familiarised with good practice in the field of safety culture and human elements while visiting North Anna nuclear power plant in the USA and the Dungeness plant in Great Britain.

Together with WANO we organised an international workshop on the subject of nuclear plants equipment ageing. It had 40 representatives of different plants from 11 countries participating.

The President of the Krško NPP Management Board is a Supervisory Board member of the WANO Paris Centre, made up of representatives of all member countries of the Centre. One NPP employee is temporarily employed in the WANO Paris Centre and is a member of the group conducting peer reviews.

EPRI and our plant organised a workshop on the subject of programs improvement to prevent ingress of foreign objects inside the plant's systems.

We take regular participations at PWROG annual conferences, specially organised for nuclear power plants in European countries.

In addition, our plant, being a member of NUKEMEX, takes an active part in the exchange of experience in maintenance.



# 7.0

## TRAINING

Professional training was carried out to ensure that training programs were well prepared and executed, thus contributing to a high degree of personnel expertise, subsequently resulting in a high level of staff qualifications and ensuring safe and reliable plant operations in line with the company's goals and policies.

These programs were largely prepared and executed in-house and partly in collaboration with external institutions, both national and foreign.

Annual plan and training needs as established and prepared together with heads of individual organisational units of the power plant, were the basis for preparation and execution of individual courses.

### OPERATIONAL STAFF TRAINING

Professional training courses for operational staff were prepared and carried out taking into account relevant legal regulations, internal procedures and the two-year plan.

We continued training according to the Initial Operating Personnel program for a licence and completed internal training of eight new reactor operators with exams. All were successful at the exams and obtained the first reactor operator licence awarded by an expert examination commission, appointed by URSJV.





At the same time, initial training of 18 candidates was started, after having completed successfully the first training phase - Theoretical Basis - in October 2014. The first training phase now takes place every two years.

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

In the final annual session, 15 candidates successfully passed tests for licence renewal, of which five were for reactor operator, nine for senior reactor operator, and one for shift engineer. Two candidates successfully passed the exams for the first award of senior reactor operator. At the end of the year, there were 83 staff in the plant with the reactor operator, senior reactor operator or shift engineer licence.

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

Three groups of ten operational staff attended four-day practical training, which included handling refuelling equipment. Training was aimed at preparing the participants for safe and first-class performance of this important refuelling activity.

As there was no outage in 2014, no pre-outage training took place.

Operational personnel underwent training on the full-scope simulator prior to major activities in the facility. All major modifications which affect the operation and response of the plant were included on the simulator.

### TRAINING FOR PERSONNEL IN MAINTENANCE AND OTHER SUPPORT FUNCTIONS

The training of technical personnel included courses whose aim was for candidates to acquire or refresh the legally required general and specialist skills needed for performing maintenance and supporting functions.

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

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

Under an on-going training of maintenance personnel in two segments, we supported a training program on the subject of general and legally required areas. The maintenance personnel were updated on the new aspects of plant processes and operational experience.



### OTHER LEGALLY PRESCRIBED AND GENERAL TRAINING

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

Initial and refresher training in radiation protection was continued according to legal requirements.

Furthermore an extensive NZIR drill was conducted, supported by the full-scope simulator.

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

An extensive general program of general training is regularly conducted for external contractors, which includes a general training program, programs related to radiation protection (Radiation Protection 2, Radiation Protection 3), and training for work-group leaders.



# 8.0

## SUMMARY OF THE 2014 FINANCIAL STATEMENTS

In accordance with the Companies Act (ZGD-1) and the Articles of Association of NPP, a summary of the NPP Report for 2014 is given below. The summary includes the main characteristics of business operations in 2014 and consolidated fundamental financial statements. The full versions of fundamental financial statements are presented in the NPP Annual Report for 2014 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), the Articles of Association of NPP, the Companies Act (ZGD-1) and Slovenian Accounting Standards (SAS).

The Annual Report of NPP for 2014 was submitted to the organisation authorised to process and publish the data the first working day after it had been accepted at NPP's General Meeting, and is published on its website.

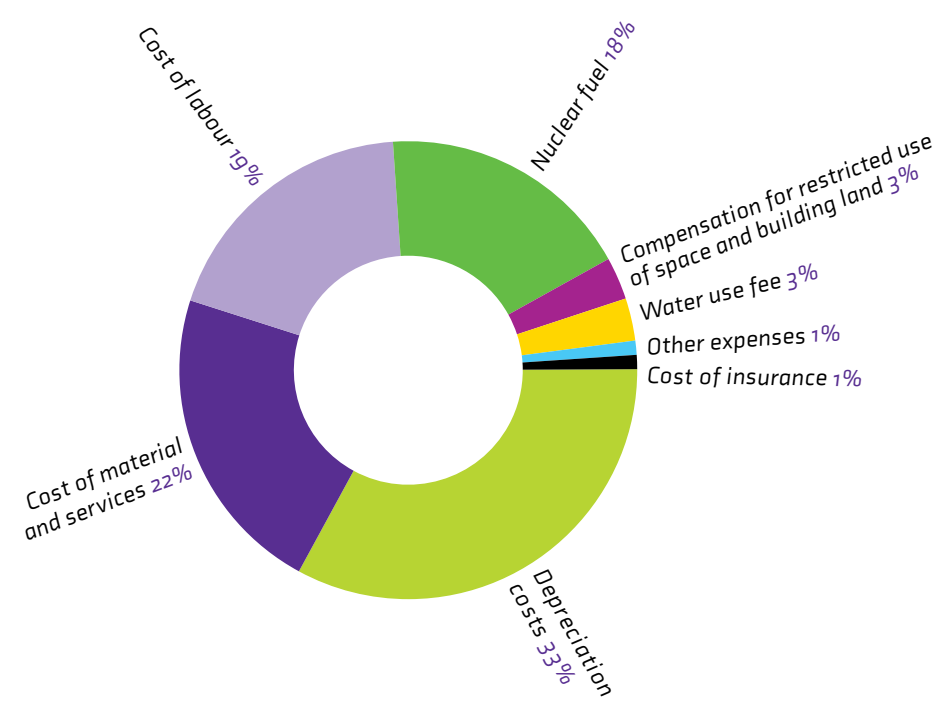
Year 2014 was exceptionally successful for Krško NPP; the plant's operation was very efficient while maintaining a high nuclear safety level and strict respect of all environmental limits. All key 2014 goals were reached. We also achieved the record annual output and thus supplied 6060 GWh electricity, which is 160 GWh more than planned.



The successful business year also reflects in the financial results. We generated a revenue in the amount of EUR 197 641 thousand and EUR 195 040 thousand expenses. The 2014 turnover is by EUR 2 601 thousand higher than the expenses.

The structure of expenses is illustrated in the graph below.

**STRUCTURE OF  
EXPENSES IN 2014**



The largest portions in the structure of expenses are represented by the cost of depreciation, the cost of material and services, the cost of labour and the cost of nuclear fuel, amounting to a total of 92 percent of all expenses.

Investments were made in technological upgrading; however, this was in a smaller scope than planned, as some projects were subject to the feasibility study of the plant operating life-time extension. The results of the study, presented in October 2014, demonstrated that the extension is economical. Therefore, some projects will be given a green light to begin. Due to exceptionally good liquidity, we repaid before schedule both long-term loans.

The financial position of NPP is satisfactory. Long-term resources cover all long-term assets and also all inventories. Business results are demonstrated in the consolidated fundamental financial statements. These should be interpreted together with notes detailed in the NPP Annual Report 2014 which is published on AJPES (Agency of the Republic of Slovenia for Public Legal Records and Related Services) website ([www.ajpes.si](http://www.ajpes.si)).

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



**Auditor's Report for Public Reporting Purposes**

We have audited the financial statements of the company Nuklearna elektrarna Krško d.o.o. and the related notes for the financial year ended 31 December 2014, in accordance with International Standards on Auditing, on which the summaries of financial statements are based. In our report dated 12 March 2015, we have issued the opinion that the financial statements and the related notes on which the summaries of financial statements are based, give a true and fair view of the financial position of the Company as of 31 December 2014, the results of its operations, its cash flows for the year then ended in conformity with the International Contract entered into between the Republic of Slovenia and the Republic of Croatia, and in conformity with Slovenian Accounting Standards issued by Slovenian Institute of Auditors in the part that is not covered by the respective contract between the Republic of Slovenia and the Republic of Croatia.

In our opinion, the attached summaries of the financial statements comply, in all material aspects, with the financial statements from which they originate.

For a better understanding of the financial situation of the Company as of 31 December 2014, the results of its operations, its cash flows for the year then ended, and the scope of our audit, it is necessary to read the summaries of the financial statements together with the financial statements from which they originate and with our Auditor's Report on these financial statements.

**KPMG SLOVENIJA,**  
podjetje za revidiranje, d.o.o.

Tomaž Mahnič, ACCA  
Certified Auditor

Katarina Sitar Šuštar,  
Partner

Ljubljana, 12 March 2015

KPMG Slovenija, d.o.o.  
4

## FINANCIAL STATEMENTS

### BALANCE SHEET AS AT 31 DECEMBER 2014

BALANCE SHEET ASSETS	in thousand EUR	
	31/12/2014	31/12/2013
A. LONG-TERM ASSETS	326 269	370 243
Tangible fixed assets	325 740	369 654
Investment property	418	464
Long-term financial investments	111	125
B. CURRENT ASSETS	157 322	137 762
Inventories	73 389	65 771
Short-term financial investments	56 428	50 150
Short-term operating receivables	27 496	21 818
Cash	9	23
C. SHORT-TERM DEFERRED EXPENSES AND ACCRUED REVENUE	530	525
TOTAL ASSETS	484 121	508 531
Off-balance sheet assets	1 442	1 302

BALANCE SHEET LIABILITIES	in thousand EUR	
	31/12/2014	31/12/2013
A. CAPITAL	441 532	439 753
Called-up capital	353 545	353 545
Revenue reserves	88 675	88 675
Revaluation adjustment	(856)	(35)
Net profit or loss carried over	(2 433)	(2 705)
Retained net profit or loss	2 601	273
B. PROVISIONS AND LONG-TERM ACCRUED COSTS AND DEFERRED REVENUE	8 591	6 962
Provisions for jubilee benefits and severance pay	8 033	6 342
Other provisions	558	620
C. LONG-TERM LIABILITIES	233	9 565
Long-term financial liabilities to banks	0	9 320
Long-term operating liabilities	233	245
Č. SHORT-TERM LIABILITIES	27 412	52 118
Short-term financial liabilities to banks	0	5 320
Short-term operating liabilities	27 412	46 798
D. SHORT-TERM ACCRUED COSTS AND DEFERRED REVENUE	6 353	133
E. TOTAL EQUITY AND LIABILITIES	484 121	508 531
Off-balance sheet liabilities	1 442	1 302

### INCOME STATEMENT FOR THE YEAR ENDED 31 DECEMBER 2014

INCOME STATEMENT	in thousand EUR	
	2014	2013
I. OPERATING REVENUE	197 105	193 874
II. OPERATING EXPENSES	194 391	193 551
III. OPERATING PROFIT OR LOSS FROM OPERATIONS (I – II)	2 714	323
IV. FINANCIAL REVENUE	536	500
V. FINANCIAL EXPENSES	649	550
VI. OPERATING PROFIT OR LOSS FROM FINANCING (IV – V)	(113)	(50)
VII. OPERATING PROFIT OR LOSS FOR THE PERIOD (III + VI)	2 601	273
VIII. Corporate income tax	0	0
IX. NET OPERATING PROFIT OR LOSS FOR THE PERIOD (VII – VIII)	2 601	273

### CASH FLOW STATEMENT FOR THE YEAR ENDED 31 DECEMBER 2014

CASH FLOW STATEMENT	in thousand EUR	
	2014	2013
I. CASH FLOWS FROM OPERATING ACTIVITIES		
1. Cash receipts from operating activities	218 183	212 556
2. Cash disbursements from operating activities	165 750	139 193
3. Net cash from operating activities (1 – 2)	52 433	73 363
II. CASH FLOWS FROM INVESTING ACTIVITIES		
1. Cash receipts from investing activities	525	330
2. Cash disbursements from investing activities	38 137	67 887
3. Net cash from investing activities (1 – 2)	(37 612)	(67 557)
III. CASH FLOW FROM FINANCING ACTIVITIES		
1. Cash receipts from financing activities	0	0
2. Cash disbursements from financing activities	14 835	5 798
3. Net cash from financing activities (1 – 2)	(14 835)	(5 798)
IV. CLOSING BALANCE OF CASH (VI + V)	9	23
V. Net cash inflow or outflow for the period	(14)	8
+		
VI. Opening balance of cash	23	15



# STATEMENT OF CHANGES IN CAPITAL FOR THE YEARS 2014 AND 2013

in thousand EUR

Capital components	Called-up capital	Profit reserves		Revaluation adjustment	Net profit/loss carried over		Net profit or loss for the financial year	Total capital
	Nominal capital	Legal reserves	Statutory reserves		Net profit carried over	Net loss carried over	Net profit	
Opening balance 1.1. 2014	353 545	35 354	53 321	(35)	–	(2 705)	273	439 753
Total comprehensive income of financial year	–	–	–	–	–	–	–	–
Transfer of net financial result of financial year	–	–	–	–	–	–	2 601	2 601
Changes within capital	–	–	–	–	–	–	–	–
Setting off losses as a deductible element of capital	–	–	–	–	–	273	(273)	0
Other changes in capital	–	–	–	(821)	–	–	–	(821)
Closing balance 31.12. 2014	353 545	35 354	53 321	(856)	–	(2 433)	2 601	441 532
Opening balance 1.1. 2013	353 545	35 354	53 321	–	–	(2 705)	–	439 515
Total comprehensive income of financial year	–	–	–	–	–	–	–	–
Transfer of net financial result of financial year	–	–	–	–	–	–	273	273
Changes within capital	–	–	–	–	–	–	–	–
Other changes in capital	–	–	–	(35)	–	–	–	(35)
Closing balance 31.12. 2013	353 545	35 354	53 321	(35)	–	(2 705)	273	439 753

# 9.0

## COMPANY ORGANISATION

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

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





## WE PROVIDE INTEGRAL DEVELOPMENT TO OUR STAFF

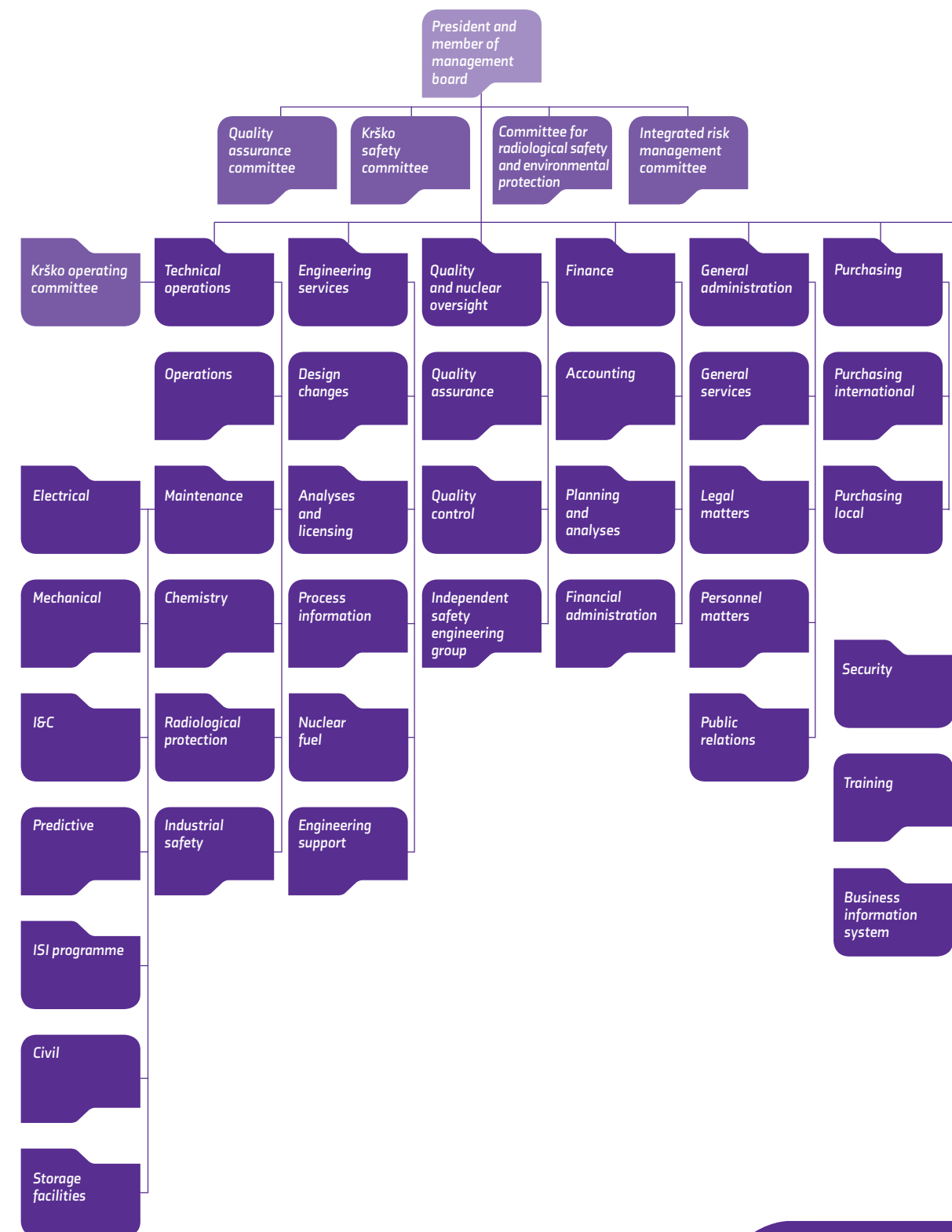
The basic policy of all our activities and the condition for achieving our vision and mission are essential values. These are a constituent part of all work processes and relations. Our fundamental values are a safety culture, excellence in relationships and holistic development of all employees.

Our staff, equipped with relevant knowledge, qualifications and skills coupled with required values, are of strategic worth and key factors of nuclear safety, long-term stability, competitiveness and success. Only a person who constantly learns and develops is capable of adjusting to changes, and is flexible and creative. Therefore, we make long-term plans of employment, timely recruitment and plans of staff development. By transferring knowledge and skills we maintain the level of knowledge and experience not included in the operation documents. Suitably qualified and competent staff are a precondition for efficient high-quality and safe performance of work processes; therefore, we provide on-going systematic training.

In 2014 we ensured stable and sufficient human resources in the plant's work processes. The generation replacement process is coming to an end, and the majority of staff who had been employed since the start of the plant's operation have now left the company. By a recruitment policy resulting in timely employment of new staff within the past few years we successfully replaced those staff who have taken retirement. In the last year 21 new staff were employed. The annual turn-over was 1.7 percent.

At the end of 2014 there were 646 staff employed in NPP, of which 43 percent were with higher professional education and a university degree. There are 7 doctors and 14 staff with a master of science degree. There are 14 percent female staff in total. At the end of the year we had 11 students at the Bologna second degree studies receiving our scholarships.

## ORGANISATION CHART





## ACRONYMS

BS OHSAS	British Standard – International Occupational Health and Safety Management Standard
CHUG	Checworks Users Group
ENISS	European Nuclear Industry Safety Standards
EPRI	Electrical Power Research Institute
IAEA	International Atomic Energy Agency
ICJT	Izobraževalni center za jedrsko tehnologijo / <i>Training Centre for Nuclear Technology</i> /
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
NDE	Non-Destructive Examination
NEK	Nuklearna elektrana Krško / <i>Krško Nuclear Power Plant – Krško NPP</i> /
NMAC	Nuclear Maintenance Application Center
NRC	Nuclear Regulatory Commission
NUMEX	Nuclear Maintenance Experience Exchange
NUPIC	Nuclear Procurement Issues Committee
NZIR	Načrt zaščite in reševanja / <i>Protection and Rescue Plan</i> /
OSART	Operational Safety and Review Team
OTJE	Osnove tehnologije jedrskih elektrarn / <i>Fundamentals of Nuclear Power Plant Technology</i> /
OVD	Okoljevarstveno dovoljenje / <i>Environmental Permit</i> /
PE	Plant Engineering Program
PNV	Program nadgradnje varnosti / <i>Safety Upgrade Program</i> /
PWROG	Pressurized Water Reactor Owners Group
SRS	Slovenski računovodski standardi / <i>Slovenian Accounting Standards</i> /
URSVJ	Uprava Republike Slovenije za jedrsko varnost / <i>Slovenian Nuclear Safety Administration</i> /
WANO	World Association of Nuclear Operators
ZGD	Zakon o gospodarskih družbah / <i>Companies Act</i> /
ZVISJV	Zakon o varstvu pred ionizirajočimi sevanji in jedrski varnosti / <i>Ionising Radiation Protection and Nuclear Safety Act</i> /
ZJNVETPS	Zakon o javnem naročanju na vodnem, energetske, transportnem področju in področju poštne storitve / <i>Public Procurement in the Water, Energy, Transport and Postal Services Act</i> /