



KOZLODUY NPP PLC

REPORT JANUARY-JUNE 2011



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This company journal I have the honour of presenting has been prepared as an expression of our belief that we have to continue to develop the policy of openness and transparency and to continuously provide comprehensive and accurate information about the Bulgarian Nuclear Power Plant to the general public.

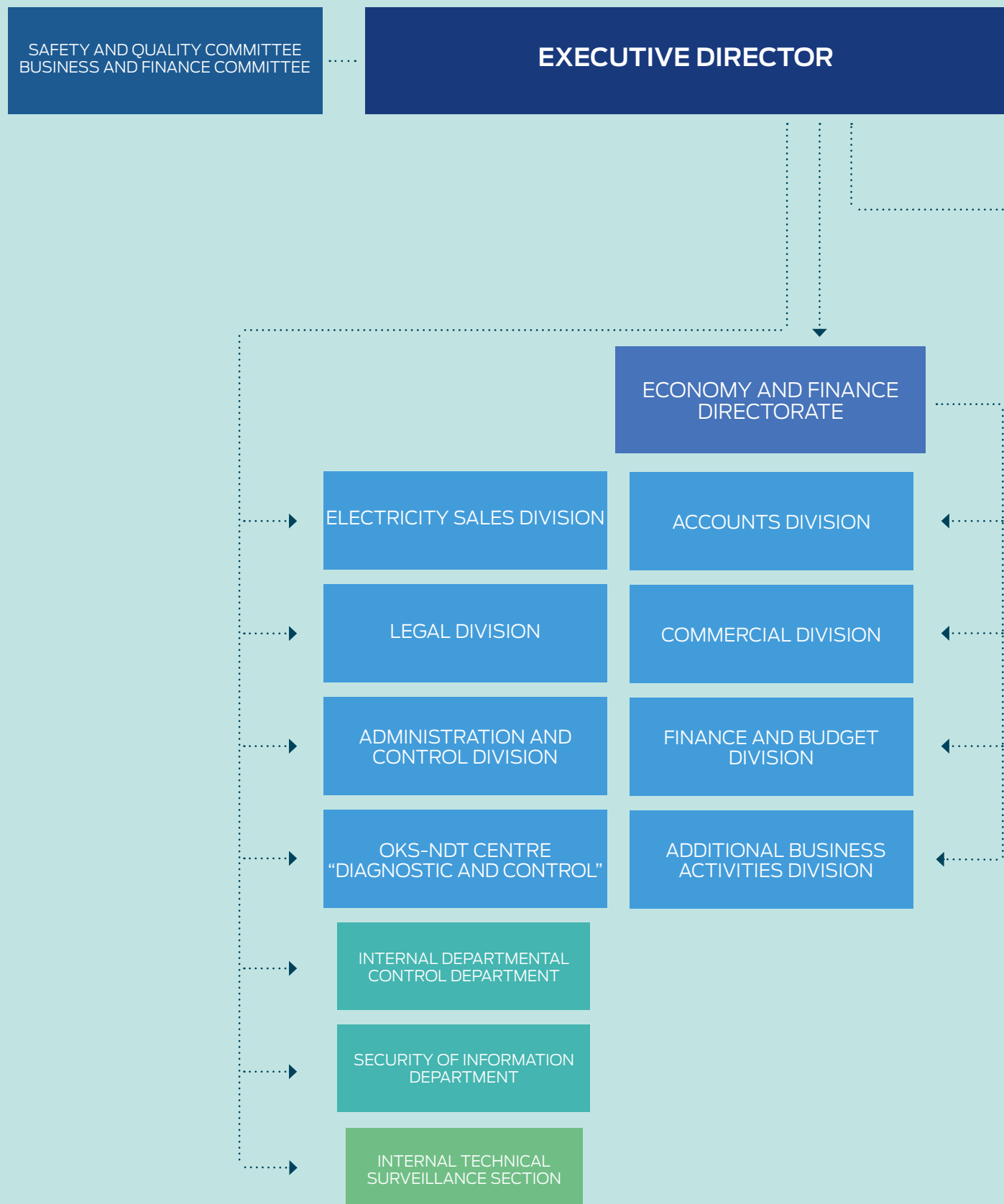
The report includes summarized information about the Kozloduy NPP operation for the first half of 2011. The conclusions drawn for this period have confirmed that our activity is in full compliance with the national legislation in this area and also with the modern world trends in nuclear power electricity production – proving a high level of safety, reliability and effectiveness of nuclear facilities' operation. The very positive assessment received by the successive international mission – the WANO Follow-Up Peer Review of Units 5 and 6 conducted in February at Kozloduy NPP – confirms this assertion.

The production results showed that the first half of the year is among the most successful ones for Units 5 and 6 with both 1000 MW Units generating 8 081 590 MWh electricity for the period. This enabled Kozloduy NPP to hold its leading position of the biggest power generating facility in the country and to continue being a preferred partner in the liberalized electricity market.

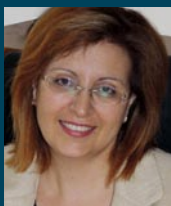
Due to the high level of safety culture of our staff and the plant reliable operation since the beginning of this year there has been no loss of production due to reactor scrams. Our responsibility for ensuring safety has been reinforced following the lessons learnt from the events in Japan. Therefore our approach to work is to resolutely strive to prove that we work for the development of safe and reliable nuclear industry and that our dedicated employees can be trusted to deliver that aim.

KOSTADIN DIMITROV
EXECUTIVE DIRECTOR
OF KOZLODUY NPP PLC

KOZLODUY NPP PLC ORGANIZATIONAL CHART



BOARD OF DIRECTORS



MILENA TSENOVA
CHAIRPERSON OF THE BOARD OF DIRECTORS

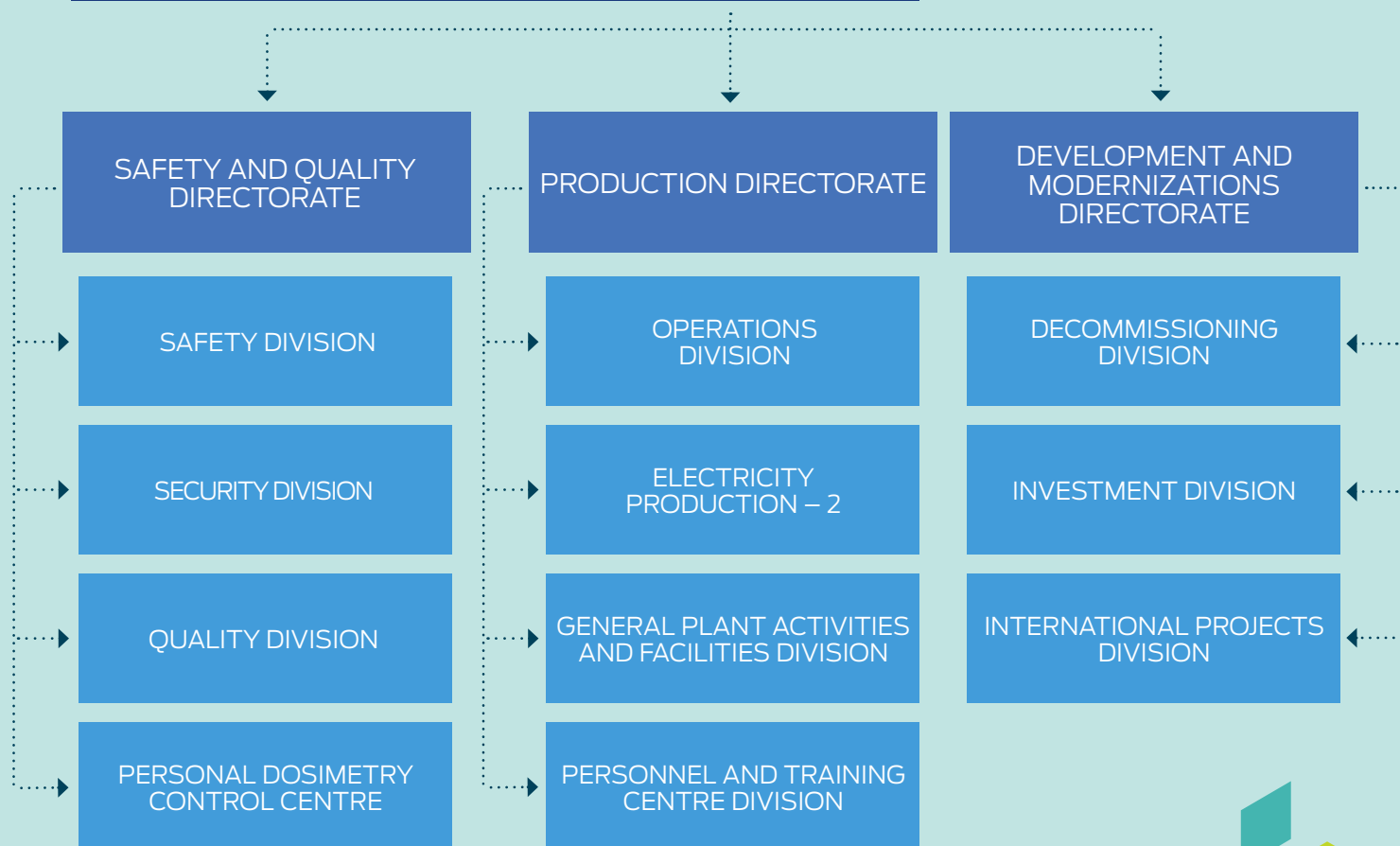


KOSTADIN DIMITROV
MEMBER OF THE BOARD OF
DIRECTORS AND EXECUTIVE DIRECTOR



ALEKSANDAR NIKOLOV
MEMBER OF THE BOARD OF DIRECTORS AND
DEPUTY EXECUTIVE DIRECTOR

DEPUTY EXECUTIVE DIRECTOR





PRODUCTION

ELECTRICITY GENERATION (GROSS)

During the first six months of 2011 Units 5 and 6 were operated in accordance with the load schedule agreed with the Electricity System Operator EAD which was updated on-line in compliance with the procedures envisaged in the Grid Code. For the said period Kozloduy NPP generated 8 081 590 MWh of electricity (gross). The amount of power generated by both 1000 MW Units 5 and 6 exceeds the planned output for this half-year period by 546 630 MWh and by 643 270 MWh the amount generated for the same time period in 2010.

ELECTRICITY SOLD (NET)

The net active power supplied to the national electricity grid amounts to 7 561 719 MWh.

On the regulated market “the protected” consumers received 4 354 426 MWh (58% of Kozloduy NPP total net production).

On the liberalized market, after conducting the respective tenders, 42% of the total net production – 3 207 292 MWh – were sold.

AVAILABILITY

For the control and security of the national electricity grid required and along with the net active electricity for satisfying the demand in the country, for the first half of 2011 the gross availability of Kozloduy NPP generating facilities amounts to 7 783 135 MWh.



THE AMOUNT OF POWER GENERATED BY KOZLODUY NPP JUSTIFIES ITS RANKING AMONG THE TOP ELECTRICITY GENERATING COMPANIES IN BULGARIA.

This is due to the high reliability of the generating facilities, good organization, strict discipline observed with regard to operations, high quality of staff performance as well as the surplus amounts of electricity produced, thanks to the ahead of schedule completion of Unit 5 outage. Traycho Traykov, the Minister of Economy, Energy and Tourism, honoured the outage successful completion ahead of terms set, by a special letter of congratulation on the occasion.

EMILIYAN EDREV
PRODUCTION DIRECTOR



SPECIFIC INDICATORS RELATED TO KOZLODUY NPP OPERATION

LOAD FACTOR – LF

This indicator peak values for this time period are due to the units' optimal mode of operation, with no generation-impacting deviations.

Indicator		2011 first six months
LF – Unit 5	%	82.19
LF – Unit 6	%	103.89
LF – KNPP	%	93.04

UNIT CAPABILITY FACTOR – UCF

This indicator has maximal values for the period as a result of the operation of the units in optimal operating modes without deviations having impact on the preparedness of the facilities, and minimal period for planned outage of Unit 5.

Indicator		2011 first six months
UCF – Unit 5	%	79.35
UCF – Unit 6	%	100.00
UCF – KNPP	%	89.68

UNIT CAPABILITY LOSS FACTOR – UCLF

This indicator is of excellent values for the time period due to the high level of reliability in the units' operation.

Indicator		2011 first six months
UCLF – Unit 5	%	0.00
UCLF – Unit 6	%	0.00
UCLF – KNPP	%	0.00

GRID RELATED LOSS FACTOR – GRLF

This indicator is of excellent values for the time period due to the high level of reliability in the units' operation.

Indicator		2011 first six months
GRLF – Unit 5	%	0.00
GRLF – Unit 6	%	0.00
GRLF – KNPP	%	0.00



MAINTENANCE PROGRAMME

Unit 5 planned outage was performed within the period 24th April to 30th May 2011. Within this planned downtime the unit was refuelled with fresh nuclear fuel for the next fuel campaign that will end up in April 2012. The scheduled outage activities, modernizations and preventive maintenance were completed successfully. The most significant modernizations implemented are the replacement of high-pressure reheaters of the turbine regenerative system and installation of a large-scope temperature control of the reactor pressure vessel (in one of the safety systems trains). The outage of this unit was completed ahead of schedule for the record 37 calendar days instead of the 45 days planned. The unit was connected to the national grid after the review performed and the permit issued by the Bulgarian Nuclear Regulatory Agency in accordance with the

requirements of the Safe Use of Nuclear Energy Act.

HEAT GENERATION

Kozloduy NPP is licensed for heat generation used for the plant technological needs including the closed 4 units and the town of Kozloduy district heating. 53% of the heat generated is used for plant in-house consumption. For households and industrial consumers 52 955 MWh heat is supplied. In order to improve the heat supply quality, a programme for the replacement of heat distribution network pipelines and the consumers' installations in the town is implemented step by step. It is funded by Kozloduy NPP investment programme.

GENERAL PLANT FACILITIES AND SITES

Except for the major nuclear facilities, there are a number of auxiliary general plant facilities and sites built and

functioning at Kozloduy NPP site providing for electricity generation and units' safe operation.

BANK PUMPING STATION

The Bank Pumping Station (BPS) of Kozloduy NPP is a facility unique in its nature and purpose, constructed in the natural deep bay of the Danube River, which provides the possibility to avoid to the maximal extent the alluvial deposits and seasonal fluctuations of the river level, that guarantees the high degree of reliability of the service water for the production cycle and ensures the safety functions in normal operation and in emergency modes of operation. Since 2000 a number of reconstructions and modernizations are implemented at the BPS, amounting to approximately BGN 4.5 million plant's own resources, within Kozloduy NPP investment programme. The BPS technical equipment complies with the latest standards which guarantee

the high degree of operational reliability of the nuclear power plant.

OPEN SWITCHGEAR

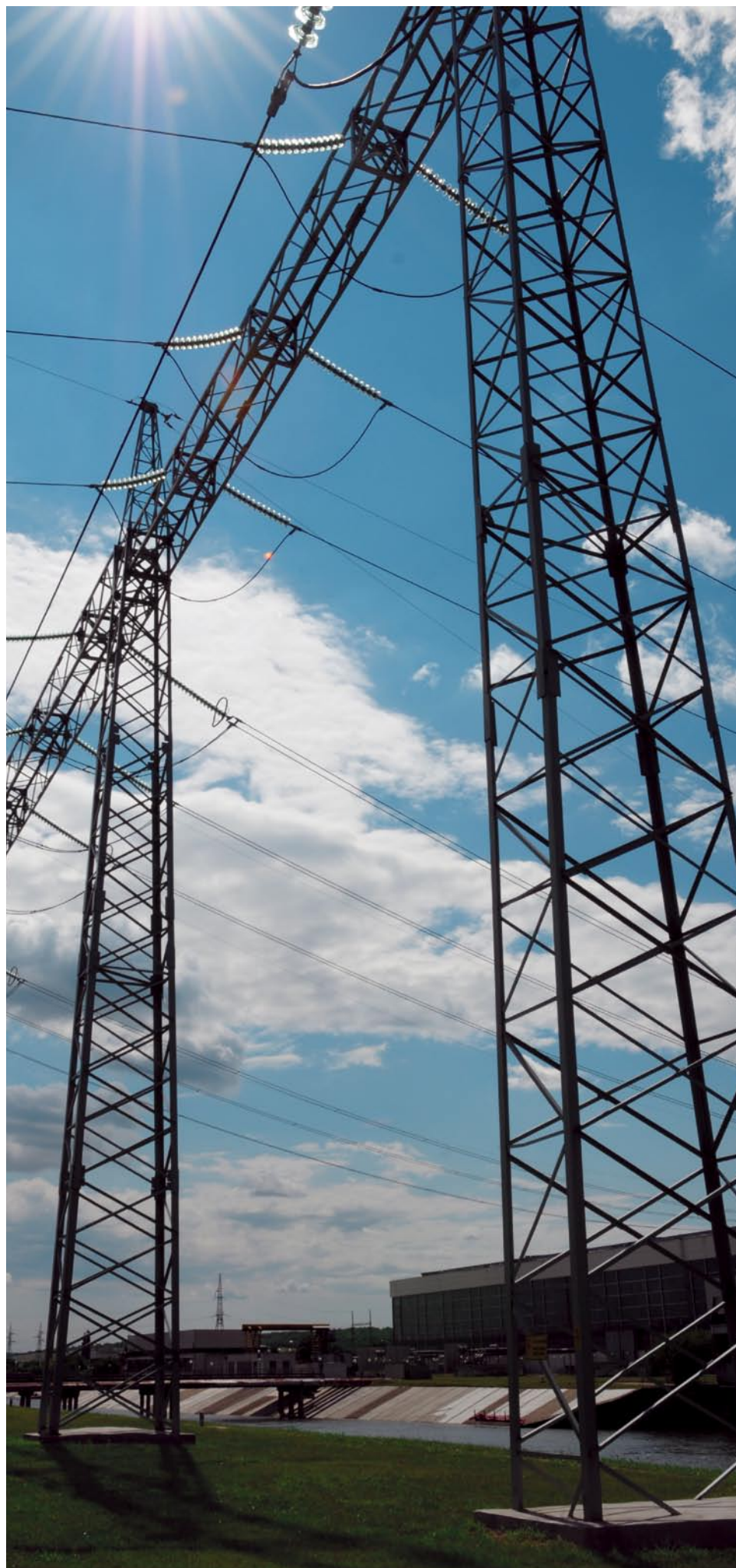
Kozloduy NPP is connected to the national grid by the Switchgear (export of the electricity generated by the units) and external supply and back-up of the plant in-house consumption is provided.

A large-scale programme on the reconstruction of Switchgear facilities is ongoing and it is financed by Kozloduy NPP own resources aiming at enhancement of the nuclear facilities' off-site power supply reliability.

SPENT FUEL STORAGE FACILITIES

A Spent Fuel Storage Facility Wet Type (SFSF-WT) is operated for the temporary storage of the nuclear fuel from Units 1-4 (WWER-440) and Units 5 and 6 (WWER-1000) at Kozloduy NPP site.

The construction of a second Spent Fuel Storage Facility Dry Type is completed in 2011. The facility is built in pursuance of the National Strategy for Safe Storage of Spent Fuel and Radioactive Wastes Management and it is in compliance with the up-to-date requirements for such type of facilities operated in a number of countries around the world.





SAFETY

LICENSING REGIME

The licensing of Kozloduy NPP PLC facilities and the state supervision in terms of nuclear safety and radiation protection in their operation is performed by the Bulgarian Nuclear Regulatory Agency (BNRA).

All activities related to the nuclear facilities operation are in compliance with the provisions of the operating licenses issued by the BNRA.

Activities with sources of ionizing radiation are performed adhering to the licensing and permit regime pursuant to the Safe Use of Nuclear Energy Act.

Throughout the first six-month period of

2011 the operating licence of Unit 3 in the E operating mode was renewed as well as the licence for the use of sources of ionizing radiation for performing control functions – closed void X-ray inspections. In connection with the expiry of the licence for conducting specialized training a procedure for its renewal was launched in May.

Throughout the first six-month period of 2011 the BNRA has issued to Kozloduy NPP PLC 16 permissions for performing modifications which resulted into changes in the structures, systems and components related to enhancing the units' safety.

Arrangements are established for

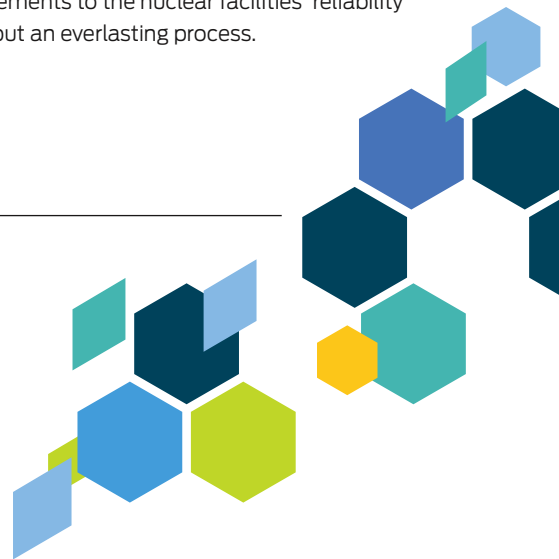
implementing the requirements included in the Safe Use of Nuclear Energy Act and the Technical Requirements to Products Act related to the performance of technical supervision over high-risk equipment operated by the Company. Within the first six-month period of the year Kozloduy NPP PLC obtained a Licence № 678/17.05.2011 for technical supervision over high-risk equipment by the Internal Technical Surveillance Section at Kozloduy NPP PLC and Certificates № BP068, BP069 and BP070 for performing activities for maintenance, repair and reconstruction of high-risk facilities.



THE FUTURE OF THE NUCLEAR POWER PRODUCTION NOW IS RELATED MORE THAN EVER TO ENSURING SAFETY.

Giving safety an absolute overriding priority over the rest of the activities is the basis of Kozloduy NPP PLC management policy. Nevertheless we are deeply convinced that to ensure safety and to maintain the compliance with the steadily increasing current requirements to the nuclear facilities' reliability shall not be a matter of individual actions and measures but an everlasting process.

MITKO YANKOV
SAFETY AND QUALITY DIRECTOR



SAFETY CULTURE

Throughout the years Kozloduy NPP has established and maintained high-level safety culture (SC) which has been demonstrated and made evident time and time again. Nevertheless the plant specialists work continuously for SC enhancement. All the efforts in this aspect resulted into the completion of a large-scope international project Safety Culture Enhancement (KNPPI) within the Cooperation Programme for Safe Nuclear Energy between Norway and Bulgaria at the end of April 2011 at Kozloduy NPP. The aim of the project was to provide expert help and guidance on enhancing the company safety culture. The activities were based on sharing knowledge and

practical approaches (learning by doing) for assessment and enhancement of SC via workshops, seminars, training and guidelines development. Within the project a Self-Assessment of Kozloduy NPP Safety Culture was performed. The aim of the Self-Assessment was to provide a real vision of the company safety culture, define and communicate strengths and good practices and areas for improvement which are subject to the continuous and systematic enhancement of SC. As a result of the project implementation Kozloduy NPP has developed three guidelines related to self-assessment and safety culture enhancement. The other benefits are the establishment

of a team that gained knowledge and developed skills for SC self-assessment, and the establishment of the Safety Culture Committee, the experience and knowledge exchange of the experts working on KNPPI project, participation of our specialists in IAEA working groups for the development of IAEA Safety Report Series documents in the area of SC.

INTEGRATED MANAGEMENT SYSTEM

As a licence holder Kozloduy NPP bears the overall responsibility for the nuclear facilities' safety in compliance with the Convention on Nuclear Safety, Vienna Convention on Civil Liability for Nuclear Damage and the Safe Use of Nuclear Energy Act. Having this role, the Company applies International Atomic Energy Agency (IAEA) safety standards and documents. In compliance with the GS-R-3 safety standard requirements and the BNRA recommendations, Kozloduy NPP PLC has developed a programme for the transition to integrated management system (IMS) which is ongoing. The first stage of the programme is completed. It includes analysis of the existing Quality Management System, definition of the company processes and accepting schedules for the development of these processes and measures to improve the existing Management System. Applying the Integrated Management System at Kozloduy NPP shall result in:





- integration in one system of all requirements to the plant as an organization operating nuclear facilities; integrated and systematic planning of the activities to secure adequately that all these requirements could be met;
- identification of high-priority areas for improvement that will result in optimized implementation of the company activities;
- detection, elimination and exclusion of duplicated responsibilities while performing the activities assuring clearly where and who shall make the decision within the plant;
- avoiding conflicts and decreasing the risk while setting and achieving the goals;
- optimization of the existing documents and tight control over the development of new ones;
- continuous improvement of the results subject to the company activities at high level of safety and striving to satisfy all stakeholders;
- reassuring that safety is of primary

importance within the plant management system compared to production schedules and project implementation schedules.

NUCLEAR SAFETY

There have been no reactor scrams at Kozloduy NPP reactors for the first 6 months of 2011.

3 operating events reported to the BNRA occurred at Kozloduy NPP for the period. All events were classified at level 0 – below the INES scale (no safety significance).

RADIATION PROTECTION

The systematic application of the ALARA principle to minimize the exposure dose is the basis for the activities of the radiation protection management at Kozloduy NPP. The maximal individual effective dose for the period is 2.86 mSv, which is about 6% of the annual limit. The average individual dose exposure is 0.12 mSv. The average collective dose of the two units in operation (WWER-1000) is 0.139 manSv/unit and

is lower than the average WANO Indicator Value of 0.54 manSv/unit for PWR reactors (WANO 2010 Performance Indicators Report).

SPENT FUEL AND RADIOACTIVE WASTE MANAGEMENT

The Spent Fuel (SF) and Radioactive Waste (RAW) management at Kozloduy NPP is in compliance with the National Strategy for Spent Fuel and Radioactive Wastes Management.

The spent fuel is stored adhering to all safety requirements and is monitored by the inspectors of the Bulgarian Nuclear Regulatory Agency, the International Atomic Energy Agency (IAEA) and EURATOM.

For the first six-month period of 2011, 240 SF assemblies from the spent nuclear fuel storage facility have been transported to Russia.

Within the period 6 inspections were

conducted adhering to the safeguards under the Non-Proliferation Treaty. Neither violations nor non-compliances were found concerning the amounts of nuclear materials declared and available during the reviews.

19 reports for inventory changes of nuclear materials – Inventory Change Reports (ICR), and 2 reports for the annual inventory of nuclear fuel – Physical Inventory Listing (PIL) and Material Balance Report (MBR) at Kozloduy NPP were sent to the BNRA and EURATOM. These reports are required under the BNRA Regulation on the conditions and procedure for submitting information to keep records for the activities which are subject to the safeguards of the Non-Proliferation Treaty and Regulation No. 302/2005 of the European Commission on the implementation of the EURATOM safeguards.

The radioactive waste generated from the operation of the nuclear power plant is handed over for treatment to the Specialized Enterprise Radioactive Waste of Kozloduy.

PHYSICAL PROTECTION

As a result of the effective physical protection at Kozloduy NPP no violations of the nuclear plant physical protection were reported within the first six months of the year. This together with the conclusions of the inspections performed by the BNRA and the Ministry of Interior confirms that the physical protection system at the plant fully performs its basic functions. The activities of the Regional Police Department – KNPP are in support of the nuclear plant physical protection.

EMERGENCY PLANNING AND RESPONSE

Kozloduy NPP took part in the Bulgarian-Romanian Nautilus 2011 Exercise which was performed on 12th and 13th April and was organized by the Bulgarian Nuclear Regulatory Agency and the Romanian National Commission for Nuclear Activities Control (CNCAN). The exercise was performed with the support of the International Atomic Energy Agency and the Norwegian Radiation Protection Authority (NRPA). In the organization and performance of the exercise were included teams from the Bulgarian Ministry of Interior (MI) – from Special Forces to fight against terrorism, Border Police Main Directorate and Fire Safety and Protection of Population Main Directorate (FSPP

MD) as well as the Romanian Ministry of Interior and other ministries and state organizations. Specialists from Security Division, Safety Division and Electricity Production – 2 at Kozloduy NPP took part in the emergency exercise.

The actions throughout the two-day exercise were managed by the Chief Secretary of the MI – Kalin Georgiev and Mihai Kutra – Deputy Minister of Interior of Romania. The exercise was supervised by observers from Norway, Romania, Canada and Macedonia, IAEA, Interpol and other international organizations. The exercise was performed under a project of the Cooperation Programme for Safe Nuclear Energy between Norway and Bulgaria and was funded by the Norwegian Government. The coordination among the relevant institutions was optimized as a result of the exercise performed.

The second training of importance was performed on 28th May. It was a separate table top exercise on control of the activities in case of an accident as a result of external events. Specialists from different plant divisions and subdivisions as well as specialists from the Regional Police Department – Kozloduy NPP and Regional Fire Safety and Protection of Population Department – Kozloduy NPP took part in the training.

The training was entitled An Accident in case of an earthquake of magnitude 8.5 according to Medvedev-Sponheuer-Karnik Scale and flooding of the Kozloduy NPP site. The aim of the training was to examine issues related to KNPP structures' interaction and management and KNPP own resources and external help for eliminating the consequences of "natural disasters" which "lead" to beyond design basis accidents.

Effective communication among the divisions participating in the training was demonstrated during the separate table top exercise. In the course of the training the preparedness for activation and implementation of the procedures included in the KNPP Emergency Plan were inspected as well as the ability of the management group to organize joint actions with the regional and municipal headquarters for coordination and management of emergency commands.

FIRE SAFETY

Since the beginning of 2011 no fires in the production installations and at the nuclear plant site have occurred. The high level of fire safety at Kozloduy NPP site is a result

of the technical and organization measures which provide modern protection of the personnel and the safety systems and reduce the possibility for fire occurrence. The inspections performed within the period by the institutions of the Fire Safety and Protection of Population Main Directorate at the Ministry of Interior stated lack of deviation of KNPP fire safety. The Regional Fire Safety and Protection of Population Department operating at the nuclear plant site contributes to the good results.

RADIOECOLOGICAL MONITORING

The radiological monitoring at Kozloduy NPP fully complies with the national and European regulations including Article 35 of the EURATOM Treaty, Recommendations of EU 2000/473/ EURATOM and 2004/2/ EURATOM.

The observed zone is within 100 km around the nuclear power plant and the monitoring covers the main components important for public health protection and environmental radiation conditions.

The results obtained for the first half of 2011 concerning the radiation indicators at the on-site controlled points and the controlled points within the 100 km zone as a whole do not differ from the background levels which are typical for the area. Exception is the recorded increased aerosol activity for the period 25.03.2011 – 02.05.2011 from 0.8 to 637 $\mu\text{Bq}/\text{m}^3$ for Caesium-137, from 1 to 456



$\mu\text{Bq}/\text{m}^3$ for Caesium-134 and from 9.5 to 2 240 $\mu\text{Bq}/\text{m}^3$ for Iodine-131. This is a result of a transboundary transfer from the

Fukushima NPP accident.

The average value of the total beta activity of the airborne deposition in the monitoring area surrounding Kozloduy NPP is from 0.074 to 1.25 Bq/(m².d).

The total beta activity of surface water from the Danube, Ogosta and Tsibritsa rivers, as well as the Kozloduy dam ranges from 0.025 to 0.087 Bq/l, which is up to 12% of the statutory limit (0.75 Bq/l). No radiological impact was registered as a result of Kozloduy NPP operation concerning the natural water ponds in the region. The tritium content of the samples is within the limits of the minimum detectable activity – from 5.1 to 10.8 Bq/l. The total beta activity of drinking water samples ranges between 0.025 and 0.088 Bq/l. Those values are much lower than the admissible limits for drinking water as set forth in Regulation № 9 of 16.03.2001 (2 Bq/l total beta activity and 100 Bq/l for tritium). The tritium content is within the limits of the minimum detectable activity of average 6.9 Bq/l.

No man-made activity was registered in the soils in the 100 km monitoring area due to Kozloduy NPP operation. The results range from 1.6 to 45.4 Bq/kg for Caesium-137. The man-made activity in the vegetation analyzed is within the standard limits – up to 2.6 Bq/kg (dry weight) for Caesium-137.

GASEOUS AIRBORNE AND LIQUID RADIOACTIVE DISCHARGES

Kozloduy NPP systematically performs monitoring of the radioactive discharges in order to avoid the ionizing radiation harmful impact on the population and the environment.

The monitoring of liquid and gaseous discharges to the environment confirms that for the first six months of 2011 the amount of radioactive materials continues to be much lower than the statutory limits. The discharges of radioactive noble gases and Iodine-131 are approximately 0.2%, and the aerosol discharges are about 0.1% of the corresponding annual discharge limits at the Kozloduy NPP site.

The content of Carbon-14 and Tritium in the gaseous discharges from the operating Units 5 and 6 is within the percentage of the annual limit for Carbon-14 and some tenth of the percentage of the annual limit for Tritium.

The total activity of the waste waters discharged to the Danube River is about 0.02% of the permissible annual limit.

MONITORING OF PUBLIC DOSE EXPOSURE

The maximum individual effective dose of the public within the 30 km area is below 2.5 µSv/a, which is 1 000 times lower than

the exposure from the annual natural radiation background (2 400 µSv/a).

Public collective dose within the monitoring area surrounding Kozloduy NPP is completely comparable with the average values for PWR reactors worldwide – UNSCEAR 2000.

ENVIRONMENTAL PROTECTION – NON-RADIOLOGICAL ASPECTS

Kozloduy NPP policy on non-radiological aspects of environmental protection is in compliance with the regulatory requirements and conditions as set forth in the permits issued to the plant by the Ministry of Environment and Water, Danube Region Waters Directorate of Pleven, and Regional Inspectorate of the Environment and Water of Vratsa. Kozloduy NPP has all necessary permits required by the regulations for this industry.

Samples from the underground and waste waters at the nuclear power plant site and the non-radioactive waste storage facility have been analyzed implementing the activities for environmental protection and plant non-radioactive monitoring programmes. Approximately 180 samples have been analyzed and around 1000 analyses performed since the beginning of 2011 (a part of the analyses has been performed by the plant laboratories and another part – by an external accredited laboratory). The results from the analyses show that the values of the monitored indicators are close to previous years' values.



STRESS TEST PERFORMANCE AT KOZLODUY NPP

In the light of the events at the Fukushima Nuclear Power Plant in Japan on 11th March 2011, the urgent need of measures for assessment of the current status and the preparedness of the nuclear power plants to respond and ensure safety when facing a set of extreme natural events (so called stress tests*) has been set the issue of the day.

The decision for stress test performance at Kozloduy NPP was taken at the meeting initiated by the Bulgarian Prime Minister Boyko Borisov with the Plant Management and held on 21st March 2011 at the Council of Ministers. Following this decision on 23rd March, an extended meeting of the Plant Safety and Quality Committee was conducted where the required activities for stress tests performance were identified. Representatives of the Bulgarian Nuclear Regulation Agency (BNRA), Ministry of Economy, Energy and Tourism, Institute for Nuclear Research and Nuclear Power at the Bulgarian Academy of Sciences (BAS) and Regional Administration of Vratsa participated in the meeting. A Task Force Team with four expert groups was established for coordination and organization of stress tests performance considering the guidelines and requirements of the Western European Nuclear Regulators' Association (WENRA), European Commission (EC), World Association of Nuclear Operators (WANO) and BNRA.

On 24th March, the BNRA submitted to Kozloduy NPP its requirements for taking preventive short-term measures related to the accident at Fukushima NPP and set deadlines for their implementation. The measures appointed by the BNRA developed the governmental initiative further and are the preliminary short-term activities for stress test performance until the adoption of the common requirements to all European Union nuclear power plants. The measures include visual inspections, testing, technical status reviews and inspection of structures, systems and components intended to manage and mitigate the consequences of beyond design basis accidents (BDBA) caused by extreme external events; review of the existing emergency instructions, plans and procedures.

After the performance of all planned activities some future measures are identified to optimize the response of



Kozloduy NPP in the event of simultaneous impact of natural disasters on the nuclear facilities at the site. The report with the results is submitted to the BNRA on 10th June 2011. These results will be used in the national report of the Republic of Bulgaria on the common stress tests for the nuclear power plants in the EU countries. The Word Association of Nuclear Operators distributed as early as on 18th March the recommendations on behalf of the association for performance of the measures which shall be taken by nuclear power plants to mitigate the consequences of beyond design basis accidents and review the preparedness to respond in case of off-site power supply loss, earthquake and flooding. The Kozloduy NPP reports for performance of the measures recommended by WANO are sent to London and Moscow Centres of the Association on 12th May 2011. The European Nuclear Safety Regulators' Group (ENSREG) adopted the contents and format of the stress tests for nuclear power plants in Europe proposed by the Western European Nuclear Regulators Association (WENRA). The BNRA via letter dated 31st May 2011 submitted to Kozloduy NPP these requirements and the areas where risk and safety assessment must be performed. Based on the requirements, a detailed

methodology defining the contents and format for stress test performance is developed. The methodology is submitted to the BNRA on 22nd June 2011. The stress tests at the Kozloduy NPP will be performed within the period July-October 2011. On 10th August 2011, the preliminary progress report is submitted to the BNRA, and by 28th October 2011 – the Final Report on the implementation is to be submitted. The Development and Modernizations Directorate coordinates the activities for the stress tests performance. Taking into account the short terms for implementation and the significance of the task for reassessment of Kozloduy NPP safety, engineering companies and the institutes of the Bulgarian Academy of Sciences are involved both in the preparation and the performance of the activities.

*A "stress test" is defined as a targeted reassessment of the safety margins of nuclear power plants in the light of the events which occurred at Fukushima: extreme natural events challenging the plant safety functions and leading to a severe accident.



DEVELOPMENT AND MODERNIZATIONS

DECOMMISSIONING

The implementation of preparatory works related to the decommissioning of the closed 440 MW Units of Kozloduy NPP, including strategic planning, preparation of the licence documentation, and management of the projects assisting and supporting the relevant activities, continued throughout 2011.

Some modifications of the decommissioning concept were adopted during that period. On 5th January 2011, based on the Council of Ministers' Decree, the Updated Strategy for Spent Nuclear Fuel and Radioactive Wastes Management until 2030 was adopted. In the long term, "brown field" was identified

as the final condition of the industrial site on which Kozloduy NPP Units 1-4 are decommissioned. It will be achieved by implementing the following activities: dismantling of equipment which is not intended for further use, release from regulatory control of buildings and facilities which will remain operable, treatment and removal of all radioactive waste from the site and bringing the site into a condition meeting the needs of the nuclear industry or other business activities. In compliance with the regulatory requirements the development of the documents required for issuing decommissioning licences continued. In February 2011 the Kozloduy Project

Management Unit submitted to Kozloduy NPP a Safety Analysis Report for Decommissioning of Kozloduy NPP Units 3 and 4 – Phase 1, Revision 0 and a Technical Report "Assessment of Radioactive Contamination Source and Dose Exposure Rate at Dismantling in Reactor Hall" for review and approval. Concerning the preparation of the Environmental Impact Assessment Report for the Decommissioning of Kozloduy NPP Units 1-4 in May, with the assistance of the Ministry of Environment and Water (MEW), the input data, requested by the Project Contractor – Energiewerke Nord GmbH (Germany) in order to prepare an impact assessment in a transboundary



TO ACHIEVE ITS OBJECTIVES KOZLODUY NPP HAS TO WORK CONTINUOUSLY FOR THE DEVELOPMENT AND MODERNIZATION OF ITS FACILITIES.

To achieve its paramount objective – safe, efficient, and environmentally friendly electricity generation, Kozloduy NPP shall put consistent efforts into the development and modernization of the nuclear capacities. Therefore, in response to that need and taking into account the understanding that the good coordination of the activities is a prerequisite for efficiency, the Development and Modernizations Directorate was established. The optimization and coordination of the activities related to the investment policy, modernization of facilities, implementation of international projects including international missions and reviews, decommissioning, construction of new facilities, etc. are among its major priorities.

IVAN ANDREEV

DEVELOPMENT AND MODERNIZATIONS DIRECTOR

aspect, were received from Romania and submitted to the Contractor. Currently the Plan for Interaction with the Stakeholders (pursuant to the requirements of the European Bank for Reconstruction and Development) is under development. One of the most significant projects related to the decommissioning – the construction of a Dry Spent Fuel Storage Facility (DSFSF), was completed successfully. The cutting the ribbon ceremony of the Dry Spent Fuel Storage Facility was held at Kozloduy NPP on 12th May 2011 and was attended by Boyko Borisov, the Prime Minister of the Republic of Bulgaria, Traycho Traykov, the Minister of Economy, Energy, and Tourism, and Kostadin Dimitrov, the Executive Director of the Nuclear Power Plant. The facility constructed at Kozloduy NPP site obtained a certificate of occupancy under Form 16 on 25th March this year. The project was funded by the Kozloduy International Decommissioning Support Fund (KIDSF) administered by the European Bank for Reconstruction and Development (EBRD). The project is implemented by the Consortium of NUKEM TECHNOLOGIES GmbH – GNS GmbH – Germany chosen as Contractors subsequent to an international tender procedure.

INVESTMENT PROGRAMME

Kozloduy NPP PLC Investment Programme is mainly aimed at funding measures to ensure reliable, safe and effective operation of power Units 5 and 6. Within the period 1st January to 30th June 2011 priority investment activities

were completed in connection with the continuation of the Units' modernization process and safety enhancement of their operation. Approximately 80% of plant own funding is aimed at the implementation of measures for reconstructions and modernizations of the existing capacities, development of programmes, analyses, and assessments regarding the safe operation of the existing systems and facilities, and nuclear power units' lifetime extension. The major priority within the plant Investment Programme throughout that period are the measures included in the

Units 5 and 6 Lifetime Management Programme which represents the concept of Kozloduy NPP regarding Lifetime Management of Structures, Systems and Components of Units 5 and 6 Safety Systems as of the expiry of their design lifetime as well as provision of beyond design operation.

For the first half of 2011 the costs for delivery and installation of high-pressure heaters at Unit 5 were included as a part of the costs for large-scale modernization activities. The proved benefits of the already performed replacement at Unit 6 are the additional electricity generation



as a result of the increased efficiency of feedwater heating, enhanced water chemistry regime of secondary circuit, optimized heat exchange of the steam generator, and reduced costs and time for maintenance. The rest of the activities performed throughout the first half of 2011 are also aimed at improving the operability of the facilities and equipment lifetime extension:

- A comprehensive study of the actual status and assessment of the residual life of Units 5 and 6 equipment and facilities aimed at long term operation of the Units has been launched;
- Replacement of 6 kV breakers of BЭ-6 type at 5,6BA, BB, BC, BD Sections – implemented at Unit 5;
- Reconstruction of panels for control board at Control Rooms of Circulating Pump Stations (CPS) 3 and 4 - delivery made, the installation will take place during the outage in 2011 for CPS 4 and the outage in 2012 for CPS 3 respectively;
- Delivery of spare parts and cylinders for quick stop valves (QSV) ELIDOR 2000 (5,6TX50-80S06) and delivery of spare valve gate for QSV ELIDOR 2000;
- Delivery of 68 position sensors for the Control Rod Drive (CRD) and setting up the equipment of the Control Rod Drive Control System (CRDCS) of Unit 5 – 14 pcs delivered.

The activities within the Safety Enhancement and Maintenance Programme at Kozloduy NPP in 2010, 2011 and 2012 which is developed in compliance with the requirements of the Safe Use of Nuclear Energy Act, and bylaw regulations adopted by the Council of Ministers, are also implemented throughout the first half of the year. Their implementation ensures nuclear safety, radiation protection, and environmental protection throughout the operation of the units, Spent Nuclear Fuel Storage Facility (SNFSF), and radioactive materials management at Kozloduy NPP. The activities performed under the Programme are as follows:

- Design, manufacturing and installation of technological plugs made of high temperature resistant material for preventing the early by-pass of the containment in case of severe accidents – a procedure for selection of a Contractor has been initiated;
- Performance of measures related to thermal uprating of WWER-1000/B-320 reactor facility and justification of safe operation at increased power rates – the project main objective is justification of

safe operation and proving sustainability of reactor facility behaviour and related systems in the conditions of increased power rates;

- Elaboration of Volume 2 of the Technical Specifications for safe operation of Kozloduy NPP Units 5 and 6 with WWER-1000/B-320 reactors installed and bringing the Updated Safety Analysis Report (SAR) in compliance with the current status of Units 5 and 6 – a procedure for selection of a Contractor has been initiated;
- Installation of temperature control in the lower part of the reactor pressure vessel – one channel was installed and put in trial operation during Unit 5 outage, which lasted from 24th April to 30th May. The remaining equipment is to be installed. The investment activities under the Energy Efficiency Programme to ensure compliance of the building structure fund with the requirements of the national regulations on energy efficiency according to the developed action plan for the period



2009 to 2011 continue. The measures performed will result in enhancing the energy efficiency, and the ultimate goal shall be issuing an energy certificate. The remaining part of the reported resources under the investment programme, which are funded by the company, was invested into the activities related to gradual performance of the measures for modernization and safety enhancement of the Spent Fuel Storage Facility, modernization of the facilities under the Programme for Reliability Enhancement of Switchgear (SG), upgrading the full-scope simulator (FSS)-

1000, etc.

As of 30th June 2011 since the beginning of the year, the invested costs from the Kozloduy NPP own funds amount to BGN 49 407 thousand. The structure of the expenses made, financed from the company funds is as follows: for construction and installation works (C&I) – BGN 7 562 thousand, equipment and facilities (E&F) – BGN 35 964 thousand, research and development works (R&D) – BGN 5 855 thousand, others – BGN 26 thousand. The reported data include costs for significant spare parts and capitalized repair amounting to BGN 1 763 thousand.

The value of the long-term assets financed by plant own resources and applied during the first half of 2011 is BGN 5 304 thousand. For the Dry Spent Fuel Storage Facility – for the first stage a Certificate of Occupancy under Form 16 on 25th March 2011 was obtained. On 27th June 2011, the State Acceptance Commission accepted the site for the Installation of High-pressure Chamber type Heaters (HPH-K) – 5,6RD21,22,IL,12W01 at Unit 5 and issued a user licence.

INTERNATIONAL COOPERATION

The World Association of Nuclear Operators (WANO) conducted a Follow-up Peer Review within the period 7th to 11th February 2011 at Kozloduy NPP WWER-1000 MW Units 5 and 6. The objective of the Review was to evaluate the implementation of the recommendations and progress achieved after the 2009 Peer Review Mission at Electricity Production – 2 at the invitation of Kozloduy NPP Management. The specific activities resulting from the recommendations made were included in the specially developed Programme which was completed before the beginning of the Follow-up Review.

The WANO experts reviewed the main areas of the activity of the 1000 MW Units 5 and 6 observing the work of the personnel, status of working places, technological compartments, equipment and buildings. They performed interviews, reviewed the documentation and performed objective and impartial evaluation of the operation and maintenance in all aspects. Kozloduy NPP personnel demonstrated practices which can be shared with other nuclear operators all over the world, demonstrated high level of safety culture, knowledge and adherence to the procedures, instructions,



and safe labour condition rules. Thus it is guaranteed that in the future the safe and effective operation of Units 5 and 6 will be in accordance with the international safety standards.

At the end of the review, the WANO experts submitted their conclusions to Kozloduy NPP management. They highlighted the progress observed during work performance, and pointed out the good housekeeping of Units 5 and 6 facilities and systems.

The representatives of the World Association of Nuclear Operators were unanimous with the nuclear power plant management team that the relations of honesty, openness and transparency are fundamental to the achievement of the missions' main common objective of maximum level of safety and culture of the Operators for which mutual trust, long years of efforts and coordinated actions are required.

Following the completion of the review, the WANO team leader Frantisek Kostiha commented: Kozloduy NPP is managed according to the highest international criteria and standards. I am impressed by the high level of competence of Kozloduy NPP personnel and managers.

In the period 15th to 17th March 2011, at the invitation of Kozloduy NPP, the WANO Technical Support Mission was conducted to review the OSART Mission Preparation. The issues considered were related to the methodology for conducting Operational Safety Review Team Missions, current

trends for their performance, the required organization for their preparation, etc. In connection with the forthcoming IAEA OSART Mission in 2012, a Programme containing all the activities required for the successful preparation of the plant has already been developed at the end of 2010. The implementation of the programme provides Kozloduy NPP the opportunity to reinforce Units 5 and 6 high level of operational safety. After the completion of the Follow-up Peer Review and the WANO Technical Support Mission, their results were analyzed in detail and the proposals were incorporated in the new revision of the Programme for Preparation of the OSART Mission at Units 5 and 6. Review area task groups were established to perform the activities planned for the preparation of the structural units and implement the Programme. A database was set up to trace the programme implementation. The programme current progress was promptly recorded in it.

Kozloduy NPP renewed its membership in the European Nuclear Installations Safety Standards Initiative (ENISS) in the FORATOM organization. The Initiative tasks are connected with the establishment of a common position of nuclear industry on safety reference levels proposed by WENRA (Western European Nuclear Regulators Association). The activities included in the ENISS action plan for 2011 are focused on the actual key issues. The issue for adequate response to the nuclear

events in Japan is also included. Therefore the intention to perform stress tests at the European nuclear power plants was expressed.



FINANCIAL PERFORMANCE



OUR MAIN TASK IS TO WORK FOR KEEPING KOZLODUY NPP PLC GOOD ECONOMIC STATUS UP.

The main priority is ensuring the financial resources to meet all safety requirements, improving reliability of operation and enhancing the efficiency of the power production process. In the light of the events in Fukushima and the economic situation in the country, it is of primary importance for the Management to find the balance between keeping the competitiveness of electricity generation and providing the necessary resources to meet all new safety requirements. Thus all possibilities to optimize the costs are investigated.

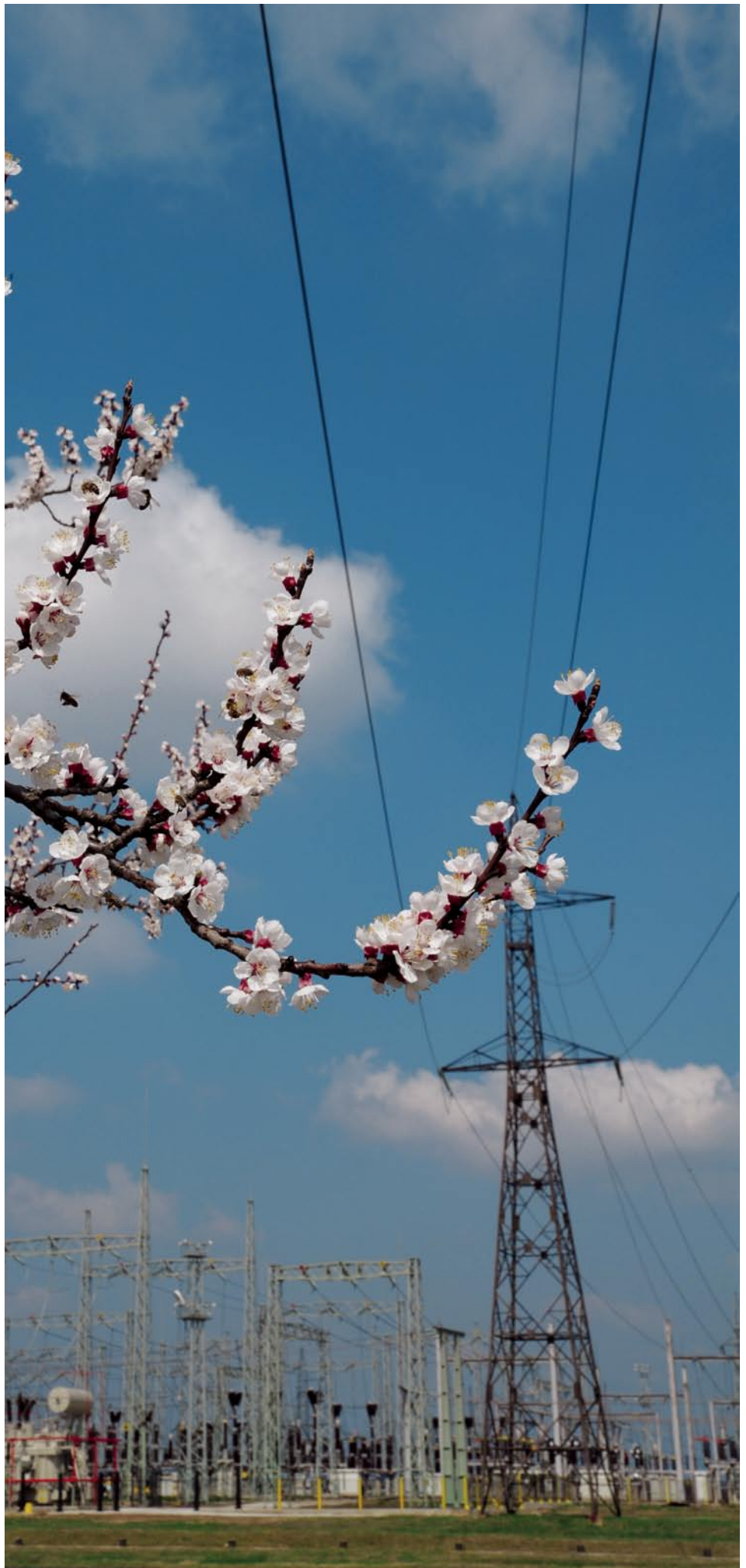
SIYKA PENKOVA
ECONOMY AND FINANCE DIRECTOR

ACTUAL STATUS

Despite the increase in the quotas for the regulated market over the past years in order to maintain a socially beneficial price for the so called “protected consumers”, the Company has managed to compensate the losses from the regulated prices and maintains a good financial status through sales in the free electricity market.

The available financial resources are managed in a way that they ensure a good profitability at minimal risks for the Company through establishing deposits in different banks in the conditions of transparency and compatibility. The established deposits as of 30th June 2011 amount to BGN 94 567 thousand, for BGN 40 917 thousand as of 31st December 2010. The optimal availability of the free cash funds is maintained which allows the Company to meet the deadlines for making due payments for loans, taxes, personnel, contractors, etc.

Kozloduy NPP PLC is the Contracting Authority for public procurement pursuant to Article 7, item 5 of the Public Procurement Act. Therefore the processes for contractors' selection and signing and administration of contracts are in compliance with the Public Procurement Act provisions and bylaws and regulations. In order to ensure a systematic approach to the management of the process for public procurement awarding, the Company has an established and working system of documents (internal rules pursuant to the Public Procurement Act). In order to optimize the procedures, standard documents are used, as well as all possibilities, which the legal framework provides with the contracting authorities in order to ensure publicity, competitive conditions, operability (reduction of the terms) – Client Profile (on the company internet site), registered authorized users in the Public Procurement Registry, the e-Sender service, preliminary notices, electronic signatures for correspondence. In terms of adherence to the Public Procurement Act principles and in order to ensure the possibility for selection, Kozloduy NPP PLC publishes in the Client Profile notices for awarding of small public procurement according to the arrangements and pursuant to Article 2 of the Regulation for awarding small public procurement. Kozloduy NPP PLC is one of the major Contracting Authorities for public procurements in Bulgaria and for the first half of 2011 in order to ensure the



implementation of the Company Business Programme the following procedures have been launched (and currently they are at different stages of implementation):

- 122 procedures for awarding public procurements (including 68 – negotiated procedures with notice, 7 – open procedures, 14 – open tenders, 20 – negotiated procedures without notice and 13 – negotiated procedures with invitation) pursuant to the Public Procurement Act and Regulation for awarding small public procurement;

- over 300 procedures for awarding small public procurements pursuant to Article 2, paragraph 1 of the Regulation for awarding small public procurement.

The awarded procurements amount to BGN 73 669 thousand without VAT.

With regard to the need for optimization of the warehouse stocks and manage effectively the warehouse reserves the measures are taken for:

- emptying old and unusable stocks out of the warehouses (mainly from the closed Units 1-4);

- accelerating the process of selling the discarded assets and wastes;

- updating and optimizing the nomenclature of the items by groups of materials;

- the range of the applied modules to the INFOR ERP LN management system is extended in order to optimize the business processes on the basis of the on-line sales information.

For the first half of 2011, over 30 procedures were performed (including tenders for sales of long-term tangible assets, procedures for sale of waste, direct negotiation for sale of long-term tangible assets, sales of old and unused stocks). More than 50 contracts were prepared and signed, and as of 30th June 2011 revenue amounting to BGN 920 thousand was obtained.

The Company doesn't experience difficulties with the financing of the current costs at this stage. We are expecting a serious problem when implementing the main and high-priority project of the company for the next years, which is the units' operating lifetime extension after the expiry of the their design lifetime in 2017 for Unit 5 and 2019 for Unit 6. Based on the preliminary calculations, the shortage of investment resources is averaged between 30 and 40 million per year. In order to solve this problem, we have sent a written request to the Ministry of Economy, Energy and Tourism to renew the arrangement

which was in force until 2009 for deduction of the state guaranteed loans from the profit prior to the assessment of dividends for the state and reduction of its size from 80% to 50 %.

The risks from failure to perform the project for the units' design lifetime extension:

- The shutdown of Units 5 and 6 will deprive Bulgaria of 30-35% of the cheapest energy source and the main part of the export, and at the same time will deteriorate the electricity balance within the country and the region.

- The cost of the electricity for protected consumers will be significantly increased after the dropping out of the only cheap balancer Kozloduy NPP and increase of the share of electricity generated from Renewable Energy Sources in the national energy mix.

- The increase of the greenhouse gasses and deterioration of the energy mix due



to the decrease in the share of the low-emission energy produced by Kozloduy NPP.

- Direct losses for the national budget which will have to cover the costs for radioactive waste management and decommissioning of Units 5 and 6 since the funds have not accumulated enough resources including due to the early closure of Units 1-4.

- Less revenues from taxes, dividends, etc. to the national budget.

- The state as the Guarantor for the long-term loans for the modernization of Units 5 and 6, which payment is due until 2021 will have to cover these liabilities as well.

- Increase of the costs for radioactive waste management and correspondingly increase of the burden on the national budget in the long-term aspect.

The decision of the State Energy and Water Regulation Commission No. TE-020 dated 29th June 2011 defined the obligation of Kozloduy NPP PLC for supply of electricity to the regulated market for the regulatory period 1st July 2011 to 30th June 2012 amounting to 9 000 000 MWh. The decision of the State Energy and Water Regulation Commission No. C-22 dated from 29th June 2011 also defined the regulated prices at which Kozloduy NPP shall provide the defined quota:

- price of energy – reduced from BGN 15.75/MWh to BGN 15.30/MWh;

- price of availability – reduced from BGN 28.06/MWh to BGN 27.00/MWh;

The positive factor is the individual quota for the regulated market reduced by the State Energy and Water Regulation Commission from 9 730 000 MWh to 9 000 000 MWh. Despite the reduced prices, with the revenues from the free market the difference between the production cost and the cost of electricity at the regulated market will be compensated.

ECONOMIC INDICATORS

Kozloduy NPP PLC completed the first half of 2011 with book profit amounting BGN 105 800 thousand. The overproduction and increased sales at the deregulated electricity market compensate the loss for the first half of the year which is set in the Company Business Programme.

For this period, the revenues for Kozloduy NPP PLC amount to BGN 432 565 thousand. The favourable factor is the increase of the share of the electricity sales in the free market by 10% compared to 2010, which leads to the increase in the revenue of this share by 11%.

The key factor for the increase in the revenues from sales is the increased range of sales as a result of the improved economic situation in the country and the region which led to increase in the electricity demand. Moreover, the overproduction is a result of the measures performed to shorten the duration of Unit 5 outage. The price factor has a minimal negative impact.

Structure of Kozloduy NPP PLC expenditure for the first half of 2011.

The expenses for the entire activity of Kozloduy NPP PLC amount to BGN 324 855 thousand.

The company performs its obligations related to the management of spent nuclear fuel in compliance with the adopted by the Council of Ministers updated Strategy on Spent Nuclear Fuel and Radioactive Wastes Management until 2030. The planned transportation of spent fuel from Kozloduy NPP PLC WWER-440 Reactors for temporary storage and treatment to Russia amounts to BGN 29 554 thousand. The transportation of spent nuclear fuel is chargeable to the accrued provision in 2010.

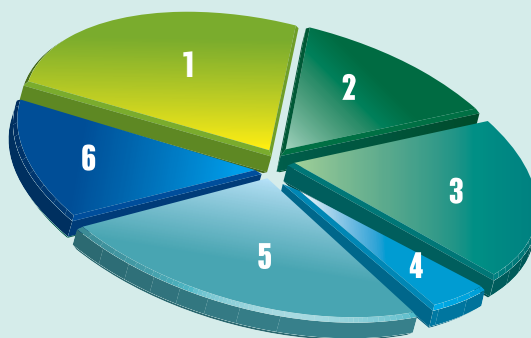
The liabilities for state guaranteed loans for modernization of Units 5 and 6 and Radioactive Waste Fund and Nuclear Facilities Decommissioning Fund (paid BGN 43 687 thousand) are serviced. The allowances for the funds amount to 13% of the costs. The financing of the preparatory activities for Units 3 and 4 decommissioning until they are announced for Radioactive Waste Facilities and transferred for management to the State Enterprise Radioactive Waste is by Kozloduy NPP PLC own funds from current revenues as well as by the National Nuclear Facilities Decommissioning Fund. The Kozloduy International Decommissioning Support Fund (KIDSF) finances preparatory decommissioning activities and dismantling activities approved by the BNRA.

For the first half of 2011, the costs of the preparatory activities for Units 3 and 4 decommissioning amount to BGN 31 271 thousand, including:

- BGN 18 696 thousand Kozloduy NPP PLC own resources to maintain the units' safe condition;
- financing of the current activity from the KIDSF amounting to BGN 12 575 thousand.

All due taxes, fees, etc. amounting to BGN 94 645 thousand were paid to the national budget. All payables to employees related to the labour and social legislation strictly following the legislative requirements were paid. BGN 20 476 thousand in total were paid to the social funds, including social insurances, public insurance, funds for re-qualification and unemployment and for health insurance. The financial status by the end of the year is expected to be good. The company owns and will maintain the required financial resources for ensuring promptly payment of its obligations accrued by the company activities. The current financial status of Kozloduy NPP PLC shows that the company is capable of maintaining sustainable and stable production of electricity with good economic efficiency.

Structure of Kozloduy NPP PLC expenditure for the first half of 2011



1	Nuclear Fuel Management	24%
2	Operation and Maintenance of the Units	14%
3	Expenses for personnel	24%
4	Social Insurance	5%
5	Depreciations	20%
6	Radioactive Waste and Nuclear Facilities Decommissioning Fund	13%



STATEMENT OF FINANCIAL POSITION OF KOZLODUY NPP PLC

AS OF 30th JUNE 2011

(In thousands of BGN)

Description	30.06.2011	31.12.2010
ASSETS		
Non-current assets		
Long-term tangible assets	1 116 627	1 174 642
Intangible assets	5 970	6 461
Financial assets	232	232
Investments in subsidiaries	1 161	1 161
Loans granted	19 156	17 504
Assets under construction	272 658	241 625
Total of non-current assets	1 415 804	1 441 625
Current assets		
Nuclear fuel	233 551	231 725
Inventories	53 068	52 085
Trade and other receivables	43 633	37 781
Receivables from related parties	161 859	202 452
Granted loans to related parties	48	38
Current tax receivables	7 937	
Deferred expenses	185	377
Cash and cash equivalents	175 697	72 822
Total of current assets	675 978	597 280
Total of assets	2 091 782	2 038 905
LIABILITIES AND EQUITY		
Equity		
Share capital	101 716	101 716
Legal reserves	14 332	14 332
Other reserves	976 842	976 842
Retained earnings from prior periods	143 023	82 585
Retained earnings from current period	105 800	60 437
Total of equity	1 341 713	1 235 912
LIABILITIES		
Non-current liabilities		
Long-term bank loans	332 002	352 538
Retained sums for construction contracts	7 672	3 734
Funding	171 866	176 114
Deferred tax liabilities	37 723	37 723
Payables for employee benefits	18 324	19 541
Deferred income	835	835
Total of non-current liabilities	568 422	590 485
Current liabilities		
Trade and other payables	55 183	73 116
Liabilities to related parties	113	10 014
Interest-bearing loans	39 852	39 600
Funding	10 463	5 103
Retained sums for construction contracts	2 786	5 933
Deferred income	26	104
Short-term provisions	71 554	71 554
Payables for employee benefits	1 670	1 670
Income tax payables		5 414
Total of current liabilities	181 647	212 508
Total of liabilities	750 069	802 993
Total of liabilities and equity	2 091 782	2 038 905



**STATEMENT OF COMPREHENSIVE INCOME OF KOZLODUY NPP PLC
FOR YEAR ENDED JUNE 30, 2011**
(In thousands of BGN)

Description	Current period (H, 2011)	Previous period (H, 2010)
Profit from sales	412 413	358 379
Electricity sales revenue	410 916	357 068
Heat sales revenue	1 497	1 311
Revenue from funding	13 799	17 146
Revenue from sales of services, goods and other sales	6 094	5 716
Changes in inventories of finished goods and work in progress	3 583	15 409
Own work capitalized	1	49
Raw materials and consumables used	(87 218)	(78 608)
Expenses on hired services	(37 526)	(49 992)
Depreciation costs	(64 738)	(71 830)
Salaries and wages	(78 624)	(71 127)
Social insurance costs	(15 171)	(15 904)
Other costs	(44 903)	(38 829)
Financial income	3 296	1 743
Financial costs	(5 206)	(10 087)
Profit before tax	105 800	62 065
Tax expenses		
Profit/loss for the period	105 800	62 065



TRAINING



THE RESPONSIBILITY FOR THE PERSONNEL QUALIFICATION, TRAINING, AND RETRAINING PROCESS IS SHARED BETWEEN THE COMPANY STAFF AND MANAGEMENT.

Pursuant to the international standards and state regulations an orderly training and qualification system is applied at Kozloduy NPP. A Training Centre (TC) has been established and maintained. It provides modern conditions for specialized training and includes a Full-Scope Simulator (FSS) designed for WWER-1000 reactors and Multifunctional Simulator (MFS) designed for WWER-440 reactors.

LYUBOMIR PIRONKOV
HEAD OF TRAINING CENTRE

Kozloduy NPP is licensed by the BNRA for conducting specialized training on works performed at nuclear facilities and for conducting specialized training and issuing certificates of competence to perform activities with sources of ionizing radiation. Kozloduy NPP Training Centre is in charge of the compliance with the licence requirements and the complex training of the unlicensed personnel and contractors' personnel as well. Furthermore, the Training Centre conducts theoretical and practical researches in the area of training, as well as engineering tasks related to the simulators' modernization, operating events analysis, design modifications validation, technical decisions, and emergency procedures.

All Kozloduy NPP workers and employees as well as contractors' personnel working at the plant site, shall pass a mandatory specialized training to acquire, maintain, and improve their knowledge and skills related to the nuclear facilities' operation and maintenance. Based on the specifics of the work with nuclear facilities a part of the personnel – Main Control Room operators and reactor physicists – receive simulator training yearly.

Since the beginning of 2011 65 individual programmes for initial training, 275 individual programmes for continuous training, and more than 120 schedules

for different personnel groups have been developed. Based on the activities planned they cover different training forms and methods. As of 30th June more than 520 training courses were organized at the TC. They covered Process Systems and Equipment, Process Modes, Human Factor, Safety and Emergency Planning, Quality Control, Decommissioning and a lot of other areas. On the basis of those courses 43 000 man-hours of training were conducted. More than 16 000 man-hours – short-term one- and two-hour thematic classes are conducted at the work places in the plant. Simulator training of 7 366 man-hours have been conducted, 5 133 man-hours on FSS and 2 233 man-hours on MFS respectively. The Training Centre based on its long experience and huge amount of information, is a source of nuclear knowledge which is applicable beyond the subject of plant activity. Training of 242 people on 22 different topics was performed upon request of the external utilities and engineering organizations, and 2 379 people were trained on the access to the site of Kozloduy NPP. Following the implementation of the company's policy for cooperation with the educational system, a group and individual training was arranged for 347 students.

In order to maintain the training quality

in compliance with the international standards, the Training Centre takes part in various joint projects together with international organizations and recognized companies in the nuclear industry. During the first six months of 2011 the works under the project for modernization of the FSS were in progress through enhancement of the thermohydraulic model and reactor core model, as well as the works under the IAEA Analysis of the Risk of Nuclear Knowledge Loss Project. Kozloduy NPP backed up the idea for establishment of a Regional Centre for competencies in WWER technology within the framework of the EURATOM Programme. For that purpose a great number of preparations were made, an international consortium was formed, and all the required documents were developed. The proposal of the project referenced as CORONA has been approved by the European Commission and contracting is forthcoming.





HUMAN RESOURCES AND COMMUNICATIONS MANAGEMENT

PERSONNEL STRUCTURE

By 30th June 2011 the employees of Kozloduy NPP amounted to 4 181 people with an average age of 44 years and 6 months. The average age of the specialists with higher education is 40 years. The fact that there is a growing interest among the young people in working at the Plant is worth the attention – 50% of the newly employed personnel throughout the first half of the year is below the age of 30. 40.51% of the Plant employees have

higher education compared with 48% of the newly employed personnel throughout the six months of the year.

SOCIAL RESPONSIBILITY

Regarding the compliance of human rights and labour codes, responsibility for environmental protection, and achievement of transparency in the Company activities, the policy of Kozloduy NPP is in accordance with the principles of the United Nations Organization Initiative

entitled Global Compact.

Taking into account the fact that people are the most valuable asset, developed by the Company, Kozloduy NPP provides great care of its workers and employees. The employees are provided with an expanded social package which includes additional voluntary pension insurance, good quality medical services, possibility for recovery in health recreation centres, etc.



KOZLODUY NPP PLC IS AN ENTERPRISE WITH MORE THAN 4 000 EMPLOYEES, WHICH RANKS IT AMONG THE MAJOR EMPLOYERS IN BULGARIA.

The Human Resources Management Policy pursued by the Company Management is focused on encouraging professional and career advancement, supporting a system for incentives and motivation, and boosting the work efficiency. Keeping to the regulations, to the principles of safety culture, social responsibility, and professional ethics and considering the Company strategic priorities is the basis for that process.

STEFKA PETROVA

HEAD OF ADMINISTRATION AND CONTROL DIVISION

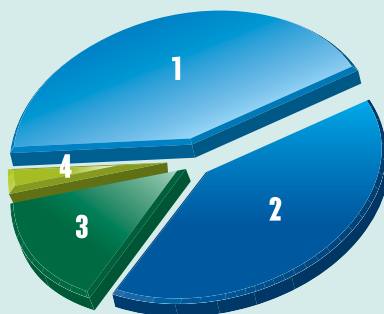
By means of its structural units such as Occupational Medical Centre, Ledenika Health and Recreation Centre, House of Culture, and Sports and Recreation Complex, the Company provides health prophylaxis, adequate recreation, varied cultural life and modern sports conditions for the Plant employees and their families. The continuous trend to reduce industrial injuries which are directly related to work activities is kept and it results in several times lower level of industrial injuries compared to the average indicators for the utility and the industry in the country as a whole.

The consistent attempts of the nuclear power plant management at providing health and safe working conditions were recognized on 28th April 2011. Kozloduy NPP PLC thereby was awarded the Prometeya prize which is conferred by the Confederation of the Independent Trade Unions in Bulgaria for its contribution to humanization of the working environment for improvement of the occupational health and safety. The rationale behind the award is that the Company Collective Labour Agreement includes provisions related to labour relations which are considerably more favourable compared with the regulatory ones and the plant Occupational Medical Centre has no analogy in the country.

The social responsibility as a part of Kozloduy NPP Policy is oriented not only towards its own personnel but a special attention is paid to the young people in the country. On 29th March 2011, for the third successive year, Kozloduy NPP took part in the Manager for a Day National Initiative organized by Junior Achievement Foundation, Bulgaria. Its objective was to help the young people with their choice of professional field for future realization using the impressions collected. Taking part in the initiative Kozloduy NPP



Educational structure of Kozloduy NPP employees



1	Higher education	40.51%
2	High vocational school education	41.89%
3	High school education	15.54%
4	Other	2.06%





proved once again that it reinforces the establishment of relationship between education and industry. The Company provides additional social benefits in compliance with the Company

Collective Labour Agreement as part of the Plant policy on motivation and keeping the personnel and as a result of the good current financial and economic situation of the Plant. Social costs are

determined in the Company Collective Labour Agreement as a percent of the allocated resources for the working salary and are completely provided by the revenues from the electricity sales in the free market since in the last few years the State Energy and Water Regulation Commission has not admitted these social costs as a price-formation element for the price of availability in the regulated electricity market. The recreation centres, sport and culture centres facilitate young families in bringing up their children by providing for the important perspectives for their advancement – music schools, dance classes, art and theatre schools, and sport and tourism clubs. Plant workers and their families use all social facilities at preferential prices and part of the services is available completely free of charge. The 2011 Meeting has also fully supported the social aspects of high priority for the company – maintenance and development of the facilities for



culture, sport and recreation as well as the plant workers' hostels. The resources voted allow for implementation of the required maintenance and investment measures aiming at ensuring high quality of the offered services.

All facilities are included in the Company Energy Efficiency Programme as the buildings shall be brought in compliance with the regulatory arrangements on energy efficiency in stages.

PUBLIC RELATIONS

Kozloduy NPP aim is to respond adequately to the interest manifested on behalf of the general public and media towards the nuclear power plant activities. For that purpose the Information Centre has been established where all the visits start from and where visitors have the opportunity to get printed materials and watch videos with information about the plant activities and where journalists may receive assistance in the preparation of their reports and interviews. Since the beginning of this year 102 representatives of regional, national, and foreign media have been given the opportunity to visit Kozloduy NPP site.

The plant practice of organizing visits for groups – children, pupils, students, etc. has also continued for the first six months of the year. By 30th June 2011, 851 people visited different facilities at the site of Kozloduy NPP including the 1000 MW Units 5 and 6, 440 MW Units,

Information Centre and Training Centre, Switchgear, etc. The friendly attitude and attention towards children has been repeatedly manifested. On 28th March, 20 children from the preparatory group and their teachers from Radost Nursery School of the town of Kozloduy visited the Information Centre. Their visit was related to the participation in the project entitled The Atomic Heart of Bulgaria is in My Town and the children learnt what a nuclear power plant is and how electricity is generated. On 1st June, the International Children's Day, Kozloduy NPP welcomed pupils of fourth grade at Prof. Dr Asen Zlatarov High School 7 of the town of Montana. The children came to learn about Kozloduy NPP operation and were given their primary school-leaving certificates at the plant site. 28 teachers and students from the Technical University of Sofia, the course in Electrical Power Generation and Electrical Equipment and 32 teachers and students from Paisii Hilendarski University of Plovdiv were among the people who visited the plant. For the second successive year a special Visit Day for plant employees and their families was held at Kozloduy NPP. On 30th April, 331 visitors from all age groups learnt more about the nuclear industry and the work of their relatives. During the first half of 2011 official visits at the nuclear power plant paid HE Philippe Autié the Ambassador of the Republic of France and HE James Warlick the

Ambassador of the USA, delegations from China and Turkey, Boyko Borisov the Prime Minister of Bulgaria, Traycho Traykov the Minister of Economy, Energy, and Tourism, and teachers from the Nuclear Power Plants Department at the Moscow Power Engineering Institute (Technical University).





KOZLODUY NPP PLC

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