LEAD STORY

Alexei Likhachev: There Is No Alternative to Nuclear Energy

In early June Moscow hosted the Saint Petersburg International Economic Forum. A special session of the Forum was devoted to the role of nuclear technology in green energy development. The session was attended by Alexei Likhachev, Chief Executive Officer of Russia's state-owned nuclear corporation Rosatom. Learn more about the session in our report.

Nuclear power generation is key to green energy, according to Alexei Likhachev. "There is no other way for green energy to develop in the world, Russia included, than through development and expansion of nuclear energy. Moreover, we understand that many power stations will be put out of operation soon and need replacement. Of course, this concerns other sources of power as well, not only nuclear. This is the reason why along with satisfying the global demand growth we have to provide for the capacity replacement," noted the CEO of Rosatom.

He stressed that nuclear energy could not be replaced with other sources, either hydrocarbons (due to a sharp increase in emissions) or renewables (due to high costs and poor performance at peak loads). It is pointless to talk about changes in the global energy mix and achievement of climate-related targets, he added, without further development of nuclear power generation. According to him, all forecast have one thing in common: global power consumption will inevitably grow, and new demand will be satisfied with green energy. "Will we be able to satisfy the growing demand with only hydro, wind and solar power? No, we won't," Alexei Likhachev says.

"2015 was a very eventful year for the industry, but the Paris Agreement was a central event in every respect. In fact, those did not win who were skeptical about the human role in climate change. The victory is scored by those fearing for the future of mankind. We entered 2016 with hope that 175 countries agreed on joint financial and intellectual efforts to dramatically reduce greenhouse gas emissions. If we imagine that the global share of nuclear power, which is now 11%, is replaced with fossil fuels, it will add 2 billion tons of CO2 to annual emissions. This is what we could have if we had not developed nuclear power"

The CEO of Rosatom drew attention to Germany's recent experience. Its nuclear phase-out program has already brought about certain negative results, including high spending on the program, slow growth of the country's installed capacity, and growth of emissions. "As far as I know, Germany invested almost 25 billion Euros in alternative energy. Its installed alternative capacity makes now about 18% of the country's energy mix – as much as nuclear energy in Russia – but total capacity has increased by just a few percentage points. As you can easily guess, all costs are finally born by consumers, those who pay utility bills. In addition, the more nuclear generation capacity is decommissioned in Germany, the more carbon dioxide is emitted. This situation is exemplary for everyone of us, but these are goals of the German government; we have ours. In Russia, the trend is opposite. We increase the share of nuclear power generation and development of new technology," Alexei Likhachev noted.

Nuclear brings West closer

Alexei Likhachev also pointed out that civil nuclear projects would facilitate cooperation between Russia and the West. "I think our businesses miss successful international projects between Russian and European companies, Russian and Japanese companies, as well as companies from other countries that have to refrain from political contacts [with Russia] for certain reasons," Likhachev said. According to him, the nuclear industry like no other can serve as a bridge between businesses, economic elites and countries.

I would like to mention than no project carried out by Rosatom overseas has been affected by Western sanctions against Russia. Experts say that Russia has been developing its international contacts with success. For example, the European Commission has given a green light to the Paks NPP expansion project to be carried out by Rosatom in Hungary. The Government of Finland has approved Hanhikivi-1, a joint Finnish-Russian nuclear construction project. One more example is a Russian-Japanese memorandum of civil nuclear cooperation. Rosatom Group has signed numerous contracts with foreign companies in different areas of interest, including promotion of Russian-designed TVS-K fuel assemblies in the USA and Sweden, and uranium supplies to the American market.

COOPERATION

Rosatom to Join Efforts with WEC

The Saint Petersburg International Economic Forum hosted the signing of an agreement between the World Energy Council and Rosatom to welcome Russia's state nuclear corporation as the Council's patron.

The document was signed by Rosatom's First Deputy CEO for Corporate Development and International Business Kirill Komarov and WEC Secretary General Dr. Christoph Frei. As the World Energy Council's Patron, Rosatom will be involved in joint research on energy issues and professional thematic activities at an international and regional level.

Participation in the WEC Patronage Program will enable Rosatom to join the Council's national member committees in countries of key interest for the company. "I hope that our cooperation under the agreement, will draw the attention of WEC members to nuclear energy, which we regard as a key component of the global 'green' energy mix of the future," Kirill Komarov commented on the agreement.

"We are delighted to see that Rosatom has joined the World Energy Council as its Patron. The energy sector is on verge of dramatic changes, and new partners will help us to better understand consequences and opportunities brought by the new realities," Dr. Christopher Frei said.

Rosatom has been a member of the World Energy Council's Russian National Committee since 2012. Formed in 1923, the World Energy Council is a network of energy leaders and practitioners promoting an affordable, stable and environmentally sensitive energy system for the greatest benefit of all. The Council is the UN-accredited global energy body, representing the entire energy spectrum, with more than 3000 member organizations located in over 90 countries. The World Energy Council informs global, regional and national energy strategies by hosting high-level events, publishing authoritative studies, and working through its extensive member network to facilitate the world's energy policy dialog. The Council is a multi-lateral independent organization involving all the countries using all types of energy and generation. WEC Patrons are the largest global energy companies (Alstom, EDF, ENGIE, GE Power, Korea Electric Power Corp, Siemens AG, etc.).

IN FOCUS

Yukiya Amano Praised Russia's Role in Nuclear

IAEA Director General Yukiya Amano praised Russia's role in the development of nuclear power generation and non-power uses of nuclear energy.

Yukiya Amano, Director General of the International Atomic Energy Agency, paid his first visit to the Leningrad Nuclear Power Plant in early June as part of his work at the Saint Petersburg International Economic Forum. He was demonstrated upgraded power units and inspected the readiness of the Generation 3+ VVER-1200 unit (Leningrad-II) for startup operations.

Mr. Amano was accompanied by Mikhail Chudakov, Deputy Director General and Head of the Department of Nuclear Energy, Nikolai Spassky, Rosatom Deputy CEO for International Relations, Vladimir Voronkov, Russia's permanent representative to the international organizations in Vienna, and Alexei Ferapontov, Deputy Director of Russian regulator Rostechnadzor.

During his visit, Yukiya Amano praised safety systems of the Leningrad NPP and noted that the new Russian unit had more safety systems than previous models. The multi-level safety concept of VVER-1200 is very impressive. If any system fails, another snaps into action, and this is very reasonable," he said.
When meeting with media after the visit, Yukiya Amano said that Russia contributed much to IAEA efforts in nuclear generation and non-power applications of nuclear energy. "Nuclear energy is the most environmentally friendly source of electric power as it produces minimal greenhouse gas emissions. Development of nuclear energy is indispensable to the well-being of mankind and will be continued. Russia is an active proponent of the process," IAEA Director General noted.

COOPERATION

Green Light Given to Kudankulam Stage III

Russia and India signed an agreement for the third stage of the Kudankulam nuclear power plant project.

The signing ceremony took place as part of the 18th Annual Russian-Indian Summit organized on the margins of the Saint-Petersburg International Economic Forum. Kudankulam Stage III includes the construction of Units 5 and 6 in the Indian state of Tamil Nadu. The parties also signed a credit protocol required to move ahead with the project. The set of documents for Stage III provides for obligations of the Parties, price and other material terms and conditions of cooperation between the parties. The agreement was signed by Valery Limarenko, President of ASE Group (a general contractor for the Kudankulam NPP project), and Shri Satish Kumar Sharma, Chairman and Managing Director of Nuclear Power Corporation of India Limited (NPCIL).

"We signed extremely important documents that we had worked on hard for the last few months. All formalities have been satisfied thus far to finally kick off the construction of two Russian-designed power units at Kudankulam. I am pleased to say that the project has therefore entered into an active phase. We fully appreciate our joint efforts in the construction of the Kudankulam NPP in Tamil Nadu," said Valery Limarenko, President of ASE Group.

As he later told the Russian news agency TASS, Units 5 and 6 are scheduled to be commissioned in 2024 and 2025 respectively. "The total capacity of the two new units will be 2 GW. Unit 5 will be brought online in 2024, to be followed by Unit 6 in 2025," he said. He also added that Rosatom hoped for broader engagement of Indian companies in the third stage of the Kudankulam project. Commenting on the differences of Stage

III (Units 5 and 6) from the earlier constructed units, Limarenko explained, "Kudankulam power units [Stage III] are different for those constructed before in local content. We hope to work more closely with Indian companies. As for the third stage of the project, we are talking about the nuclear and turbine islands worth nearly 4 billion US dollars.

FOR REFERENCE
Rosatom built and commissioned the first two units of the nuclear power plant. Construction of Units 3 and 4 was started after the Indian nuclear regulator issued a relevant permit in January 2016. On-site work has begun; plans are to pour the first concrete in late June 2017. The Kudankulam Nuclear Power Plant is based on the design developed by Rosatom's subsidiary AtomEnergoProekt. Featuring VVER-1000 reactors, the design fully complies with the latest technical regulations of the IAEA and Russian Federation and is certified to the European Utility Requirements (EUR) for LWR Nuclear Power Plants.

IN BRIEF

Rosatom to Build School in Finland

Rosatom is going to build a Russian school in Finland and organize cooking classes between the towns of Pyhäjoki and Kalajoki.

Rosatom and the Russian Federal Agency for International Cooperation (Rossotrudnichestvo) plan to open a school with Russian-speaking teachers and organize Russian cuisine cooking classes in Finland where Hankivi-1, a Russian-designed nuclear station, is to be built. This was announced by Rosatom's First Deputy CEO Kirill Komarov at the session entitled "Economic Integration and Humanitarian Activity: New Way To Give Business a Competitive Advantage" that was held on the first day of SPIEF 2017. "The mayor of Kalajoki told us that at least a thousand of Russians would come there for the period of construction, which is seven years, and would bring their wives and children with them. We want them, he said, to feel comfortable in our town and want you to organize Russian cuisine cooking classes. We will open a pelmeni [Russian dumplings] bar and cook the same food they are used to eating at home so that they feel good. And please build a school so that we could learn Russian and speak the same language with them," Kirill Komarov reported the mayor's words. "This is what we are doing in Finland in association with Rossotrudnichestvo," he added.

Rosatom to Supply USA with Uranium for USD 6.5bn

Rosatom will continue uranium supplies to the USA. Its subsidiary TENEX has 25 current contracts for a total of 6.5 billion US dollars, says a press release of the company.

Contracts are made with 19 American companies and provide for uranium supplies till 2028. Supplies of Russian uranium products till 2020 – 20% of total reactor needs in the USA (nearly 3 million SWU) – are 95% exhausted. Limits for 2011–2016 were exhausted in full. SWU is a separative work unit, or the amount of uranium isotope (U-235 and U-238) separation done by an enrichment process. TENEX is sure that business relations with American companies will continue. Last year Rosatom's TVEL Fuel Company and an American nuclear operator signed the first contract to pilot

test Russian-designed TVS-K fuel assemblies. TENEX has been operating on the American uranium market for three decades.

Belarus NPP: New Milestone

The Belarus Nuclear Power Plant approached a new milestone as welding operations started on the main circulation circuit.

It connects all the primary loop components, including the reactor, steam generators and main circulation pumps that force the coolant (water) to flow through the circuit and transfer heat away from the reactor core. Earlier a new record was set by construction workers at the second unit of Novovoronezh II with a similar VVER-1200 reactor as they completed welding on the main circulation circuit in just 72 days. "This is a reference time for EnergoSpetsMontazh that is to weld the main circulation circuit of the Belarus NPP," a report says. It is explicitly mentioned though that installation of the circuit will fully comply with all quality and safety requirements. The Belarus NPP is constructed near Ostrovets (Astravets), a small town in the Grodno Region of Belarus. The plant will have two VVER-1200 reactor units with a total capacity of 2,400 MWe. Unit 1 is scheduled for commissioning in 2019, to be followed by Unit 2 in 2020.