

INES 2 ACCIDENT AT KOZLODUY

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<https://www.wiseinternational.org/nuclear-monitor/647/ines-2-accident-kozloduy>

(June 30, 2006) On March 1, block 5 of the Kozloduy NPP in North Bulgaria experienced what is arguably its largest incident to date. Out of the 60 regulation (or control) rods in the reactor, 22 did not appear to be functioning. This means that in the case of an emergency shutdown with loss of cooling water, it would not have been possible to stop the reactor quickly, which could have led to a meltdown.

(647.5754) WISE Brno - The incident only became public knowledge almost two months later, after whistleblowers released information to Austria and Germany and the incident's subsequent upgrade from (International Nuclear Event Scale) INES 0 to INES 2.

The Kozloduy director, Ivan Ivanov, was fired from his position four months after the incident and Bulgarian Economy and Energy Minister Ovcharov has also come under attack from environmental groups that accuse him of exaggerating international support for the Belene nuclear power plant project.

Kozloduy incident

The definitive account of the events of March 1 at Kozloduy's 5 VVER 1000/320 reactor was given by Georgi Kaschtschiev, who formerly held the posts of director at Kozloduy and director of Bulgaria's Nuclear Regulation Office and who currently works as a researcher at the Institute for Risk Analysis in Vienna.

On April 23 Kaschtschiev told the German daily Tagesspiegel that operators had tried to activate one cluster of regulation rods to reduce the reactor's capacity by 30% after one of its four main cooling pumps became disconnected. (1) Of the six rods in the cluster, three remained in place. In order to run down the reactor, workers pumped boric acid in to prevent a chain reaction. After the reactor was stabilised, the remaining nine clusters were tested by carrying out an emergency shutdown resulting in a total 22 of the 60 regulation rods remaining stuck in the highest position. * Kaschtschiev compared the situation to driving a car at full throttle without functioning brakes.

This situation was made possible after the Russian maintenance company Hydropress made changes to the fuel lay-out during one of the safety upgrades at Kozloduy block 5 in the summer of 2005 - an upgrade programme was partially funded with money from Euratom. The plan was to perform the same upgrade on the other Bulgarian VVER 1000 reactor, Kozloduy 6, this summer. The Bulgarian press has speculated that Hydropress failed to test the new layout and the functionality of the regulation rods because it had already tested a similar upgrade in Russia. These claims were subsequently denied by the Bulgarian Nuclear Regulatory Agency in an interview with the Platts publication Nucleonics Week (2).

Kozloduy 5 remained off-line for ten days following the incident, which was rated at INES 0 by its operator. Information released to the press did not reveal the true gravity of the incident and thus was completely ignored by the Bulgarian press. It was not until whistleblowers from the power station leaked the details to their former chief Kaschtschiev in Vienna and he in turn informed the German press almost two months later, that Bulgaria became aware of the real circumstances behind the incident.

The Bulgarian Nuclear Regulation Agency immediately reacted to the revelations by upgrading the incident rating to INES 1. Kozloduy's then-director Ivan Ivanov, gave an interview to the daily Trud, while apparently intoxicated, in which he accused the Bulgarian press of being un-patriotic for sourcing information on the incident from the German press. He made several incredible statements during the furore actually denying the facts, "What accident? There is no accident, boy! There is no real situation". Ivanov also told reporters that, "Things like this happen every day in the power station" and "You can write we have said it. Write: Ivan Ivanov is a criminal. He does not understand anything." (3)

The commemoration of Chernobyl in Sofia - two exhibitions by Dutch photographer Robert Knoth and a night vigil held by activists from Za Zemiata, Bankwatch, Greenpeace, Ekoglasnost, the Foundation for Environmental Justice and other members of the BeleNE! Coalition in front of Bulgaria's Economy and Energy Ministry - drew a lot of media attention that further whipped up the debate around the Kozloduy incident. Economy Minister Ovcharov tried his best to duck critical questions and seemed to back up Ivanov's smear campaign against Kaschtschiev by describing him as a non-expert. Nevertheless, Kaschtschiev's version of events could not be denied and following a vacuous press conference held at the Ministry of Energy and Economy on May 3, the credibility of the authorities amongst Bulgarian journalists reached rock-bottom and the Bulgarian regulator found itself exposed and forced to upgrade the incident rating to INES 2. (4)

The reactor was finally shut down for repairs on June 17 and will remain off-line until early September. (5)

In the mean time, Ivanov's position as director of Kozloduy became untenable although he did attempt to rescue his post and reputation by offering an official apology for his previous Trud interview in the same newspaper on May 4. The subsequent weeks saw Bulgaria heavily criticised by the European Union for its failure to dismantle Kozloduy blocks 1 and 2, which were closed in 2002. This censure, coupled with the March 1 incident, forced Economy Minister Ovcharov to dismiss Ivanov on June 6 (6).

Minister misleads

Environmental organisations united in the BeleNE! Coalition, along with Greenpeace and the German bank-watching group urgewald, have accused the Economy and Energy Minister Ovcharov of attempting to save the Belene NPP project through deception.

The country plans to build another two VVER 1000 reactors 150 kilometres downstream of the Danube and near the towns of Belene and Svishtov, which lost 200 people in a 1977 earthquake. In recent months, Ovcharov claimed that he had secured financing for the project from, amongst others, four German banks - Bayerische Landesbank, Deutsche Bank, Commerzbank and HVB. When Bayerische Landesbank denied having an interest in the project (7), Ovcharov, in a rather amazing about-turn, then claimed that the bank had never been contacted. In the following weeks, Commerzbank told its shareholders meeting that it would not finance any NPP project that could not meet the highest global standards. That explicitly included nuclear plants in seismically active zones like Belene. HVB and Deutsche Bank told their shareholders meetings that high safety and environmental standards would need to be met before either would be willing to provide financing for Belene.

Petko Kovatchev of CEE Bankwatch concluded, "If these banks are serious about what they say, Belene does not stand a chance." Heffa Schücking of urgewald announced that a coalition of NGOs would also address other reportedly interested banks like UniCredit Group of Italia and CitiGroup of the United States to discourage involvement with the project.

On several occasions over the last months, Ovcharov had been reported in the Bulgarian press as stating that Belene would get a loan - an amount of 300 million Euros - from Euratom. However, Euratom itself denies having any formal or informal contact with the Bulgarian government since an exchange of innocuous letters at the end of 2004. Ovcharov also claimed to have the support of IAEA president Mohamed ElBaradei but public relations officials at the IAEA PR strongly denied this when questioned by Bankwatch and said that ElBaradei would never have supported the Belene project.

*Regulation or control rods absorb neutrons and regulate the rate of fission reaction. Moving the rods in and out of the reactor allows operators to regulate the capacity. In case of an emergency shutdown or scram, the electro-magnets on which the regulation rods hang are released so that the rods can fall freely into the reactor thus directly stopping the chain reaction. Should the rods not function, operators have two options for running the reactor down - either boric acid is pumped into the cooling water or the installed sprinkler system is used to flood the entire reactor with a boric acid solution.

Sources:

(1) Der Tagesspiegel, April 23 2006, "Schwere Panne in bulgarischem Kernkraftwerk"

(2) Nucleonics Week, Volume 47 / Number 18 / May 4, 2006, "Regulators reviewing sticking of Kozloduy-5 control rod drives"

(3) Trud, May 1 2006, "You can write: there are idiots in the NPP"

(4) Nucleonics Week, Volume 47; Sofia Echo, May 9 2006, "Debates in Bulgaria on the Re-Opening of Kozlodui NPP's Fifth Block"

(5) Sofia News Agency, June 17 2006, "Bulgaria Shuts Nuclear Reactor for Repair"

(6) AFP, June 6 2006, "Bulgarian Energy Minister Fires Nuclear Power Plant Boss"

(7) UPI, May 2 2006, "Bank halts financing of Bulgarian plant"

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Kozloduy closure plan unveiled

Executives at the Kozloduy nuclear power plant have presented a strategy for the closure and dismantling of the first four reactors at the site. The proposal would need to be approved by officials at Bulgaria's Nuclear Regulatory Agency and the Ministry of Energy and Economy before it could be implemented.

The strategy reportedly includes a detailed plan that specifies deadlines as well as the estimated cost of closing and dismantling the reactors. The owners of the plant are expected to fund the majority of the work but the project could also receive funds from the European Commission.

A special team of inspectors will now assess which parts of the reactors are not radioactive and can thus be sold on to other Bulgarian power plants. The radioactive waste would be disposed of at a specially built facility near the site, which is located in a region of seismic activity.

Sofia Echo, June 29 2006

Bulgaria PM plans to restart second atomic power project

May 15, 2018

<https://www.euractiv.com/section/energy/news/bulgaria-prime-minister-plans-to-restart-second-nuclear-power-plant-project/>

Six years after freezing the construction of a second nuclear power plant, Bulgarian Prime Minister Boyko Borissov announced on Saturday (12 May) he intends to restart the project. Chinese investors have already expressed interest.

Bulgaria, which joined the European Union in 2007, has closed four 440 megawatt Soviet-era reactors at the Kozloduy nuclear plant for safety reasons as part of its accession treaty with Brussels.

Kozloduy currently operates two 1,000 MW reactors. Support for nuclear energy is high in Bulgaria and has enabled talk about a second nuclear power plant at Belene to gather momentum.

Breathing life back into the project will be possible after parliament removes a moratorium on construction imposed in 2012.

As Borissov's ruling party GERB commands a comfortable majority, together with junior partner the United Patriots, this should not be a problem. The opposition socialists also support nuclear energy.

Chinese interest

Borissov announced his intentions on Saturday, a day after the China National Nuclear Corporation (CNNC) confirmed its interest in implementing the project. The first indications of its interest date back to 2016.

China eyes nuclear project in Bulgaria

A delegation from the China National Nuclear Corporation (CNNC), the country's largest state energy company, visited Sofia and met with Bulgarian Prime Minister Boyko Borissov, to possibly resuscitate a shelved nuclear power plant project.

To balance geostrategic interests, Bulgaria will also invite French nuclear company Framatom to participate, while Russian nuclear company Atomstroyexport will help in the construction of the reactor.

So far, Bulgaria has not decided if the project will be implemented entirely with private capital, without state guarantees and without long-term contracts for the purchase of electricity.

Key facts

The Belene NPP project was launched in 1981 by decision of the Bulgarian Communist Party, and a "Skoda" reactor was bought. Immediately after the 1989 changes, the project was frozen but the nuclear plant site was preserved.

Nearly 30 years later, the Czech reactor was sold in Russia for about \$200 million because it was considered obsolete in more ways than one.

In 2002, the Simeon Saxe-Coburg Gotha-led government decided to unfreeze the project. Bulgaria

commissioned Atomstroyexport in 2008 to produce a new reactor with a capacity of 2,000 MW.

But Borissov's first GERB-led government imposed a new moratorium on the project in 2012, arguing that it was unprofitable for Bulgaria.

Bulgaria drops nuclear power plant plans

Bulgaria has abandoned plans to build its second nuclear power plant based on Russian technology, an official announced today (28 March). Dnevnik, the EURACTIV partner in Bulgaria, reports.

In 2013, a referendum on the development of nuclear energy in Bulgaria was held at the initiative of BSP. Almost two-thirds of Bulgarians voted in support of nuclear energy but the referendum was not considered binding because of low turnout.

In 2016, Atomstroyexport won a lawsuit against Bulgaria at an international arbitration tribunal and Sofia was obliged to pay €620 million for the nuclear reactor vessel. The Bulgarian authorities therefore got a reactor vessel without any real idea what to do with it.

Since the unfreezing of the project in 2002, Belene NPP has cost Bulgarian taxpayers €1.5 billion. The completed plant will cost at least €10 billion.

Belgium pledges to ditch nuclear power by 2025

On Friday (30 March), the Belgian government approved a new energy pact that will see the country phase out atomic power between 2022 and 2025.

The cost of electricity is calculated at between €80 and €90 per megawatt hour. For comparison, the cost of electricity from the currently operating Kozloduy NPP is about €30 per megawatt hour. The Bulgarian authorities have yet to provide a convincing explanation for why a new nuclear power plant is needed.

The chairman of the national energy regulator, Ivan Ivanov, also questioned the high price of electricity. He pointed out that the production of 1MW hours of energy from photovoltaic power plants in the US costs \$50, and for wind farms the price is \$40.

Moreover, he said, the price of electricity from renewable sources was constantly decreasing while the price of nuclear electricity was increasing.

Sun sets on nuclear as solar capacity catches up with atomic power

Solar photovoltaic capacity (PV) will soon match and even overtake nuclear energy's global capacity, according to new US research. High demand means PV could even become the globe's dominant energy source by 2050.

Scandals

Belene NPP is one of the most scandalous projects in Bulgaria's latest history. In October 2016, the Prosecutor's Office filed charges against four high-ranking officials for alleged crimes under the Belene NPP project.

Former GERB energy minister and current MP Delyan Dobrev was accused of ignoring the Belene NPP moratorium and continuing payments to the participants in the project.

The former executive directors of the National Electric Company, Lyubomir Velkov and Mardik Papazyan, were accused of having caused prejudice to the amount of €77 million with the sale of the old Skoda reactor.

Former minister of economy, energy and tourism from the Bulgarian Socialist Party, Petar Dimitrov, was also accused of not exercising control over the leadership of the National Electric Company. However, there is no development in either of these cases.

In 2012, Prime Minister Borissov ironically referred to the Belene site as “a swamp”. It remains unclear why six years later the swamp became a “strategic project”.

Belarus: Atomic power on the EU's doorstep

A nuclear power plant on the EU's border with Belarus continues to court controversy due to a number of incidents during its construction and serious concerns raised by neighbouring countries. EURACTIV.com visited the ex-Soviet nation in October to learn more.

New plans

Energy minister Temenujka Petkova promises to present the possible options for Belene NPP within a few days to the National Assembly. Parliament is expected to give the government a mandate to privatise the project or attract a strategic investor.

Bulgaria will have no problem with the European Commission because the project has already passed the necessary procedures and the site is licensed.

Petkova explained that one of the options for the construction of the plant is the financial model of Hungarian NPP Paks II - where Russia is providing most of the funding with the approval of Brussels.

The loan will then be returned from the plant's operations. In the case of Belene, the problem is Bulgaria's reluctance to give state guarantees.

2018 start for expansion of Russia-backed Hungarian nuclear plant

Work on the Russian-financed expansion of a Hungarian nuclear plant will begin in January, Hungary's foreign minister said Monday (29 August) after talks in Budapest between Prime Minister Viktor Orbán and Russian President Vladimir Putin.

The chairman of the Bulgarian Energy and Mining Forum, Ivan Hinovski, explained that the CNNC wanted to participate in the project with its technology.

“According to my information, the Chinese are planning an expansion to sell electricity to EU countries, and this is based on their reactors, which are much cheaper than the Russian ones,” Hinovski said.

He added the Chinese company would buy the Belene equipment and would also build two or four reactors based on their technology there. However, this has not been officially confirmed so far.

Bulgaria nuclear reactor in temporary shutdown

Thursday, 01 Aug 2019 7:49 PM MYT

<https://www.thestar.com.my/news/world/2019/08/01/bulgaria-nuclear-reactor-in-temporary-shutdown>

SOFIA (Reuters) - Bulgarian nuclear power plant Kozloduy has shut down one of its two 1,000 megawatt (MW) units after a protection system was activated at the unit's generator, a plant spokeswoman said.

The plant's other 1,000 MW unit is working at full capacity, the operator said in a statement, adding that there is no danger of any radioactive contamination.

The unit is expected to be switched back on in three hours.

(Reporting by Tsvetelia Tsoleva; Editing by David Goodman)

Read more at

<https://www.thestar.com.my/news/world/2019/08/01/bulgaria-nuclear-reactor-in-temporary-shutdown#hwjVrLzaQ3gkMOck.99>

Bulgaria obtained the approval for Kozloduy 5 reactor extension

07/11/2017 12:43

<https://www.energymarketprice.com/energy-news/bulgaria-obtained-the-approval-for-kozloduy-5-reactor-extension>

Unit 5 of the Kozloduy nuclear power plant received the operating license for 10-year extension from Bulgaria's Nuclear Regulatory Agency. The act was officially presented by NRA chairman Lachezar Kostov to power plant executive director Ivan Andreev.

The Kozloduy hub consists of two VVER-1000 water reactors, designed by Russians, and licensed to 2017 and 2019. After the extension of Unit 5, the NRA declared that this is the first time when Bulgaria had allowed the continuous operation of a nuclear power unit beyond the expiration of its original operating license, but said it is restricted to 10 years under the national legal acts.

The plan to extend reactors 5 and 6 was commenced in April 2012 when Kozloduy NPP inked an accord with a conglomerate of Rosenergoatom and EDF. Afterwards, the parties signed an agreement to renew turbine reactor of unit 6 by installing new stator. The work was finalized in November 2015.

In October 2014, an accord for reconstruction and life extension of unit five was inked with three firms: Rosenergoatom, Rusatom Services and EDF.

A €24.7 million (\$28.6 million) deal was signed in October 2015 with Rosatom aiming to upgrade turbine reactor by May 2018.

Bulgaria's government commits to reactors operational life extension and increase to 104% of their capacity.

Bulgaria opens plasma melting plant at Kozloduy nuclear power site

POWERNUCLEARWASTE MANAGEMENT

By NS Energy Staff Writer 11 Jul 2018

<https://www.nsenergybusiness.com/news/bulgaria-opens-plasma-melting-plant/>

Bulgaria has commissioned a new plasma melting plant at the site of the Kozloduy nuclear power plant in Bulgaria, for treatment and disposal of radioactive waste.

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Image: The Kozloduy nuclear site in Bulgaria. Photo: courtesy of The European Bank for Reconstruction and Development.

The €31m plasma melting plant uses plasma technology to significantly reduce the volume of low- and intermediate-level radioactive waste generated from the Kozloduy VVER-440 reactors 1 to 4 which were closed between 2002 and 2006, and reactors 5 and 6 which currently in operation.

Commissioning of the new facility, which has a capacity of up to 250 tons per year, follows completion of successful operational testing.

The power plant's units 1 to 4 are being decommissioned with the support of the international donor community led by the European Union through European Bank for Reconstruction and Development (EBRD)-managed Kozloduy International Decommissioning Support Fund (KIDSF).

EBRD said in a statement: "The fund finances and co-finances decommissioning projects in Kozloduy and projects to reform and modernise the supply and demand side of energy use in Bulgaria."

The fund has provided 65% of the financing for the plasma plant while the remaining was provided by the Bulgarian government.

Designed for treatment of waste with a reduced radioactive contamination risk, the plasma technology involves melting and oxidizing metals.

The concrete debris, sand, inorganic granulates, insulation material and asbestos are melted and transformed into a chemically inert and amorphous glassy slag.

The next stage involves vaporization of the liquids and organic materials so the final product is organics-free. The final waste also complies with strict quality and stability requirements for long-term storage or final disposal.

The plasma plant is jointly owned by Spain's Iberdrola Ingeniería y Construcción and Belgium's Belgoprocess, and will be operated by the State Enterprise Radioactive Waste (SERAW) entity.

SERAW is responsible for the decommissioning of Kozloduy units 1 to 4 and the national radioactive waste disposal facility.

Bulgaria is also constructing a new national radioactive waste repository, which is planned to be commissioned in 2021.

The Incident at Kozloduy NPP on 3.7.2019

and the Lack of Transparency in the Bulgarian Nuclear Energy

19 August 2019

<http://www.nuclear-transparency-watch.eu/activities/transparency-and-public-participation/the-incident-at-kozloduy-npp-on-3-7-2019-and-the-lack-of-transparency-in-the-bulgarian-nuclear-energy.html>

Dr. Petar Kardjilov, a qualified expert at NTW

The lack of transparency in Bulgarian nuclear power industry has remained constant since the Chernobyl disaster. In Bulgaria there was no official announcement until the third day of the catastrophe of Lenin NPP reactor 4 and the state media were silent. When the government finally communicated news of the accident it was presented as limited and not particularly dangerous. Emphasis was placed on the fact that there was absolutely no danger to Bulgaria, although the radioactive cloud reached the country within a few days. The situation has not changed much since the totalitarian era.

The 2019 media freedom ranking of Reporters without Borders Bulgaria for the second consecutive year remains at a terrifying 111th place – last place in the European Union and the Balkans. Key obstacles for journalists are an inefficient justice system and corruption. One of the most prominent indications of this situation is the manner of informing the public and considering issues in the field of nuclear energy. Government and opposition politicians compete with one another each week in the televised promotion of Bulgarian nuclear power plant construction needs (with old Russian reactors and in the seismic area of the Vranča fault) in the Belene district on the Danube. Yet information about the problems, risks and incidents that have occurred at the existing Kozloduy NPP barely break through in the most influential media and are factually complete and correct in only a few independent Internet news media. The last incident in Unit 6 of Kozloduy NPP on Wednesday 3rd July was yet another case of concealing information in this area.

The following message appeared on the web page of Kozloduy NPP on 3rd July: “On 3rd July, 2019 at 1:50 pm the Sixth Kozloduy NPP Unit was disconnected from the country’s energy system after the electric protection was activated. All systems of the block have worked according to the design algorithms. At the moment the Nuclear Power Plant teams remove the causes of electrical protection activation. Once the equipment is operational, Unit 6 will again become part of the power system.” However, no such message was uploaded on the Energy Ministry website neither was it published on the Nuclear Regulatory Agency website. However the head of the Nuclear Regulatory Agency, Lachezar Kostov said in an interview for Reuters the same afternoon: “The shutdown was triggered because of an anomaly in the second circuit – the power generation equipment and not due to a fault in the plant’s nuclear reactor. There was no danger of any radioactive contamination”.

All of evening television news networks on television channels broadcasted only a brief interview with the Energy Minister Temenujka Petkova, who assured the public that everything was fine and that her colleagues from the Kozloduy NPP had acted quickly, correctly and professionally. Only the private national television station bTV invited the former chairman of the Nuclear Regulatory Agency and current independent expert on nuclear energy Prof. Georgi Kaschiev to comment the day after the incident.

According to Prof. Kaschiev the technical cause of the incident is the loosening of a signal cable in one of the terminals. This resulted in a short circuit that activated the mechanism for electrical protection

of the generator and shut down the entire generator. He reported that there were at least five similar incidents in Unit 6 in 2005, 2011, 2012, 2015 and 2017 stating that such incidents are far from harmless and their accumulation is a serious alarm for professionals. Prof. Kaschiev explained that a huge flow of energy moves from the reactor, which is transformed into steam, the steam rotates the turbine and the mechanical energy of rotation in the generator turns into electricity. When you put a plug at the end of this stream the system may break. Therefore, the turbine is immediately shut down automatically, the reactor power is reduced as a group of drivers is thrown straight into it and others move downwards with a working speed. In this case, it is good that they have not lost the vacuum in the condensers. They can take up to 40% of the nominal steam flow, not through the turbine but through the condensers, so they have to reduce the reactor power to 40%. This process is very heavy. It happens within seconds with great changes in temperature and pressure. The reduction in reactor power is delayed by a few seconds, and there is a huge amount of energy in the primary circuit. As a general rule, the pressure in the secondary circuit is increased and protective devices are activated which release steam into the atmosphere. This creates a sound that is heard for kilometers, said Kaschiev and added:

“This is a thermal shock to the equipment and, if there are any defects, they are generally expanding, new ones may emerge. The number of such modes is limited over the lifetime of the reactor. Each such regime consumes a part of this resource. The power must be increased by 1% for one hour, and in this mode it drops from 100% to 40% within a few seconds. So from this point of view incidents like this are definitely undesirable. For example, for nuclear fuel tablets (fuel pins) at nominal power the average temperature is 1200 degrees or more. In the event of a sharp fall in the temperature, cracks in the tablets may occur. The fuel tablets are the first barrier, they retain the radioactive fission products. However, under such conditions gaseous products such as crypton, xenon, iodine are released out of them and accumulate under the shells, and if there are cracks in the shells, gas can go out of the coolant.”

In 2016, a five-member panel of the Supreme Administrative Court decided that the lifetime of the Kozloduy NPP units 5 and 6 could be extended without environmental impact assessments (EIA). The Court's decision was taken despite the firm position of many organizations, citizens and two Romanian ministers that a full EIA should be carried out to extend the operation of the old reactors. On November 6, the National Regulator Agency issued a license to extend Unit 5 operation for 10 years, ignoring 11 problems identified by the IAEA Pre-SALTO mission in their nuclear safety assessment of both units. In their report, Pre-SALTO experts state there are 11 problems concerning “fundamental areas for improvement in the future”. This subject had a plausible representation in Bulgaria only by two news media on the Internet.

A second joint meeting between Romanian and Bulgarian experts, citizens, NGOs and representatives of the Bulgarian State Enterprise for Radioactive Waste occurred in Craiova, Romania on 17 July. The meeting was conducted as a part of the Project Complaint Mechanism (PCM) on behalf of the European Bank for Reconstruction and Development. The PCM was triggered by the civil society of Craiova and Dolj District due to the Bulgarian project to build a National Repository for low and intermediate-active short and long-lived radioactive waste on the site of Kozloduy NPP, only four kilometers away from the Danube and the border with Romania. Funding is administered by the EBRD and is within the Kozloduy NPP Units 1-4 Decommissioning Programme and the National Disposal Facility. There is also a media blackout in Bulgaria about number of violations of national and international law and the IAEA recommendations concerning the National repository. Representatives of Romanian and Bulgarian civil society have decided to send a letter of complaint to the donor countries, the European Commission and the EBRD on Monday 29 July. We will inform about the contents of the letter and the problems with the National Radioactive Waste Repository in Bulgaria in a subsequent article.

Petar Kardjilov obtained a PhD in Public Communications and Information Sciences at Sofia and specializes in risk and crisis communication. He is also a public relations expert, member of the Union of Scientists in Bulgaria and Nuclear Transparency Watch.

Bulgaria's Kozloduy 6 to operate until 2051

1 August 2018

<https://www.neimagazine.com/news/newsbulgarias-kozloduy-6-to-operate-until-2051-6271568>

Unit six of Bulgaria's Kozloduy nuclear plant will operate until 2051 after Russia's Rosatom Service (part of state nuclear corporation Rosatom) completed work to assess a life extension to 60 years, Bulgaria's Energy Ministry said on 25 July.

A protocol representing the completion of 30 months of work was signed by Kozloduy NPP General Director Ivan Andreev and Rosatom Service General Director Evgeny Salkov. It confirms that the equipment, construction structures and systems examined are in good working order and the unit could be safely operated until 2051, Rosatom Service said. Kozloduy NPP has two VVER-1000 reactors in operation (units 5 and 6) that produce approximately a third of Bulgaria's electricity.

Bulgaria's Nuclear Regulatory Agency is now expected to grant a 10-year extension of the operating licence for Kozloduy 6, which is due to expire in 2019.

The programmes for upgrading and extending the operational lives of Kozloduy 5&6 was launched in 2015 and cost a total of €360m (\$420m), to be financed by the plant itself.

The upgrade of Kozloduy 5 for an additional 30 years of operation was completed in 2016. In 2016, Kozloduy NPP signed a contract with a consortium that included Rosatom Service, Russian nuclear use Rosenergoatom (a subsidiary of Atomenergoprom) and Risk Engineering (a Bulgarian energy company), in order to extend the licence of the unit.

Minister of Energy Temenuzhka Petkova said: "At the end of last year, a licence was issued for the extension of [Kozloduy] unit 5 operation by 10 years. Today we will hear the results of the project we have implemented with our Russian partners to extend the operation of unit 6." Of 227 planned activities, 138 have been completed, 70 will be completed by the end of the year and 19 in the next licensing period." She added that the activities were financed by Kozloduy NPP.

NUCLEAR PHASE-OUT IN BULGARIA WITHOUT FURTHER DELAY!

<https://europeangreens.eu/content/nuclear-phase-out-bulgaria-without-further-delay>

EGP Resolution adopted at the 29th EGP Council in Berlin, 23-25 November 2018

All European Greens strongly support the transition from nuclear to renewable energy. Nevertheless, there are still countries where governments are postponing the nuclear phase-out, ignoring the rights of their citizens to a healthy life in a safe environment, which is also significantly affected by the operation of outdated nuclear power plants. As mentioned in the resolution adopted at the EGP

Council in Antwerp (18-20 May 2018) referring to “nuclear phase-out in Belgium without delay”, people in many European countries are very worried about extending the lifespan of nuclear plants because of the many major incidents which have previously occurred in such facilities, and the risks involved in all links of the nuclear chain from uranium mining to waste disposal.

As regards people’s health, the impact of the old Kozloduy Nuclear Power Plant has already been proven by medical reports in the field of oncology. For example, a report (end of 2017) by the head of the pediatric oncology department at the emergency hospital in Craiova (an academic city of over 300,000 people, located about 60km from Kozloduy) indicates an alarming increase in diseases, especially among children, with symptoms clearly related to nuclear radiation in the south of Romania. It is understandable that the people of Romania and Bulgaria, as well as other Europeans, have great concerns about how the Bulgarian authorities (in the nuclear field) are responding to the safety threats posed by the Kozloduy NPP and the proposed construction of a Belene nuclear power plant.

The cross-border debates relating to new projects at the Kozloduy NPP, including the radioactive waste repository (350,000 tonnes) in Radiana (only 4km from the River Danube, on unstable ground) are examples of non-public debates, presenting ambiguous safety measures.

As regards extending the lifespan of reactors 5 and 6 and increasing capacity of the Kozloduy NPP, this was a clear break from the Espoo convention because Romania was not consulted. Bulgarian authorities ignored the official request from Romania (from Minister Attila Korody) for a full Environmental Impact Assessment report (in a transborder context) and safety and technical concerns were not considered.

A recent landmark decision by the Aarhus convention states that the extension of the lifespan of nuclear power plants always has to go through public consultancy, like an EIA, since there is no guarantee that there won’t be an impact on the environment. Therefore the lifespan extension can’t be unilaterally decided.

It is important to mention that security concerns at Kozloduy NPP were the main reasons for EU’s official request to Bulgaria, as a condition for the country’s accession to the EU, to close down units 3 and 4 before the projected time limit.

The evaluations from the expert of the International Atomic Energy Agency (Pre-SALTO expert team) for reactor 5 have reported in 2017 safety concerns due to “reactor and components aging”. Technical recommendations were ignored by the Bulgarian authorities and in November 2017 the licence to operate reactor 5 was renewed for a further 10 years (from the 30-year extension period approved by the Bulgarian authorities in 2014).

The Bulgarian Government, supported by the National Assembly on 7th June 2018, decided to suspend the 2012 moratorium on the construction of Belene nuclear power plant (NPP).

In 2012, the construction of Belene NPP was terminated because of “the apprehensions of seismic risk on the site upon which Belene NPP is located, especially following the nuclear disaster in Fukushima”. As attested by the European-Mediterranean Seismic Hazard Map developed by the European Seismological Commission in 2003, the site Belene NPP is a zone with high seismic risk. The earthquake of 4 March 1977 in Vrancea (Romania) killed 120 people and damaged one third of the buildings in Svishtov, which is less than 10 km from the Belene NPP site. In the 1980s the Soviet partners proposed to “abandon the site of Belene due to the high seismic risk”. In 1990, the Bulgarian Academy of Sciences also concluded that the construction of Belene NPP is not justified and unacceptable.

As these risks and the well-founded arguments still hold true today the construction of Belene NPP would represent an unacceptable nuclear adventurism and significant life-threatening risk, for not only Bulgarian citizens, but also all EU citizens and those of the neighbouring regions. A severe accident in Belene NPP, caused by a destructive earthquake, would lead to tremendous environmental, health and economic consequences for Bulgaria and the Member States of the European Union.

Therefore, the European Green Party demands that the Bulgarian government:

1. Annuls the decision to extend the lifespan of reactors 5 and 6 and close down completely the Kozloduy NPP, a nuclear facility which, in the opinion of international nuclear experts, poses major safety risks for all of Europe.
2. Annuls the decision to reactivate the abandoned project of constructing Belene NPP, located in an area with very high seismic activity (near Vrancea in Romania).
3. Requests the Bulgarian government to stop the development of the construction at Radiana of the national repository for low and medium radioactive waste (350,000 tonnes, resulting from the closure of reactors 1-4 and from further operation of reactors 5 and 6 for an extended period of 20 years), posing a high risk of contaminating the River Danube with all the related negative consequences on the surrounding ecosystems and future development of agriculture in the affected areas in both Romania and Bulgaria.

Hotnews

Miercuri, 3 iulie 2019, 18:32

https://www.hotnews.ro/stiri-ultima_ora-23237540-bulgaria-reactor-centralei-nucleare-kozlodui-oprit-automat.htm

Un reactor al centralei nucleare bulgare de la Kozloduy, situată pe malul Dunării, s-a oprit automat, miercuri, din cauza unei anomalii la sistemul de alimentare cu electricitate, relatează Mediafax citând Reuters.

Centrala atomică de la Kozloduy are două reactoare de câte 1.000 de megawați. Unul dintre ele s-a oprit automat, miercuri, din cauza unei anomalii la sistemul de alimentare cu electricitate.

Lachezar Kostov, directorul Agenției bulgare de reglementare în domeniul nuclear, a explicat că nu există nicio problemă la reactor și a dat asigurări că nu există contaminare radioactivă.

Bulgaria issues Kozloduy 5 licence extension

<http://world-nuclear-news.org/Articles/Bulgaria-issues-Kozloduy-5-licence-extension> scrie

06 November 2017

Bulgaria's Nuclear Regulatory Agency (NRA) has awarded a 10-year extension to the operating licence of unit 5 of the Kozloduy nuclear power plant. NRA chairman Lachezar Kostov officially presented the document to the plant's executive director, Ivan Andreev, last week.

The Kozloduy site is home to two operating Russian-designed VVER-1000 pressurised water reactors, Kozloduy 5 and 6, as well as four shut-down VVER-440s. The units are currently licensed to 2017 and 2019.

Announcing the extension for unit 5 until 2027, NRA said on 3 November this marked the first time Bulgaria had permitted the continued operation of a nuclear power unit beyond the expiry of its original operating licence. The country's Energy Ministry added that the NRA had concluded the unit could continue with safe operation until 2047, but an operating licence extension is limited to 10 years under national legislation.

The plan to extend the operating lives of units 5 and 6 was initiated in April 2012 when Kozloduy NPP plc signed a contract with a consortium of Rosenergoatom and EDF. Early in 2013 a further contract was signed with Rusatom Services to upgrade the turbine generator of unit 6, taking it to 1100 MWe by installing a new stator, with work completed in November 2015.

In October 2014 an agreement for refurbishment and life extension of unit 5 was signed with the three companies. A €24.7 million (\$28.6 million) agreement was signed with Rosatom in October 2015 for upgrading the turbine generator of unit 5 by May 2018. It involves Rosenergoatom, Rusatom Services and EDF. The government is committed to their life extension and uprate to 104% of original capacity.

*Researched and written
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