



KOZLODUY NPP REVIEW

The English language bulletin of Kozloduy Nuclear Power Plant

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Minister Petar Dimitrov (left) talks to Mr Dimitar Angelov, Chief Engineer of Units 5 and 6.

Minister Petar Dimitrov visits Kozloduy NPP

On September 6, 2007 Mr Petar Dimitrov, Minister of Economy and Energy, visited Kozloduy NPP for the first time after his inauguration. He was accompanied by Mr Yordan Dimov, Deputy Minister and Chairman of Kozloduy NPP's Board of Directors. They had a working meeting with members of the top management and representatives

of the trade unions. During the talks, Mr Ivan Genov, Executive Director, made a presentation about Kozloduy NPP's economic status and technological features.

At the end of their visit, at a briefing with reporters, Mr Dimitrov said he was impressed with what he has seen. He pointed out the high quality of management he observed at Kozloduy NPP.

Seminar on international energy market

A two-day international seminar "Power and Emission Trading in Europe" took place in September at the Ledénika Recreational Complex. The seminar was organized by Statkraft South East Europe and Kozloduy NPP.

Statkraft South East Europe is a

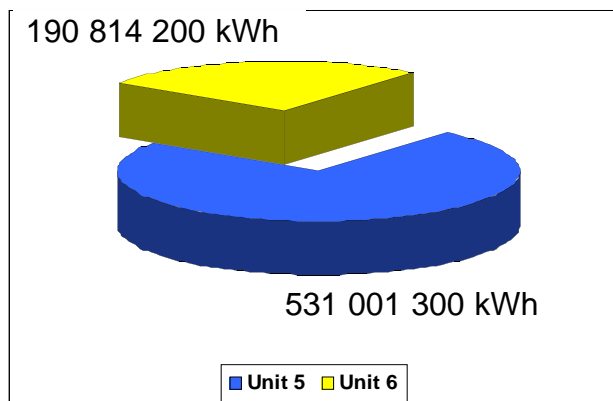
Norwegian power generation company which provides electricity from various sources (gas, water, renewables). It's also the co-founder of one of the most successful power exchanges, Nord Pool.

The Norwegian company has a Bulgarian branch in order to develop its

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Generation

September



Unit 6 in an annual outage since September 9, 2007.

Inspection of the International Insurance Pool at Kozloduy NPP

Representatives of the international insurance companies that jointly insure Kozloduy NPP under the Vienna Convention on Civil Liability for Nuclear Damage visited the plant on September 18-20. The purpose of the inspection was to evaluate the overall plant condition with regard to insurance risk. The team was led by Mr Bruce Kettle, technical manager at Nuclear Risk Insurers (GB). The team included Mr Paul Fox (American Nuclear Insurers), Mr Edgar Dressler (American Nuclear Insurers), and Mr Nicolas Jenner (Assuratome).

The inspectors carried out a general inspection of the Kozloduy NPP operation. Several spheres got particular attention during the inspection: fire risk management, risk of damages in case of earthquake, inspection of the tightness of the containment, collecting, storing and reprocessing of radioactive waste, and inspection of the decommissioning plan. On

Units 5 and 6, the team made an inspection of operation and inspection of the major equipment. Although Units 3 and 4 are now shut down, they were also subject of inspection.

The experts also reviewed the status of previously made recommendations to reduce risk. All the recommendations regarding fire risk were closed.

At the final meeting, the inspectors shared their generally good impression of the plant condition.

Kozloduy NPP was first insured under the Vienna Convention in 2001. Therefore, the first inspection by insurance experts was performed in June 2001. The second inspection took place in January 2003.

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Seminar on international energy market

trade relations in the Balkans as well as train specialists and provide information about European power markets.

Snezhana Yankova, a Kozloduy NPP market expert, opened the seminar. Experts from Kozloduy NPP, Statkraft South East Europe and other companies took part in the seminar. Participants exchanged views and experience on the mechanisms of the international power trade, specificity of power exchange, etc. Specialists made presentations on risk management in the power trade as well as presentation on trading with carbon dioxide emissions. The experts had debates on the power market in Bulgaria and on the future of the power markets in Europe.

General emergency drill at Kozloduy NPP



On October 18, 2007 Kozloduy NPP held a general emergency drill on the site. These types of drills are performed each year. This time, the scenario of the “emergency” included a fire in the Spent Fuel Storage Facility. According to the plan, the situation got more complicated as it evolved through four different stages: from alert to general emergency. The goal was to reach the worst possible situation in order to test the preparedness of the emergency teams. A new element was included in the drill: giving first aid to an injured person and transportation by helicopter. Coordination was achieved without fault – the helicopter landed just on time and the ‘injured’ person was quickly transported to the hospital.

The emergency drill also included the teams of the Kozloduy NPP’s Medical Department, the Regional Fire Brigade and Civil Protection, and the paramedical team of Kozloduy NPP. At the same time, in the Emergency Management Center the emergency response teams analyzed the situation and coordinated all the activities. They

Giving first aid to an “injured” person.

tested to what degree the new elements of the emergency plan were implemented.

The results of the drill were discussed in detail later on, and various conclusions were made regarding its efficiency. The preliminary conclusion is that the drill has achieved its purpose and all teams have performed their roles to the fullest extent.

[More on Emergency Planning -- pages 4-5](#)

Finnish nuclear specialists come to Kozloduy NPP

From September 26 to 29, twelve members of the Finnish Nuclear Society (FNS) visited Bulgaria at the invitation of the Youth Section of the Bulgarian Nuclear Society. During the visit, the Finnish specialists also came to Kozloduy NPP. They were welcomed by Mr Ruscho Yankov, Vice Chairman of the Bulgarian Nuclear Society. The guests had a walk-down on the site and visited control rooms of Units 2, 3 and 5.

Ms Harriet Kallio, President of the FNS, shared her impressions after the visit:

“I have to admit that I’m very impressed with Kozloduy NPP. During the walk-down we had numerous questions regarding safety and we received very informative answers from your specialists. Thank you!”

Experience

Emergency planning and emergency preparedness



Nuclear plants have proven their operational reliability and safety in the course of 50 years. Despite the low probability of emergency situations, all the possible measures are taken to ensure the least possible impact in case of emergency. To make this possible, analyses are performed in the design process to envisage possible design basis accidents and plan the scope of technical measures to prevent radiation exposure above the allowable limits and environmental contamination. Also, a possibility is envisaged for the occurrence of low-probability equipment failures that might result into beyond the design basis accidents. In such a case, the existing technical protective devices for containment of the radioactive products may prove insufficient.

Therefore, protection of personnel and protection of the population is provided by the so called emergency plan.

The International Atomic Energy Agency has postulated in documents that each country operating nuclear plants must prepare a national emergency plan as well as an emergency plan for the operating organization.

All the protective measures for the pop-

ulation and the environment are described in detail in the national emergency plan of Bulgaria. The emergency plan of Kozloduy NPP provides an action plan for the plant.

After the Chernobyl accident in 1986, when the whole world reformulated the requirements to nuclear industry, the Bulgarian government together with Kozloduy NPP's specialists developed a new emergency plan. The now existing plan was written in 1998 by Kozloduy NPP's experts and has undergone four revisions so far. The last version was approved on August 15 and came into effect on August 17, 2007.

In order to inform the employees of Kozloduy NPP, the document was published on the local computer network (Intranet) and the newly implemented changes were highlighted.

Organization of emergency planning

The Regulations for the Structure and the Operation of Kozloduy NPP read that the overall organization of emergency planning is carried out by the Quality and Safety Directorate, namely by the Emergency Planning Department.

The management and the experts make constant efforts to perfect the emergency planning organization and assure high level of emergency response preparedness. This is achieved through maintaining a set of emergency response equipment. Emergency duty schedule is prepared and all the emergency instructions and procedures are updated on a regular basis. Each year, the emergency response plan is being reviewed and updated. The

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Emergency planning and emergency preparedness

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new modifications reflect newly approved or amended normative documents, recommendations by the Nuclear Regulatory Agency, etc. Also, while updating the plan, experts take into account corrective measures to overcome shortcomings that have been discovered in previous emergency drills.

The Emergency Planning Department prepares amendments to the Emergency Plan while taking into account recommendations made by other Kozloduy NPP departments. All the updates are reviewed for compliance with all the national documents related to emergency planning and emergency preparedness as well as with company documents. Finally, Kozloduy NPP's executive director approves the document.

Kozloduy NPP's emergency plan

The Kozloduy NPP's emergency plan was written in line with the Convention on Early Notification of Nuclear Accident, the Nuclear Safety Convention, the Safe Use of Nuclear Energy Act and other relevant documents.

The main goal of the emergency plan is to set up an organization different from regular operation, and to determine activities in case of: beyond the design basis accidents; events and design basis accidents that might result in a beyond design development of an accident; extraordinary events related to human activities outside the plant site; disasters, fires, etc.

The organization envisaged in the emergency plan guarantees permanent preparedness of personnel for immediate

actions in case of accident, and guarantees maximum efficiency of accident management and measures for protection of Kozloduy NPP's staff, the public and the environment.

The document describes the way of organizing the emergency response structures, immediate actions for protection of personnel, the public and the environment, measures for protection of equipment on the site, interaction with other state authorities.

The plan is mandatory for Kozloduy NPP's staff and for personnel of other companies on the site. According to its characteristics, the emergency plan is an open system that includes a procedure for regular updating and amending.

The plan covers several different emergency classes: general emergency, site area emergency and alert. They are classified in line with the IAEA's Method for the development of emergency response preparedness for nuclear or radiological accidents (TECDOC-953) and the Regulations for emergency planning and emergency preparedness. If emergency is declared at the plant, an emergency organization should be implemented at three levels. Its efficiency is based on a previously set emergency duty of KNPP personnel. This is described in a special instruction thus assuring easy assembling of emergency teams.

The person in charge is the head of the emergency activities. He leads the group for management of emergency activities. This group is in charge with coordination of emergency activities and rescue operation. Team 1 carries out mainly activities on the plant site while team 2 carries out activities regarding radiation monitoring, assessing radiological impact and undertaking measures for protection of the public.

WANO

WANO Biennial General Meeting



Dr Shreyans K. Jain - the newly elected president of WANO

On September 24 and 25 in Chicago took place the 9th Biennial General Meeting of the World Association of Nuclear Operators (WANO). The theme of the 2007 BGM was 'Closing the Gap - turning today's promise into tomorrow's reality'. It gathered about 400 senior nuclear executives and decision-makers from across the world. Kozloduy NPP was represented by its deputy executive director Kiril Nikolov. During the assembly, programs were discussed that will be implemented in the future in order to further enhance nuclear plants safety.

In his address to the participants William Cavanaugh III, WANO Chairman, pointed out the well-developed cooperation between nuclear plants and the good results regarding safety indicators due to the increasing number of peer reviews and support missions. "Worldwide cooperation among stations is better than ever, and this is also true for safety performance," he said. In his speech, Mr Cavanaugh paid attention to the rising electricity demand which will eventually lead to a larger number of countries utilizing nuclear energy.

"Meeting the unprecedented demands of

the nuclear renaissance", he said, "will require operators not only to take on their individual responsibility to guarantee the safety of their own fleet, but also to assume a collective responsibility to work together to continually upgrade the safety of operating nuclear power stations worldwide. The public demands no less from us."

During the meetings, a new WANO president was elected, Dr Shreyans K. Jain, director of Nuclear Power Corporation of India, Ltd. He will succeed Oliver D. Kingsley Jr as president of WANO.



Also...

Kozloduy NPP is among the founding members of WANO which was established in 1989. The major goal of the organization is to improve safety at every nuclear plant in the world.



Specialists from the International Programs Department get trained

New software facilitates translation

The use of the so called computer-assisted translation has become a largely spread practice in the European Union. SDL TRADOS is chosen officially in the EU institutions as a software product which facilitates translation.

The software allows for translation in an unlimited number of languages in a corporate network. Special translation memories are generated for various projects. The users of the system might be granted special rights to modify certain databases. Several teams may use common memories while working on projects. Also, the users of the system have the possibility to keep track of all the projects by using a Synergy client.

As a modern company, Kozloduy NPP works with documents in several languages. Therefore, the plant implemented this new software to facilitate the translation process. After the tender was closed, a company was selected to deliver SDL

TRADOS and provide relevant training of Kozloduy NPP specialists. Initial training took place in October and included specialists from the International Programs Department. It is envisaged to organize an advanced training in six months.

The translators of Kozloduy NPP expressed their satisfaction with the new software following the training. They said work was optimized and efficiency was higher.

Symposium in Varna

From September 17 to 19, 2007 the Frederic Joliot Curie International House of Scientists in Varna hosted a symposium on instrumental analytical spectrometry and chromatography. Lecturers from the Netherlands, Germany, Great Britain and Australia took part in this event. Kozloduy NPP was represented by specialists from Engineering Chemistry, Water Chemistry and Equipment, Physical and Chemical Control, and other departments.

Specialists from Kozloduy NPP have at their disposal state-of-the-art spectrometry and chromatography equipment that meets contemporary requirements for application of verified and validated methods to assure reliability and accuracy of measurements. Atomic emission spectrometers are used to monitor physical and chemical parameters of coolant in secondary circuit. The chromatography equipment is used to determine very low levels of anions in process water of Kozloduy NPP. High quality analytical control of equipment guarantees its extended lifetime and safe operation.

In brief

Young specialists see bright career prospects at KNPP

In the last several years, a new generation of specialists has begun their career at Kozloduy NPP. They are convinced they will certainly find their place among nuclear operators. Before this is accomplished, they need to take several positions at the plant, and finally they need to pass licensing exams at the Nuclear Regulatory Agency (NRA). At present, about 20 young professionals are on their way of becoming operators.



Ivan Mladenov

I came here two years ago. My family lives in Sofia but I hope they will soon move to Kozloduy. I graduated from the Sofia Technical University with a degree in Thermal and Nuclear Power

Generation. Therefore, Kozloduy NPP is the only place in Bulgaria I can find a relevant job. I came to this conclusion after three years of experience at other companies.



Stiliana Mladenova

It was a short while ago that I moved to the third stage of my training. Before that, I was trained for the same position at the 440 MW Units but, unfortunately, due to their closure, I had to move. I like the job

because I consider myself useful in the whole process. A process that gives tangible results. For me, the biggest challenge is to prove myself to my colleagues who are always somewhat skepti-

cal at the beginning. They help me a lot. I can see my career in front of the panels in the control room and I like this. I tried to work in the field of analyses but it turned out I didn't quite enjoy this type of work. The feeling of being part of a real process is much different and brings more satisfaction.



On October 13, 2007 Kozloduy NPP held its second Open Doors Day this year. This brought 416 people to the plant who had walk-downs to the control rooms and the turbine halls of Units 3, 4 and 5. The visitors were accompanied by Kozloduy NPP experts who answered various questions regarding nuclear facilities.

KOZLODUY NPP REVIEW

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