

IZOLYATOR

Established in 1896

ON THE WAY TO IZOLYATOR PLANT'S ANNIVERSARY

MADE IN RUSSIA

**2020: THE RESULTS OF THE YEAR
AND PROSPECTS**

— p. 08

★ **125 years
of discoveries
and victories!**

Izolyator celebrates
a big anniversary
in 2021

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★ **Recognition
of one of
the world's
largest grid
companies**

JV MIM is official
supplier of the Indian
power grid operator
PowerGrid

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★ **For the benefit
of the company
and the region**

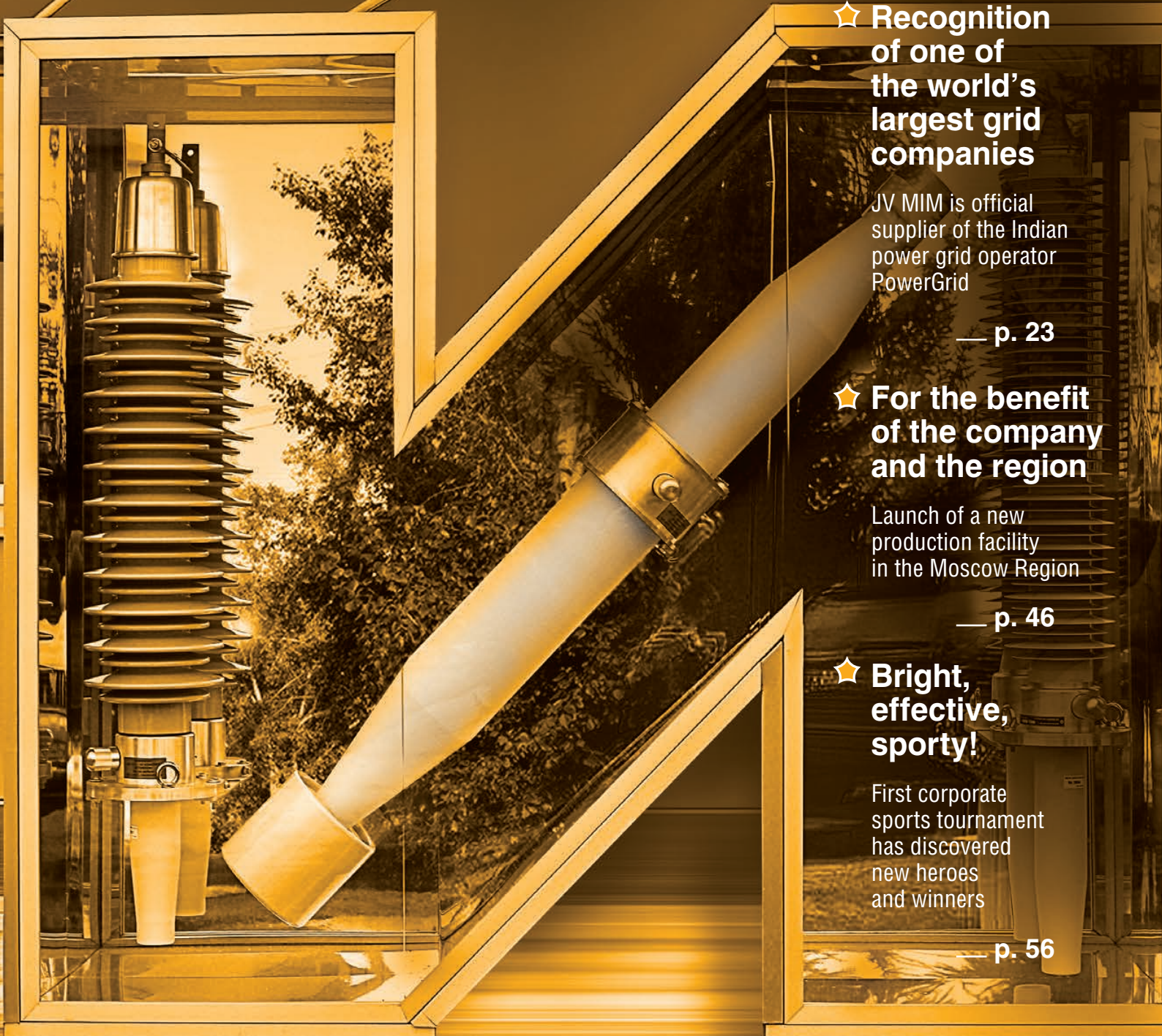
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IZOLYATOR

Corporate Edition of Izolyator plant

Biannual

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IN THE FIRST PERSON

125 years of discoveries and victories



Dr. ALEXANDER SLAVINSKY,
CEO at Zavod Izolyator LLC, Head of National Study Committee D1 RNC CIGRE,



The grinding shop. 1921

Izolyator plant was founded on the 6 June 1896, when the first batch of low-voltage porcelain insulators intended for telegraph and telephone lines were manufactured by the company. Over 125 years of lasting operation, Izolyator has grown into a world leader in design, manufacture and technical service of high-voltage bushings in the 10 - 1150 kV range". Last year Izolyator launched a new cable accessories plant in Russia and a Russian - Indian joint venture for the production of bushings with solid RIP insulation on the territory of India. Here is what, CEO of Zavod Izolyator LLC Dr. Alexander Slavinsky told about the rich history of the company, its capabilities and prospects of development.

- This year Izolyator plant celebrates its 125th anniversary. Tell us please about the milestones of enterprise's development. What are the company's achievements over the period of its work?

- I would like to begin with the fact that the plant dates back to the 90ies of the XIX century. It became the first enterprise in Russian Empire that made porcelain insulators. The factory was located in the vicinity of Vsekhsvyatskoe

village of the Moscow Governorate, the area of the contemporary metro station Sokol in Moscow city. Before the revolution the company already made a great progress had won recognition at the international exhibitions with insulating materials of own production. Later on, the enterprise was modernized and including in the list of the plants, engaged in fulfilment of the state order known as the famous GOELRO plan which, by the way, turned 100 years old last year. Then the plant started mastering the production of high-voltage insulators finding its purpose finally in the 30ies in production of high-voltage bushings. So and as the voltage in the electrical networks grew, the voltage classes of our bushings also grew higher. The key achievement was the mastering of super-high voltage class technology, i.e. 1150 kilovolts, used on the line which is still operating in our country and it connects Kazakhstan and Siberia. All the essential successes of Soviet domestic electrical engineering, one way or another, were associated with the achievements of our plant. In fact, the enterprise performed the function of the sole supplier of bushings for the entire power system of the Soviet Union. There was also a large geography of foreign deliveries due to the fact that the Soviet Union provided great assistance to friendly countries in the creation of their power systems. Among them are the countries of Eastern Europe, Vietnam, Cuba and many others. Our equipment is successfully operating in more than 30 countries around the world.

- Please tell us about the modern Izolyator manufacturing facility, which was launched in the Moscow region in 2007. What technical features and equipment has it got?

- In the early 2000s relying on our experience, we decided that in order to further development the technical and production process, the enterprise, cramped inside the residential quarters of the city of Moscow as it was, had to grow on. The metropolis has its own functions, and the industry should be somewhere near the capital to back it up with its powerful shoulders. Therefore, it was decided to look for a land plot for the construction of a new modern plant, which was designed as a high-tech production complex, as well as absolutely environmentally friendly in terms of the impact of the production on the environment. One of the sites, suggested for construction, was the Istra district of the Moscow region, and we began to develop it. Thus, a green-field plant was built in short time. The construction of the plant began in the fall of 2006, and in December 2007 the complex was commissioned. Now, Izolyator plant is a modern enterprise equipped with the best domestic and foreign technological equipment. A complete production cycle of high-voltage bushings is implemented here including their testing and shipment to customers around the world.

- The company is a world leader in design and production of high-voltage bushings. Could you please tell about your sales geography and the most important power facilities where your products are operating.

- Well, there are no second-priority orders for us. Most of the facilities that generate, transmit or distribute electric power would be equipped with our bushings. I already mentioned that we had a good cooperation experience with foreign partners in Soviet years. We make sure to retain and develop it further.

In general, maintaining a balance of deliveries inside Russia and beyond is a key to the financial stability of our company. We have come up with the formula quite a long time ago and try to live to it. Our export orders set new tasks for us, associated with modifications of product designs, sourcing technical solutions, or non-standard approaches to execution. Since the specificity of our products is rather narrow, we have achieved certain success, obtaining such technical characteristics that are comparable and sometimes surpass those of our colleagues - manufacturers of well-known European and world brands.

We deliver our products to the countries of South-East Asia, India and even China despite their self-sufficiency in the production of own electrical equipment. We have quite good positions in the market of Eastern Europe: - Slovakia, Poland, Czech Republic and countries that were formerly part of Yugoslavia: Serbia, Slovenia, Croatia. In Western Europe, we have consumers too. We work with transformer plants in Belgium, power companies in Northern Europe. Our bushings operate in Denmark, Norway, Germany, Switzerland. Our main aspirations in the development of new destinations are African countries and continued work in Asia. For these purposes, we have created a joint venture with Mehru - this is our Indian partner. Presently, we are making preparations for the launch of mass production in India, not far from New Dehli. We can safely say that we are moving from exporting products to exporting technologies. That is, we have created a modern full-cycle enterprise in India in order to gain a foothold in the markets of Asia and develop further.

- What innovative types of products do you offer your Russian and foreign customers today?

- Today the mass produced items would be based on RIP insulation: paper impregnated with resin. This is the main insulation, which is both advanced and sufficiently demanded everywhere in the world, and yet innovative as many operators still keep using older insulation types, such as oil-in-paper, oil, etc. Obviously we look a little far, trying to stay ahead of demand. Today, we are engaged in mass production of bushings with even later type of insulation, which uses non-woven materials instead of paper that is synthetic Vs cellulose. It is abbreviated as RIN - resin impregnated non-woven. That is the sufficiently advanced patented technology. There could be one or probably two matching products elsewhere in the world, however their execution would be different from ours. Our products are certified by Rosseti and find their way to buyers in the



Installation of 1150 kV bushings on the power equipment of the Ekibastuz-Kokchetav-Kustanay power line in the 1980s



The renovated entrance group of the administrative wing of Izolyator complex

markets of Russia and overseas. In the future we intend to completely switch to this technology. In terms of production, it offers better economy, reduces production time, which is really important due to today's market requirements, when your product is needed "quickly and top quality".

The second activity of our company is diversification of product range: we intend to make other than high-voltage bushings products. Over the past year or two, we have been preparing for opening a production of cable accessories and cable joints.

- Could you please tell in more details about the new business line of Izolyator - development and production of high-voltage cable fittings.

- On the territory of the Izolyator manufacturing complex, we have completed the installation and commissioning stages of the main equipment for launching serial production of cable accessories. Already in August last year, we produced the first cable joints! That came as a milestone in the history of the Russian power industry - 110 - 220 kV cable joints were made for the first time domestically. The capacities of the new enterprise are able to fully satisfy the needs of the entire Russian market for high-voltage cable accessories, providing deep



220 kV Izolyator RIN bushings on a superconductive current limiter by SuperOx, installed in the electric substation Mnevniki in Moscow



Test Center of Izolyator plant

localization and quality that meets the highest international standards. Key consumers of the products will be federal power grid companies (Rosseti), cable plants, transformer plants and switchgear manufacturers.

- What are the plans for the Anniversary year?

- One of our key objectives today is to carry on with our investment projects for development, meaning the organization of high-voltage bushings production in India and cable joints production in Russia.

As part of the work of the R&D Center of our company, we will continue to improve designs and develop new types of insulation for high-voltage bushings. With the help of our own corporate university, which opened on the basis of our company last year, we will offer our partners and consumers around the world a range of training programs to improve their qualifications in the field of installation and maintenance of high-voltage insulating equipment.

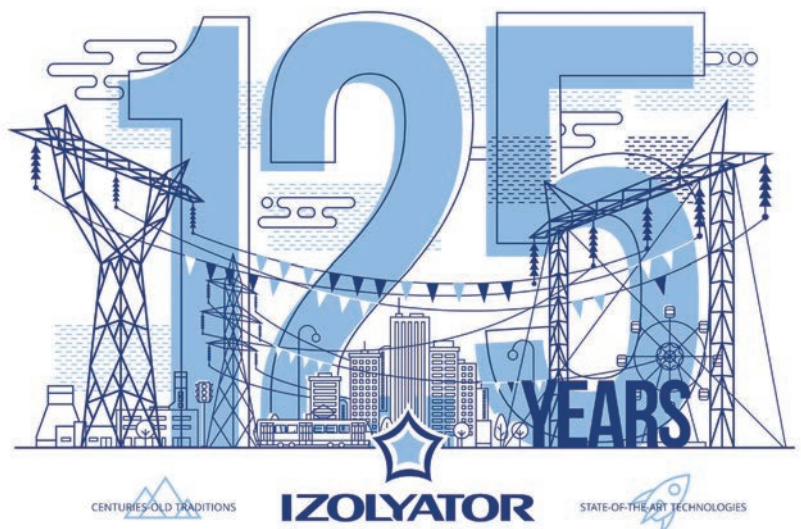
- How does Izolyator manage to retain its leading position today?

- Thanks to its people, to the staff and due to the fact that we have a huge number of labor dynasties - today we have great-grandchildren of those people who worked at this plant before the war. This is a unique genetic technological memory, which is not on electronic media, not in the folders of design documentation, but in a kind of gene cloud, which is perceived and thus we understand where we are working, what we are working on, what we are doing, for whom we are doing it.

- Alexander Zinovievich, you have led Izolyator for over 25 years and you actively contribute to the work of scientific communities, sectoral organizations and universities! Where do you get so much strength and energy from?

- I always refer as an example my predecessors, the directors who headed Izolyator in different years. And one of them was the permanent director of the plant from 1964 to 1989, Alexander Barkov, an outstanding production organizer, ideologist and inspirer of the large-scale reconstruction of facilities. Thanks to his energy, the enterprise was transformed into a powerful scientific, technical and industrial complex, which provided the entire Soviet Union and other countries with high-tech products! It is consistent work and the ability to ultimately create the results of one's activities that give a surge of strength and energy for new achievements.

Electricity has long become a friend and helper of man, a lot of effort is expended to ensure the uninterrupted operation of the power system, especially by our colleagues: power engineers, our customers, who work in networks, at hydro and other power plants, cable workers, electrical engineers throughout the country - everybody contributes, so and we participate in that process. As they say, there is light and warmth in every home, and we are proud that there is a part of our input in this big bright work.



Made in Russia



Made in Russia International Export Forum, Moscow, 9 December 2020

Izolyator took part in the "Made in Russia" International Export Forum in Moscow in December 2020, which was organized by the Russian Export Center and Roscongress Fund.

The key topic of the forum this year was "What will be the economy of the third decade and what challenges and opportunities it creates for Russian exports". This year the event was held in a hybrid format: some of the participants gathered in the multimedia press center of the International Information Agency "Russia Today" in Moscow, others joined remotely. Alexander Slavinsky, CEO of Zavod Izolyator took part in the forum's work. The business program included a plenary session, round tables on export topics and teleconferences with foreign countries and Russian regions. The forum was opened by the plenary

session "Economy of the third decade: Challenges and Opportunities for Russian Export", at which the Chairman of the Government of the Russian Federation Mikhail Mishustin spoke. During the session, members of the Government of the Russian Federation and business leaders discussed key trends in the global trade, summed up the results of the past year, and also answered a number of topical issues of developing export potential. Thus, in his speech, First Deputy Prime Minister of the Russian Federation Andrey Belousov said that in 2020 non-resource non-energy exports will amount to about \$ 145 billion, and will likely exceed that figure.

Oleg Belozеров, CEO and Chairman of the Board of Russian Railways, told about new products that the holding has developed specifically for effective foreign trade of small- and medium-sized export-oriented enterprises of Russia. Within the framework of the forum, the Russian Export Center organized an exhibition at which high-tech products of Russian export-oriented enterprises were presented, including innovative developments of Izolyator. The exhibition was visited by Mikhail Mishustin and members of the Government of the Russian Federation. The round-tables of the forum were dedicated to issues of adjusting the



A discussion on topical issues of the Russian export

export support system, strategies for entering foreign markets through electronic trading platforms, the development of the full-fledged export of impressions, the best regional practices for supporting exporters

and the digitalization of services for exporters. Support for non-resource exports will continue to be one of the strategic directions for the development of the Russian economy.



Chairman of the Government of the Russian Federation Mikhail Mishustin at the plenary session of the Made in Russia International Export Forum



Alexander Slavinsky at the Izolyator stand at the exhibition organized during the Made in Russia International Export Forum

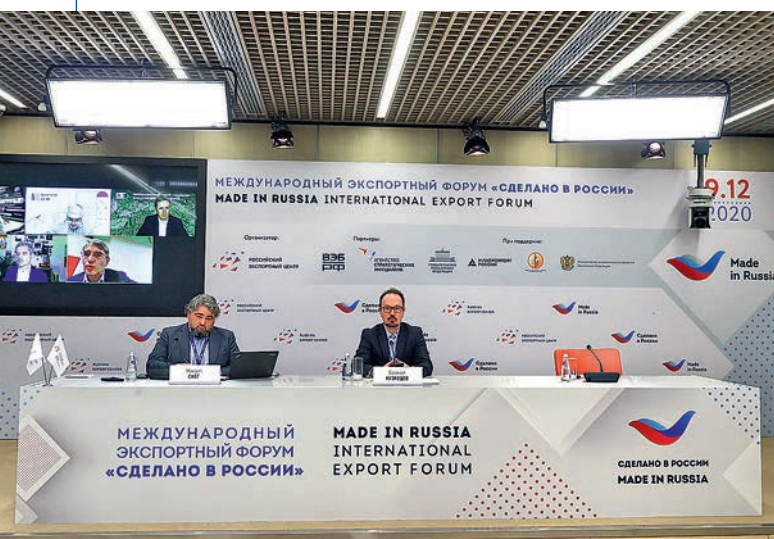


Plenary session "The economy of the third decade: challenges and opportunities for the Russian export"

The "Made in Russia" International Export Forum is an international platform where exporters, experts, officials and development institutions discuss topical issues of export activities and develop practical solutions for increasing the supply of Russian goods and services abroad. Its main goals are to identify trends in the development of exports, to demonstrate the possibilities that the state and development institutes provide to exporters. The annual forum is attended by heads of Russian and foreign companies, federal and regional executive authorities, Russian banks, regional export support



The audience of the Made in Russia Forum



Business of the future round-table



Teleconference with forum's participants in regions



A multiservice platform



New generation electroencephalographic equipment

centers, specialized associations and unions, business media and leading experts.

The Russian Export Center (REC) is a state institute for the support of non-resource exports, consolidating a group of companies that provide Russian exporters with a wide range of financial and non-financial support measures.

Intense interaction with federal and regional authorities, key industry and business organizations allow REC to contribute to the progressive improvement of the conditions for conducting export-oriented business activities in the Russian Federation.

The Russian Export Center is part of the state development corporation VEB.RF.



A high-tech medical patient simulator



Mikhail Mishustin walking the exhibition organized as part of the forum

New challenges and new solutions - development of the enterprise in conditions of the pandemic

Sergey Moiseev,
CEO
Massa LLC

Almost the entire 2020 year went in the difficult conditions of pandemic. It is no exaggeration to say that external factors that indirectly or directly influenced all aspects of the enterprise's activities, became a real test of the strength of our stable. To resist those threats without stopping in development was a challenge that Izolyator readily faced. Sergey Moiseev, CEO of Massa LLC, spoke about how it happened and what it led to.

Ready for any challenge

Back in early 2020 no one could have imagined that the spread of the virus in distant China very soon would significantly affect the work of our enterprise

in Russia! But already in March, events began to develop faster and faster, and by the end of the month the mayor of Moscow and the governor of the Moscow region began to introduce restrictive measures.

To ensure the safety of employees and reduce the risks of the spread of coronavirus infection on the territory of the enterprise, an anti-coronavirus task set up for organizing and implementing high-alert measures. I decided to take over the management of the task force, the members of the command group were appointed: Head of the Human Resources Department Julia Turina, Associate General Director for Security Boris Sobelman and Head



of Operations Support Marina Vladimirova. We had to ensure uninterrupted work of the company's staff members in conditions of restrictions, as to collect and process information about health condition of all employees, assess the situation and promptly take measures to minimize the pandemic's negative impact on the functioning of the enterprise.

Perhaps one of the main challenges was that we were face a number of restrictions, such as for example, restrictions on commuting of employees to the workplace. With conditions constantly aggravating, there was a feeling of uncertainty regarding the degree of employer's authority to follow those restrictions as, for example, in case of issuance of digital passes for the commuting of our workers. Despite all those difficulties, the HR stable has done a tremendous job. Thus, its leader Julia Turina, staying practically in round-the-clock communication with the administration of the city district of Istra of the Moscow region, neighboring enterprises and other organizations, did her best to ensure that the issue of our employees' access to the plant was resolved.

Ensuring protection

A great job to improve efficiency of the set of measures to protect workers from the spread of coronavirus infection was done by the representatives of the Operations Support group: Panfil Fostikov, Irina Moldovan and Alexander Golikov under direct supervision of Marina Vladimirova.

A number of necessary measures, such as prompt provision of personal protective equipment (PPE),



The company has a set of effective measures to protect employees from the coronavirus infection in place

various disinfectants, organization and regular disinfection of places with the greatest possible congestion of people, designation of the social distance in those places, allowed us to minimize the risks of the spread of COVID-19 at the enterprise even in the most peak periods of morbidity in the Moscow region and Moscow.

We established a testing process for COVID-19, paying special attention to the employees of those structural units where we spotted the greatest number of cases of the disease, or the manifestation of its symptoms. In 2020, at the expense of the enterprise, 843 tests were carried out: alas, 27 employees tested positive. Another 19 people were found to have antibodies to coronavirus infection.

Our Medical Specialist Tatyana Panyukova made a significant contribution to the collection and processing of information about the health status of employees, an operational assessment of the development of the situation with coronavirus at the enterprise. Together with her, employees of the PR & Internal Communications department headed by Nikolay Borichev were actively involved in informing about preventive measures and actions of employees in the event of symptoms of the disease. In addition, I would like to express my gratitude to our partners in the person of Elena Paladyeva and all employees of the canteen (Individual Entrepreneur Paladyev N.K.), as well as to the staff on duty shifts of the private security organization Grad and personally to its Head Igor Nikiforov. Our partners responded promptly to the requirements developed by the local authorities and our requests to ensure the necessary anti-pandemic measures, despite the fact that it was not stipulated as part of their contractual obligations.

Personal responsibility of everyone

The fact how consciously the company's employees behaved in the situation, their understanding of the need to comply with the rules of personal hygiene, the use of PPE and the observance of the order of actions of workers upon detection of symptoms of the disease - all that is an example of our team's solidarity. All specialists involved in the organization or implementation of anti-COVID activities, as well as structural divisions' leaders, especially production and technical service (PTS), showed understanding of the interests of the enterprise and high organizational qualities. I would especially like to note that the employees, understanding the responsibility, were even ready to sacrifice their personal time - I think that is a manifestation of a true team spirit.

I believe it is the joint conscious and coordinated work of all managers and employees of the enterprise, our partners and tenants that allowed not only to keep the incidence rate of COVID-19 in the company at a low level, but also to ensure uninterrupted production activities. All the above ultimately ensured the achievement of a significant financial result, which we received in 2020.

Not resting on at what has been achieved

Despite the epidemiological situation, the past year was full of events at the enterprise, both related to organizational and structural changes and the implementation of various projects. For instance, at the end of May, a large preparatory work was finalized, so from June 1 we announced a new organizational structure of the enterprise. The changes were associated mainly with the redistribution and clarification of responsibility in some areas of production and innovative activities of the enterprise. As a result, some divisions were closed and others - created or restructured.



Tatyana Shumskaya, Deputy Head of the Administration of the City District of Istra, is awarding Sergey Moiseev a Letter of Appreciation from the Head of the Istra city district administration for active work in the fight against the pandemic

The scientific and technical center was formed and included a former special design and technological bureau, a technical control department created from the abolished quality service and a newly organized pilot production with the function of testing and introducing promising designs and technologies for the production of the company's products, as well as new types of equipment. In addition, these changes were aimed at improving the ability and efficiency of the provision of services to customers. In addition, the test center and metrology assurance, which left the quality service, became part of the newly created testing and metrology assurance service, which also included an electrochemical laboratory. The service has combined the functions of special control of materials and testing of produced high-voltage equipment, as well as metrological support of the enterprise. In order to implement effective management of the integrated management system for quality, ecology, health and safety at work (IMS), as well as to ensure normal working conditions for the employees of the enterprise, a new subdivision was formed - the Operations Support Service, which included the IMS office, labor protection office, a specialist in environmental security and Chief Administrator. There were some structural changes in the PTS, which included the Planning and Dispatch Department and the Procurement Department. This was due to the task of optimizing and improving the planning of all production activities, including its structured and operational provision with all the necessary materials and components, as well as increasing the responsibility of the PTS for effective implementation of the production ⇨



The grand opening of Izolyator Corporate University

program and the timeliness of the fulfillment of the company's contractual obligations to customers. These changes made it possible to further implementations the order-based method of production planning at the enterprise.

Best staff members

Important structural changes have also taken place in the HR department. Initiated in May, 2020 by Julia Turina project to create a corporate university of the company in October was successfully completed, with a grand opening and participation of Alexander Slavinsky, CEO of Zavod Izolyator LLC. The project began on June, 1 with the creation in the structure of the Human Resources Department of a new structural unit - the Izolyator Corporate University, and in August the company received a license to conduct educational activities in the field of additional professional education. Initial accreditation was received by such training programs as "Labor Protection" and "Fire and Technical Minimum", preliminarily approved by the government agencies.

The next step in expanding educational services of the corporate university was initiated by Director of Strategic Sales Alexander Savinov and implemented under the supervision of Julia Turina pilot project under the professional development program "Installation of high-voltage bushings produced by Massa LLC for power equipment". The Chief Designer Yuri Nikitin, the Head of the SVN-Service department Alexey Pilyugin, the Lead Technical Support Specialist Victor Kiryukhin and Director of Testing and Metrological Assurance Dmitry Ivanov took an active part in the development of the program. This 40-hour program with direct participation of

Methodologist Marina Nizenkova, Administrator of the distance educational systems Viktor Shatskiy, Document Management Specialist Irina Solnyshkina was successfully tested in November 2020. 85 specialists from such companies as JSC Electrosetservice, JSC Yantarenergo and FGC UES took part in the training. Based on the results of the training, all students were issued certificates, and

positive feedback was received from the General Director of JSC Electrosetservice E.N. Frolkin. It should be noted that our plans include a lot of work to develop the areas of activity of the corporate university.

Current development

Today the training of employees of the enterprise in the field of management continues, our social partnership is developing. We will continue to participate in such events of MPEI, MIET and Krasnogorsk College as forums, talk shows, hackathons, seminars, etc. The procedure for recruiting personnel to the company was modified in terms of testing candidates for employment, for which a questionnaire was developed for conducting interviews with applicants. A procedure has been developed for the adaptation of newly hired employees of the enterprise. A project to introduce professional standards has been launched. The project is to be implemented in 2021. A distance educational platform has been launched and is being tested, and 12 distance educational courses have been developed. Employees of the enterprise are actively trained on the platform under the occupational safety program. A project with MIET students is being implemented at the stage of completion to create a mobile application for a smartphone for the installation of high-voltage bushings. Regularly, within the framework of social partnership, excursions are held for students of universities and secondary specialized educational institutions with exciting quests with questions about electrical engineering. We continue working with the talent succession pool of the enterprise, with both operational and strategic personnel reserves replenished. In 2021, the level of reservists is to be assessed and individual development plans are to be drawn up.

It is important to note that, in fact, 2020 has become significant for us in rethinking and adjusting our IMS. The work on the reengineering of the process



Participants of the second supervisory audit of the Integrated Management System for Quality, Environment, Occupational Safety and Health at Izolyator

model, which began in the fall of 2019, was continued and included several meetings to review and discuss the presentations prepared by the heads of the company's divisions on the planned IMS processes. This work ended with the actualization of the new IMS process model. As a result of a big work, organized by the Head of the IMS office Tatiana Simakova and conducted with the participation of all structural divisions leaders, a number of processes have undergone changes.

There are also new ones, for example: "Planning and inventory management", "Labor safety and environmental safety", "Logistics and provision of transport services". Conducted by the certification body TÜV HESSEN last September the next supervisory audit of the IMS and further improvement of the functioning of the system showed that for the near future, the newly developed process model is optimal for the implementation of the enterprise development strategy. At the same time the controllability and quality of monitoring over the IMS processes have been increased, the developed criteria for evaluating processes make it possible to fully assess the ability to achieve the established goals. In general, the stability of the functioning of the IMS processes was increased, which was confirmed by the successful external supervisory audit, according to the results of which it was noted that the process model of the enterprise corresponds to the current needs of the business, which contributes to the improvement of the performance indicators of the enterprise. In addition, the auditors noted the optimization of internal relationships and communications between the structural divisions of the enterprise.

Expansion of the presence

Another important event was started at the end of 2020 of a new site for the production of packaging for the company's products in the Shakhovskaya city district of the Moscow region. The purpose of creating a site on the new territory was the need to free the existing areas for the expansion of the pilot production, as well as the possible expansion of production in neighboring regions by searching for territories with the most effective investment climate. In the premises rented for the new production site, repair works were carried out to ensure the necessary technological conditions, as well as conditions for comfortable work and rest of employees of the enterprise.

In 2021 we will continue the work we started and I am sure, we will get the economic effect that we planned to achieve when starting production at a new site in the Shakhovskaya city district. In conclusion I would like to note that all the results achieved in 2020 became possible only thanks to the purposeful coordinated work of the entire stable of the enterprise. With that said the groups of like-minded people created by the heads of structural divisions in their areas of activity have shown their effectiveness based on the professionalism and high level of competence of each stable member.

On behalf of Izolyator management I express gratitude all the employees of the enterprise for their work and input in achieving common goals!

Cooperation with partners is our priority

Ivan Panfilov,
Commercial Director
1st Deputy CEO at
Izolyator

Izolyator held an annual report of its commercial division, dedicated to the results of work with partners in the past period and plans for the coming year. CEO of Zavod Izolyator Alexander Slavinsky and Alexander Sorokin, one of the founders of Izolyator, as well as heads of structural divisions of the enterprise listened to the reports of the sales team representatives.

Every speaker touched on the limitations, in one way or another, dictated by the COVID-19 epidemic, and those measures that allowed the company in those conditions to fulfil all the commitments made for partners achieving all the goals as planned a year ago.

The accomplishment of the assigned tasks became possible thanks to a deeply thought-out set of measures to ensure the continuous operation of the enterprise and the strict fulfilment of all contractual obligations. The most important of these measures were organizational and preventive measures to counteract and suppress viral activity on the territory of the enterprise.

Prompt implementation of the remote mode of work with partners of Izolyator all over the world was a no less important factor. Modern videoconferencing system allowed not only to conduct a continuous and productive dialogue, coordinate interaction at any level of management, but also successfully develop further cooperation, discuss and plan promising joint projects.



Presently, we are studying a possibility of marketing a refreshed brand, which will embrace all activities and business lines of our company.



Annual report of the commercial division of Izolyator on the results of 2020 and plans for the next period

The key areas of Izolyator's development in the coming years:

- ✓ expansion of presence and increase in the volume of supplies of high-voltage bushings with RIN-insulation to electrical enterprises and energy companies in Russia, neighbouring countries and overseas;
- ✓ increase in sales of bushings for high and ultra-high voltage classes;
- ✓ expansion of presence in neighboring countries, including the creation of joint ventures;
- ✓ repositioning Izolyator on the power equipment market in order to consolidate newly created enterprises under a single brand reflecting the qualitative expansion of the product line, long-standing experience, innovative approach and international status of the company.



Assembly of the first high-voltage bushing at the Russian-Indian joint venture Massa - Izolyator - Mehru

When the name is both a brand and responsibility.

Izolyator is a complete-cycle manufacturer. We produce equipment for the high-voltage market in 10 to 1150 kV range. It is a very narrow and highly professional market. A company's name here is its experience, its responsibility and reputation, because all market players are visible and all power equipment OEMs and consumers of their products are well-acquainted.

Our main consumers are energy enterprises, generation facilities of all types, transmission and distribution of electricity. Basically, these are either private or state-owned companies, since the transmission of electricity is a politically important area for ensuring the vital activity of the country. Also, in one of the areas of our business, consumers are manufacturers of high-voltage transformer equipment.

Throughout 125 years of its history, our company has specialized in the production of various types and voltage classes of high-voltage bushings. We not only develop bushings designs, produce them, but also test those products: we have a full-cycle testing laboratory. The high-voltage test center is certified according to all international standards.

Qualitative growth

In Russia our products work reliably in all corners of the country. Izolyator bushings are installed in power systems of more than 30 countries of the world. Now one of the priority tasks is the expansion of international cooperation, the global presence of our products. In terms of priority, the markets of Asia and the countries of the Persian Gulf were selected first, because the energy sector in Europe is already quite well developed and does not require its further modernization. At the same time the power systems of Asia and the countries of the Persian Gulf, for example, India, China, Malaysia, UAE, Saudi Arabia are in constant development. Compared to the Russian market, the market in these regions is 10 times larger, and investments in these regions are 100 times bigger. But in order to participate in foreign projects, especially in order to be able to supply equipment to a state-owned company, it is necessary to pass certification - in most Asian state-owned companies we have already done that. It is a huge amount of work - the certification process can take years: delegations come, study all stages of production, check all certificates, financial statements, the stability of the company, consider bank guarantees. We take all these stages and checks very seriously.

About three years ago we took a decision to have a closer look at the possibility of cooperation with Indian partners. As a result, at the end of 2019, we fully registered a joint venture with an Indian company, where we have a leading 65% stake. We have entered into an agreement with a major manufacturer of electrical equipment - Mehru. This year despite the pandemic we completely built and established on the territory of India a production facility for assembly and testing of high-voltage bushings up to 220 kV. The joint venture was named MIM (Massa Izolyator Mehru), and we are convinced that this cooperation will bring enormous benefits not only to the Indian power industry, but also to the development of the world power industry in general.

Not only high-voltage bushings

Throughout its history, our company has specialized in the production of high-voltage bushings. Two years ago, we decided to expand our product line and offer our customers a new product. A similar to the technological process area was chosen - this is the production of cable joints. Very sophisticated equipment, at the moment no one makes them locally in Russia. Last year, we launched the assembly and testing process of the first cable fittings. This direction was not present in Russia. Thus, Russia fell under dependence on foreign suppliers. And now we have done it. We have launched a complete technological process for the manufacture and testing of cable joints of various types and voltage classes. The new enterprise was named Izolyator-AKS.

Strong brand - new opportunities

Presently we are studying a possibility of rebranding, which will embrace all activities and business lines of our company. We want to make it clear to both external partners and our employees what Izolyator represents today, what its goals are, what its position is.

And I am convinced that the century-old experience of Izolyator will serve as a powerful support for the creation of a single strong brand capable of having its own weight in the Russian and international energy market.

The new company is all ready to go!

**Andrey Shornikov,
Head of International Business
Development Department
Izolyator**

All Izolyator employees are used to set ambitious goals and it turned out to be our significant advantage in 2020. Yes, we also had to revise our plans, but our mobility, readiness for dialogue helped us to cope with the tasks set.

Within the pandemic we totally equipped and prepared for launch the Russian-Indian joint venture Massa - Izolyator - Mehru. The process of forming a full-fledged enterprise ended with certification for voltage class up to 420 kV. We have mastered all kinds of communication means, regularly holding conference calls: we were always in touch and ready to discuss progress. India acted tough quarantine and literally did not work there for a while nothing: but as soon as the restrictions were lifted, we nerami began to work actively.

Today we are in carrying out type testing of core products that will be made at the enterprise. There is a really wide range of tasks ahead, and some of them are connected among others with marketing communications: we hope that after the upcoming rebranding, Izolyator and its assets will be able to act as a truly uniform powerful front.



Within the pandemic we totally equipped and prepared for launch the Russian-Indian joint venture Massa - Izolyator - Mehru.

With new plans

At a remote meeting, the board of directors of the Russian-Indian joint venture Massa - Izolyator - Mehru summed up the results of work in 2020 and approved the plan for 2021.

At the beginning of the meeting, which was held via videoconference, the participants were welcomed by Chairman of the Board of Directors Alexander Slavinsky, Managing Director Sandeep Prakash Sharma and Director of Strategic Development Ivan Panfilov.

Then Deputy Chairman of the Board of Directors Dr. Ashok Singh, based on an analysis of the results of the 2020 business plan, presented to the Board of Directors the resulting financial and economic indicators of the MIM JV and summarized the impact of the COVID-19 pandemic on the operation of the enterprise. Continuing the topic Business Development Director Andrey Shornikov also touched upon the factors of coronavirus infection that had



The end-of-year remote meeting of the Board of Directors of the Russian-Indian joint venture Massa - Izolyator - Mehru on the results of work in 2020 and plans for 2021

one or another impact on the bottom line.

Then Sandeep Prakash Sharma and Technical Director Pavel Kiryukhin focused on the achievements that allowed to fully prepare JV MIM for the start of production and sales of products.

The next speaker was Director of Marketing, Sales and Sourcing Mandeep

Prakash Sharma, who presented key information on business planning for 2021.

At the end of the meeting the concept of promoting the brand of the joint venture MIM was proposed and approved combining the many years of experience of two stably developing companies Izolyator and Mehru Electrical & Mechanical Engineers (P) Ltd. ■

Official supplier status of one of the largest power grid companies of the world

The Russian-Indian joint venture Massa - Izolyator - Mehru set up for the production of high-voltage bushings on the territory of India. It has been approved as an official supplier for the needs of the Indian state energy company Power Grid Corporation of India Limited.

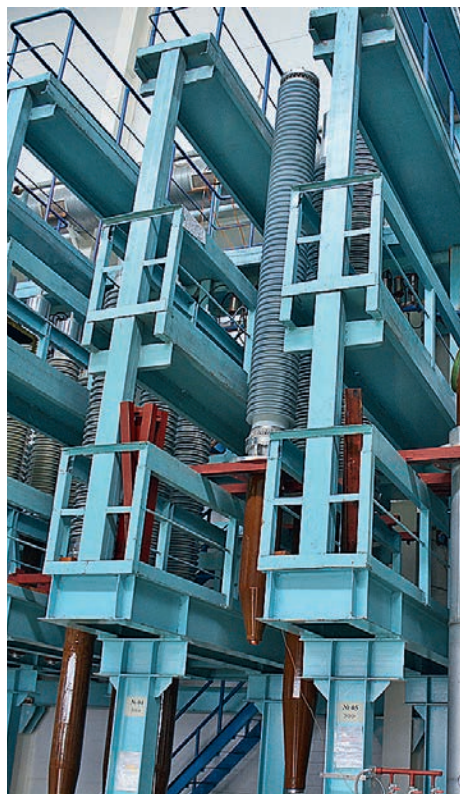
The official supplier status is granted for product range with internal RIP insulation up with maximum operating voltage to 420 kV.

This event was a natural result of a large and diverse work that was carried out day by day for several years in close cooperation with Indian colleagues.

We are grateful to Power Grid Corporation of India Limited for their trust and productive cooperation!

Power Grid Corporation of India Limited (PowerGrid) is an Indian state-owned power grid operator that builds, operates and maintains a transmission grid system.

PowerGrid is one of the largest power transmission companies in the world. The company is specialized in the construction and operation of power grids in India itself, as well as in the development and strengthening of ties with neighboring countries such as Nepal, Bhutan, Bangladesh, Sri Lanka.



Izolyator high-voltage bushings on technological racks at the assembly shop of Izolyator

The main activity of the company is the transmission of electricity between the states of India through the network of ultra-high voltage AC transmission lines 765, 400, 220, 132 kV and high voltage DC ± 500 kV lines through the ISTS interstate transmission system.

The company has a dominant position in India's national transmission system:

- operates up to 90% of interstate and inter-regional networks;
- generates up to 50% of the electricity generated in the country;
- the operational availability of the power transmission network is over 99%;
- of the national power system through the subsidiary POSOCO.

The current interregional transmission volume of the State Electricity System is about 38 550 MW.

The company owns and manages the power transmission network system, which consists of 108.128 thousand km of EHV networks, 185 EHV AC and DC substations with a total installed transformer capacity of 206 953 MVA.

PowerGrid is a centrally managed public sector enterprise with 57.90% of the shares held by the government and 42.10% by other investors. PowerGrid is headquartered in Gurgaon. ■

The first one, go!

The first shipment of a 420 kV transformer bushing was sent to the Mexican company Comercial Especializada de Materiales, S.A. de C.V. in November 2020.

These high-voltage bushings with solid internal RIP insulation are intended to replace obsolete analogues on a transformer, which is being repaired at CEMSA.

The agreement on the supply of Izolyator high-voltage bushings for this project was reached two months earlier during bilateral talks via videoconference, which were organized and conducted by Dmitriy Orekhov, Head of Sales — Asia & America at Izolyator.

The first shipment is the result of fruitful collaboration of both parties. Izolyator and CEMSA will continue their interaction within the framework of this project, as well as an active search for new directions for the development of mutually beneficial cooperation. ■



Comercial Especializada de Materiales, S.A. de C.V. in Mexico



Testing of bushing under operating voltage of 420 kV prior to shipment

On recent achievements and ambitious plans



One of sections of the presentation – successful tests of 420 and 800 kV Izolyator bushings in Russia and India

tor plant and at the test benches of the Indian State Power Research Institute (CPRI) in Bangalore and Hyderabad.

The audience was very interested in the presentation of the Massa - Izolyator - Mehru joint venture created by the Russian company Izolyator and the Indian Mehru Electrical & Mechanical Engineers (P) Ltd. for the organization in India of the production of high-voltage bushings with solid internal RIP-insulation. The speakers presented the product range, advantages and application of products of both enterprises at the power generation facilities of NTPC Limited.

At the end of the online presentation detailed answers were given to all ques-

A remote presentation of Izolyator plant Massa - Izolyator - Mehru joint venture and their products for specialists of the Indian state energy company NTPC Limited took place in October 2020.

The audience of NTPC Limited was made up of both line technical personnel and heads of engineering departments.

At the Izolyator plant the videoconference presentation was made by the Head of the International Business Development Department Andrey Shornikov, Head of Sales — Asia & America Dmitriy Orekhov and Assistant Olga Parnyuk.

The event was attended by representatives of the Russian-Indian joint venture Massa - Izolyator - Mehru Pvt. Ltd. - MIM: Deputy Chairman of Board of Directors Dr. Ashok Singh, Director of Marketing, Sales and Purchasing Mandeep Prakash, Commercial Director Ashwani Aggarwal.

The presentation covered all the latest



Remote presentation of Izolyator plant and its product range for technical specialists of the state Indian power company NTPC Limited

achievements of Izolyator in international cooperation, including successful type and seismic tests bushings for 420 and 800 kV, which passed in three stages: at the Izolya-

tions from the audience. The past event was another important step towards further development of Russian-Indian cooperation in the field of energy. ■

In the light of the latest trends in the European market

A remote working meeting took place the Polish energy company Eltel Networks.

Eltel Networks was represented by the Purchasing Manager of components Ireneusz Zawadski, Manager of International Business Development Department Alexander Znamenskiy - Izolyator respectively.

The parties discussed the directions and prospects of joint activities, taking into account the trends in the electrical market in Poland and Europe as a whole.

General working plans for 2021 were outlined, where special attention was paid to the development of a long-term cooperation with the Polish state power grid company Polskie



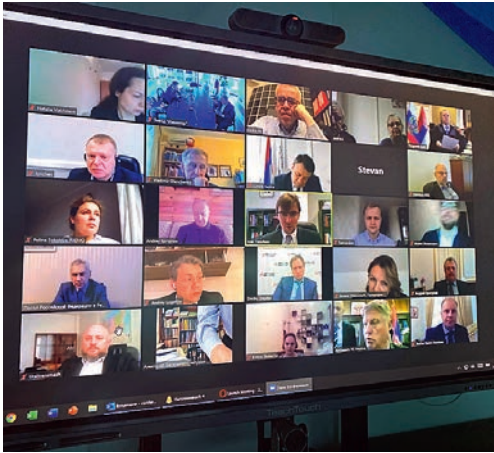
Remote working meeting of the companies Eltel Networks from Poland and Izolyator, represented by Purchasing Manager, Components Ireneusz Zawadski and Alexander Znamenskiy, respectively

Sieci Elektroenergetyczne S.A. - a key partner of Eltel Networks.

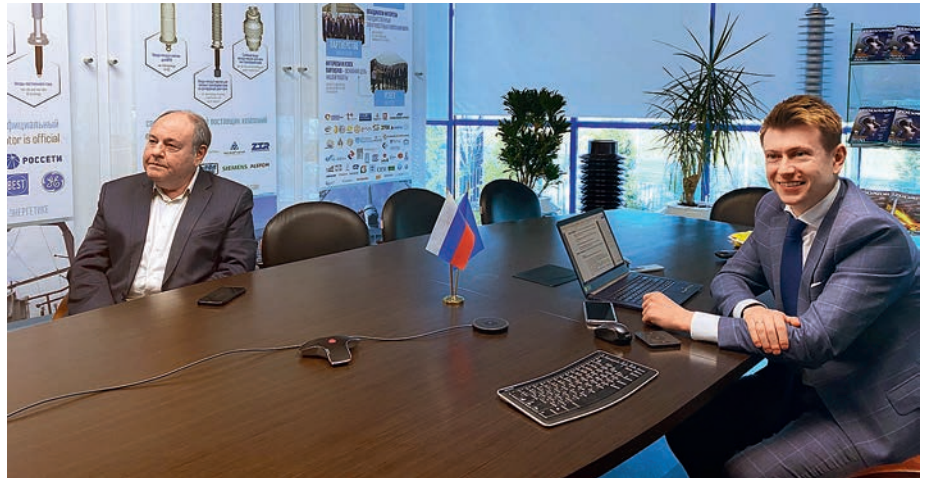
To meet the needs of key customers - the Polish state power grid company Polskie Sieci Elektroenergetyczne S.A. and distribution

networks of Poland, Eltel Networks are increasingly introducing new technologies, including in the 220 and 400 kV equipment range, as well as expanding the range of services provided. ■

21 | Between Moscow and Belgrade



Participants of the online seminar – representatives of government agencies and business communities of Russia and Serbia



Izolyator representatives at the online seminar Russia and Serbia: prospects of enhancing cooperation in the modern stage

The Russian-Serbian cooperation is especially relevant today and it can be expected to develop further. Thus, Izolyator representatives took part in a number of meetings with Serbian partners.

Cooperation opportunities

The videoconference was organized by the Russian International Affairs Council with the participation of the Business Council for Cooperation with Serbia of the Chamber of Commerce and Industry of the Russian Federation and the Trade Mission of the Russian Federation in the Republic of Serbia.

Ambassador Extraordinary and Plenipotentiary of the Russian Federation to the Republic of Serbia Alexander Botsan-Kharchenko; Ambassador Extraordinary and Plenipotentiary of the Republic of Serbia to the Russian Federation Miroslav Lazanski; RIAC General Director Andrey Kortunov; Director of the Business Council for Cooperation with Serbia, Head of the International Cooperation Department of the Rosseti Group Andrey Logatkin addressed the audience with a welcome speech at the opening of the event.

The seminar was also attended by representatives of People's Assembly (Parliament) of the Republic of Serbia, Chamber of Commerce and Industry of Serbia and its representative office in Russia, Oil Industry of Serbia company, National Research University Higher School of Economics, Institute of Europe of the Russian Academy of Sciences, Institute of Political Research in Belgrade, the Moscow State Institute of International Relations (University) of the Ministry of Foreign Affairs of the Russian Federation, as well as companies representing Russian and Serbian business.

Izolyator plant was represented at the seminar by Alexander Znamenskiy, International BDM, and Vladimir Ustinov, Director of Izolyator plant's Moscow branch.

After the speakers' speeches, the seminar participants discussed the current status of relations between Moscow and Belgrade; the structure of the Serbian economy and Russian-Serbian trade and economic cooperation; the opportunities that Russian and Serbian companies see in bilateral cooperation; obstacles to the development of further interaction, as well as how the economic context of relations between Moscow and Belgrade is changing at the present stage.

The participants of the seminar agreed that the potential for economic cooperation between Russia and Serbia is far from being exhausted; it needs to be actively promoted, given the excellent existing interaction. The experts identified the key areas of activity for the near future, called to give new impetus to economic cooperation between Russia and Serbia.

The power industry is a landmark industry

A remote joint meeting of the Business Council for Cooperation with Serbia and the Serbian Chamber of Commerce and Industry became one more step towards the development of that area. Pavel Livinsky, Chairman of the Business Council for Cooperation with Serbia, Head of the Rossiiskie Seti Group of companies, and Marko Chadezh, President of the Serbian Chamber of Commerce and Industry, co-chaired the meeting via video mode.

The event was attended by Chairman of the Serbian side of the Russian-Serbian Intergovernmental Committee for Trade, Economic, Scientific and Technical Cooperation, Minister for Innovation and Technological

Development of Serbia Nenad Popovic; Head of the Trade Mission of the Russian Federation in the Republic of Serbia Andrey Khripunov, Director of the Business Council for Cooperation with Serbia, Head of the Department of International Cooperation of the Rossiiskie Seti Group of companies Andrey Logatkin, as well as representatives of more than 60 industrial enterprises of Russia and Serbia. Izolyator was represented at the meeting by Alexander Znamenskiy, International Business Development Manager.

In his opening remarks, Pavel Livinsky noted that the pandemic had an impact on the interaction of the two countries, but it was not dramatic. For the 9 months, the trade turnover amounted to almost \$ 1.5 billion.

The implementation of a large-scale projects in Serbia with the participation of Russian companies in various sectors, including the fuel and energy complex, transport, mechanical engineering, the chemical industry, information technology, continues.

One of the promising areas is the power industry. The Rosseti Group is considering options for synergy in such areas as digital transformation, the development of green energy and storage systems, electromobility, building smart grids, and managing the networks of large cities.

"The Business Council is ready to help companies from both sides in the implementation of joint and mutually beneficial initiatives. I am convinced that cooperation will continue to develop. Russian business circles can and are ready to share their experience and promising developments", noted Pavel Livinsky.

During the meeting, the participants discussed the entire range of promising areas for the development of Russian-Serbian economic, trade and industrial cooperation.

Sharing experience is a path to optimal decisions

**Maxim Osipov,
Director for Neighboring
Countries Sales Izolyator**

Despite the negative impact of the coronavirus pandemic COVID-19 on the Electricity Sector and changes that happened in the market, our sales area has succeeded to not only fulfill, but also overachieve all the set commercial and strategic targets.

In that situation, when it was necessary to take a fresh perspective at many aspects of doing business, we were forced to look for new ways to maintain direct contact with our consumers, because for our business direction personal meetings with partners play if not the key, but a very important role - only by staying in touch and sharing operating experience with our partners and consumers, we can improve our technologies and offer better solutions.

Through the technical equipment of the plant and professional technical support, we managed to transfer communication with our partners online and conduct all scheduled meetings and technical seminars in the format of online conferences. However, despite the need to meet new challenges and trends, I believe that this format of communication is only suitable for maintaining communication with partners, contact with whom has already been established, and for affiliating new contacts there is nothing more productive than personal meetings.

Despite the fact that the coronavirus pandemic allowed us to make sure once again that the Izolyator stable is more united than ever and ready to face any challenges, I hope that soon the borders will be open and it will be possible to hold face-to-face meetings and seminars again.

In general, all of us, one way or another, will have to admit that the world has changed and we have changed with it, even if we have not yet fully felt it. One should not be afraid of this, because in the end we have become stronger — and this is the key point.



The Izolyator stable is more united than ever and ready to face any challenges.

From acquaintance to actual wins

A remote presentation of Izolyator plant and its products for technical specialists of the Moldovan State Enterprise Moldelectrica took place in October 2020. On the Moldovan side, the moderator of the dialogue was Vladimir Sitnikov, Head of the insulation and surge protection service at Moldelectrica State Enterprise.

From the audience of the plant Lead Technical Support Specialist for the commercial division Viktor Kiryukhin and the Manager for Neighboring Countries Sales Anna Zubakova gave the presentation in the videoconference mode.

The presentation consisted of two inter-related parts. In the first part of presentation, Moldelectrica specialists got acquainted with the company historical milestones from the foundation and development of the enterprise through to modern achievements in the Russian electrical market and in international



Remote presentation of Izolyator plant and its products for technical specialists of the Moldovan State Enterprise Moldelectrica

cooperation, the most modern production and testing equipment.

In the second part of the presentation Innovative developments: high-voltage bushings with RIN-insulation, the advantages and prospects of using bushings with especially moisture-resistant solid internal RIN-insulation were presented as well as design and key technological stages of their production and

testing; nuances of storage, operation and diagnostics procedures of such bushings.

At the end of the presentation detailed and comprehensive answers were given to all questions from specialists of SE Moldelectrica regarding the topics discussed. According to all participants, the event went in an atmosphere of high professional interest, open dialogue and with great mutual benefit. ■

Fostering cooperation

In October 2020 management representatives of the Belarusian trading company Sagrat visited Izolyator plant: founder Ali Churaev and Commercial Director Murad Churaev.

The guests were received by CEO of Zavod Izolyator LLC Alexander Slavinsky, Chief Executive Officer of Massa LLC Sergey Moiseev, Commercial Director Ivan Panfilov and Director for Neighboring Countries Sales Maxim Osipov.

After briefly summing up the interim results of successful joint activities, the parties analyzed the latest trends in the market of electrical equipment in Belarus.

The results of the analysis served as a basis for discussing long-term plans and strategies for further development of international cooperation between the Sagrat enterprise and the Izolyator plant.



The working meeting with the management of the Belarusian trading company Sagrat (L-R): Founder Ali Churaev, Commercial Director Murad Churaev, Ivan Panfilov and Maxim Osipov



Sagrat and Izolyator are long-term reliable partners

in energy resources on the basis of their most efficient use while reducing the burden on the environment.

The fuel and energy complex of Belarus includes systems for the extraction, transportation, storage and production of all types of energy carriers. About 85% of the energy resources used in the country's economy are imported.

The core of the fuel and energy complex is the electric power industry. This is one of the leading sectors of the economy, in which the traditionally high level of technical and engineering potential of Belarus is concentrated. ■

The working meeting of the management representatives of the two companies took place in a warm and trusting atmosphere.

Sagrat supplies power equipment and electrical products to Belarus. The company is headquartered in Minsk.

Izolyator plant and Sagrat have long-term close and successful cooperation.

The long-term goal of the development of the fuel and energy complex of Belarus is to meet the needs of the economy and the population of the country



A 200 MVA autotransformer with Izolyator HV bushings at the 330 kV Baranovichi substation in Belarus



Dmitriy Orekhov,
Head of Sales — Asia & America
at Izolyator



Izolyator plant is a continuous-cycle enterprise and the fact that we were able to go avoid going into quarantine allowed us to successfully complete work on the planned projects. In addition to working with partners with whom we have been successfully cooperating for several years, we have managed to achieve a real breakthrough. For example, the first shipment of a 420 kV transformer bushing to the Mexican company Comercial Especializada de Materiales, S.A. de C.V. was sent. We also received the largest order in the history of our company from India from BHEL. All negotiations took place online, but it turned out to be even an advantage, although we are certainly more accustomed to personal meetings.

Distance communication is a general unconditional trend of the last year. We were able to make presentations via videoconferencing: for example, a remote presentation of the Izolyator plant, the Massa - Izolyator - Mehru joint venture and their products for specialists of the Indian state energy company NTPC Limited was made.

We have something to be proud of: even in a pandemic, we carried out successful seismic tests of 420 and 800 kV bushings, and we can tell you about it with pleasure. I am sure that no matter how the situation with the pandemic develops in the future, we will come out victorious from it.



Alexander Znamenskiy,
Manager of International Business
Development Department



We have repeatedly been convinced by experience that in any situation you can find positive aspects. Thanks to the ubiquity of online platforms and messengers such as Zoom, WhatsApp, Skype, we were able to not just stay in touch with partners during quarantine, but also get new contracts in the European market - in Poland and Italy. The fact that the Izolyator plant was operating when our European competitors stopped production was also our advantage and we managed to gain a foothold in some positions.

Even against the general background of a decrease in demand associated with the pandemic, thanks to a change in the strategy of working in the external market, we managed to achieve the goals set for 2020. Thus, the company for the first time supplied 500 kV ultra-high voltage bushings for the needs of the networks in Turkey and Slovakia.

Among the most important tasks facing us in 2021, there is the implementation of the so-called deferred demand: projects that were planned for 2020, but for external reasons did not take place. I am convinced that in 2021 we will be able not only to neutralize some omissions of the twentieth year, but also to implement promising projects and achieve a truly quality growth.



Anna Zubakova,
Neighboring Countries Sales
Manager at Izolyator



During the international coronavirus pandemic, the life-supporting role of the electric power industry was clearly demonstrated, however, the implementation of measures to prevent the spread of coronavirus had negative impact on the power industry. Therefore, in conditions when our partners were forced to reduce the costs of programs for the replacement and repair of power equipment, our task was to meet the entire volume of our partners' needs for high-voltage bushings as soon as possible on mutually beneficial terms to ensure the uninterrupted operation of the power systems of the neighboring countries.

In 2020, we managed not only to achieve all the set commercial goals, but also to carry out a number of key deliveries. For example, the first delivery of 110-330 kV high-voltage bushings with RIN-insulation was carried out. A number of complex supplies of 110-500 kV transformer, reactor and wall bushings for the needs of KEGOC JSC and generating companies that are part of Azerenergy JSC were carried out.

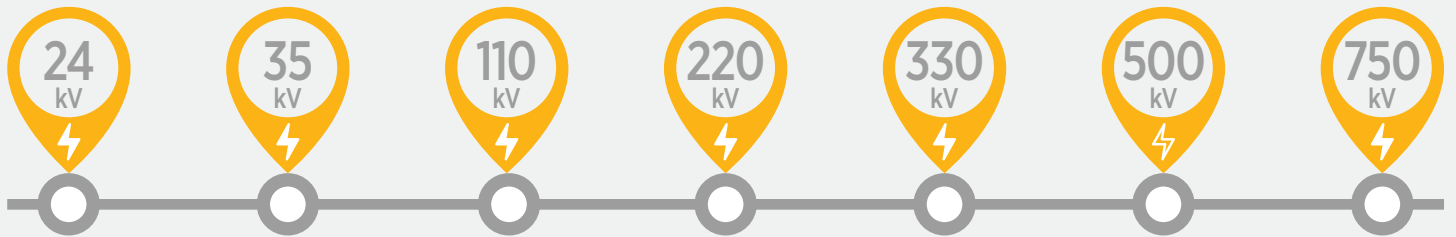
We appreciate our partners for their interest and feedback, which are a solid basis for successful development of cooperation.

We, as before, will continue to make every effort to carry out shipments of bushings on time and in strict accordance with the terms of contracts.

EXPORT IN 2020

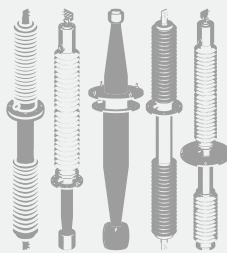
DELIVERIES OF BUSHINGS

VOLTAGE CLASSES OF BUSHINGS:



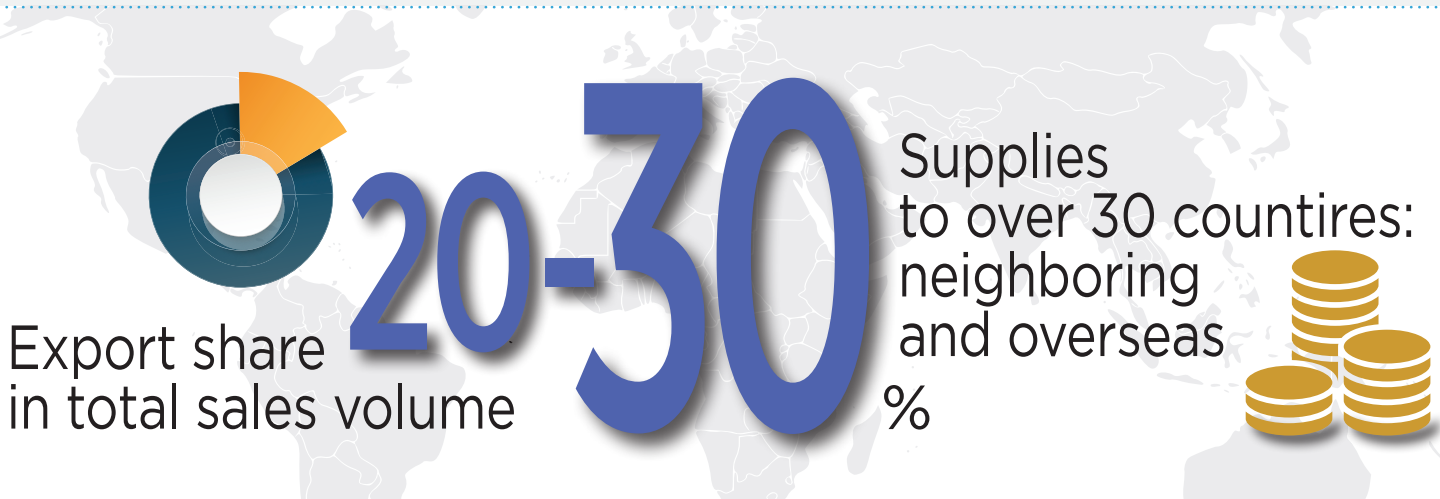
Over
668

bushings delivered
in 2020
to neighboring
countries



NEIGHBORING COUNTRIES:

Azerbaijan	Lithuania
Armenia	Moldavia
Belarus	Mongolia
Georgia	Uzbekistan
Kazakhstan	Ukraine
Kyrgyzstan	Estonia



Over
304

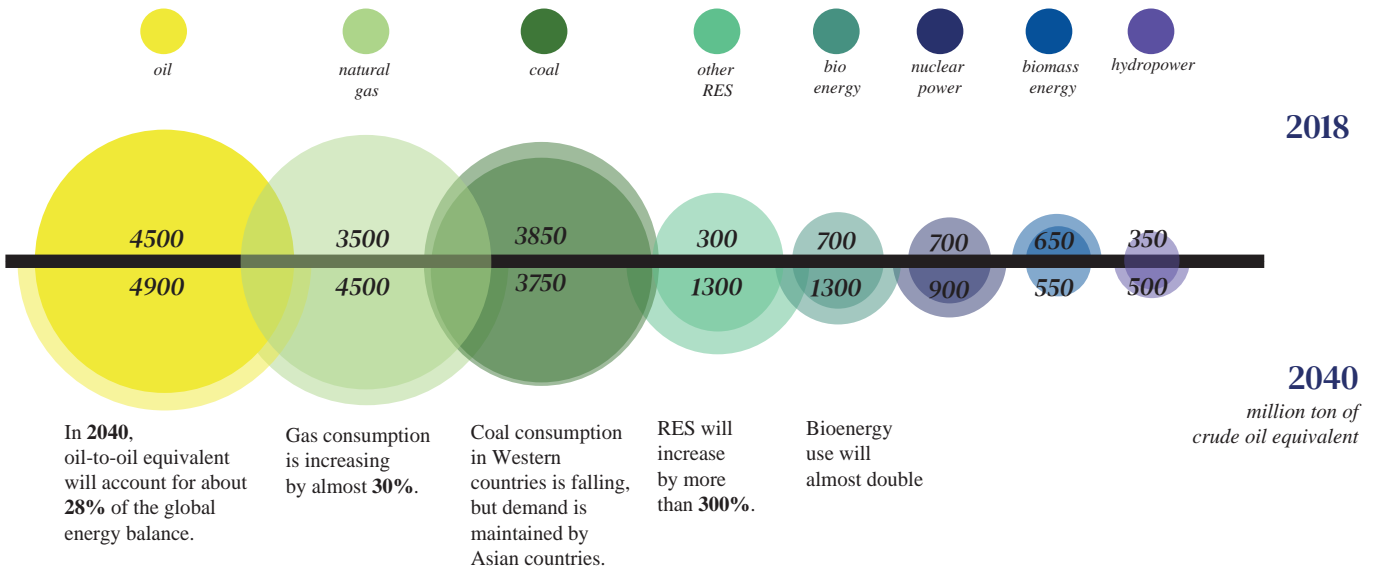
bushings delivered
in 2020
abroad



OVERSEAS:

India	Poland
Vietnam	China
Slovakia	Portugal
Turkey	Croatia
Iran	

State Energy Policy



2020

reports

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- South Korea
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- Saudi Arabia

10 countries

5 regions

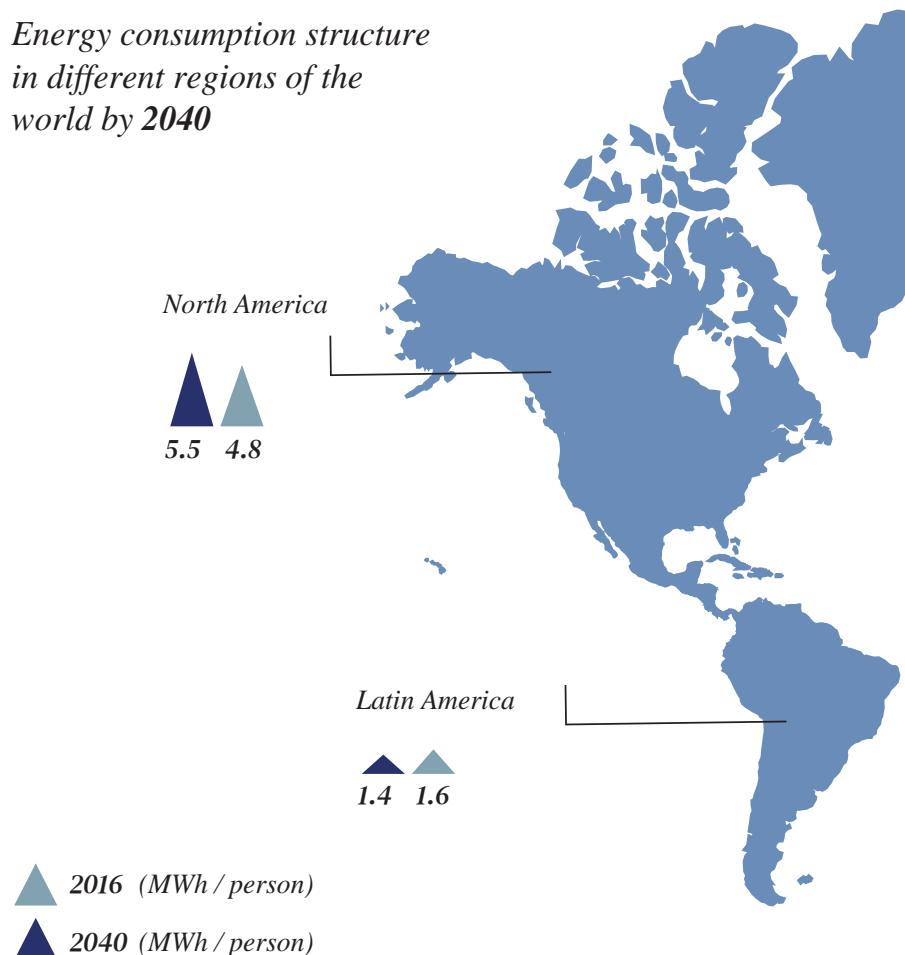
30 chapters

over **450** pages of report

2 big projects

over **20** areas of analysis of a country

Energy consumption structure in different regions of the world by 2040



2021 plans

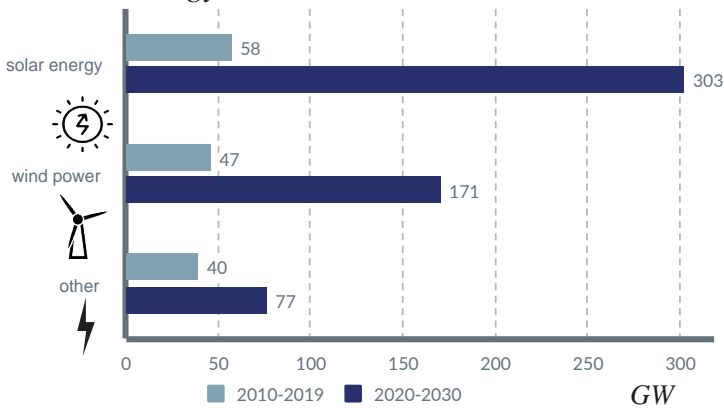
Expansion of the global power grid in 2009 - 2040:



2009-2019 - 9 mln km

2020-2030 - 16 mln km

Average annual capacity increase of renewable energy sources



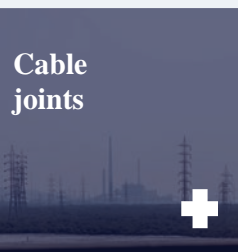
Kazakhstan
Ukraine
Lithuania
Latvia
Estonia



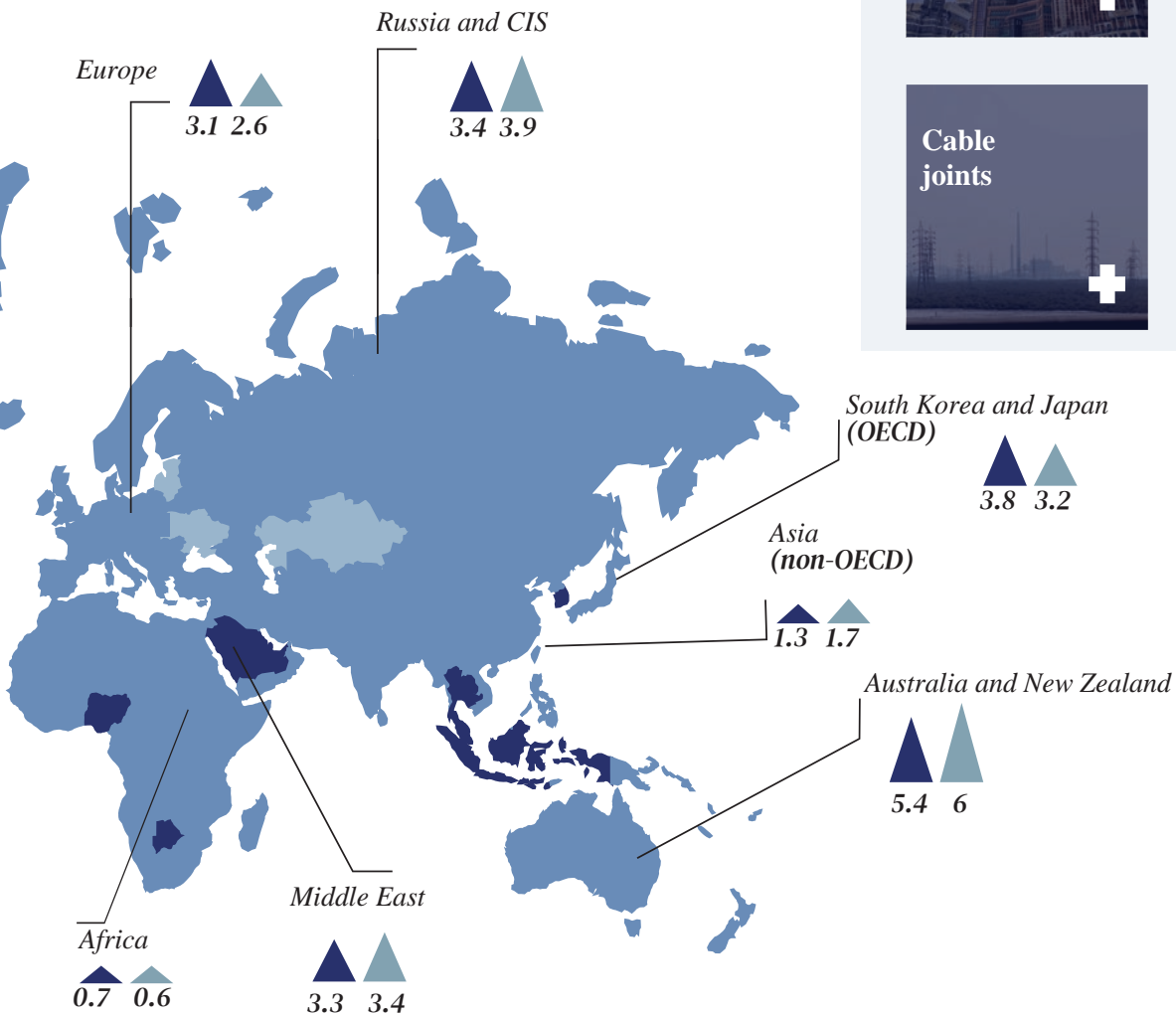
Energy Loop Project
Vietnam
Myanma



KSA Project
Continued work on the JV establishment



Cable joints
Analysis of cable plants



Global cooperation



Experts from Russia – representatives of Izolyator plant – are remotely participating in the 84th IEC General Meeting



Representatives of Izolyator plant remotely took part in the 84th IEC

General Meeting of the International Electrotechnical Commission, which was held mid-November 2020.

Within the framework of the session, moderated online meetings were held in various areas of IEC activities.

Experts from Russia in IEC (work group JMT 5 of subcommittee 36A) CEO of Zavod Izolyator LLC Alexander Slavinsky and

Director of the Moscow branch of Izolyator plant Vladimir Ustinov took part in online meetings on cybersecurity, risk and quality management, ensuring material efficiency and attraction of young specialists.

Special attention of the participants of the 84th IEC General Meeting was paid to the COVID-19 pandemic in 2020: experts agreed that a significantly undermined society and world economy can only be restored by widespread cooperation. The same is relevant to other global problems: rapid urbanization, climate change, unsustainable universal access to energy and depletion of natural resources, inadequate risk and quality management, health problems, curbing economic growth and others.

One must be able to adapt to rapidly changing realities and the many advances in technology. IEC members have the opportunity to draw on the unique know-how and knowledge of thousands of experts from almost every country and industry in the world. ■

Trend - environmentally safe machine building



Izolyator plant representatives – participants of the meeting of the Committee for Power, Oil and Gas Engineering and New Production Technologies of the Union of Machine Builders of Russia

Izolyator plant took part in a meeting of the Committee on Power, Oil and Gas Engineering and New Production Technologies of the Union of Machine Builders of Russia with the agenda of “New opportunities for diversification of the activities of power engineering enterprises and the use of import-substituting equipment that meets the requirements of the best available technologies”.

The event was held with the support of the Expert Council for Power Engineering, Electrical and Cable Industry under the Committee for Economic Policy, Industry, Innovative Development and Entrepreneurship of the State Duma of the Federal Assembly of the Russian Federation. ■

Formulating initiatives



The National Industrial Forum 2020 in Moscow

The National Industrial Forum was held in a partially remote format in the middle of December in Moscow. Izolyator took an active part in the forum's work, which was organized by the Russian Union of Industrialists and Entrepreneurs (RSPP) with the support of the Ministry of Industry and Trade of the Russian Federation.

Within the framework of NIF 2020 meetings of two work groups were held, the purpose of which was to formulate proposals of the entrepreneurial community on issues related to system-wide measures for supporting projects of industrial companies, as well as to diversifying the military-industrial

complex in the interests of large private business.

The work groups included heads of large and medium-sized industrial companies, development institutions, as well as regional executive authorities.

Izolyator was remotely represented at the forum by Dmitry Abbakumov, Deputy Commercial Director.

Following the meetings of the work groups, a plenary session was held, moderated by Igor Vdovin, a member of the RSPP Board, Chairman of the RSPP Committee on Investment Policy, Development Institutions and Export Support. ■

At the virtual round-table



Project and Risk Management at the Enterprise remote round table

Izolyator representatives took part in the remote round table "Project and Risk Management at the Enterprise", which was held within the framework of the President's program for educating management personnel for organizations of the national economy of the Russian Federation in the 2019/20 academic year. The organizers were the Educational and Scientific Center Rosseti FGC UES - MPEI and the Electric Power Engineering Center for Training and Retraining of the National Research University MPEI.

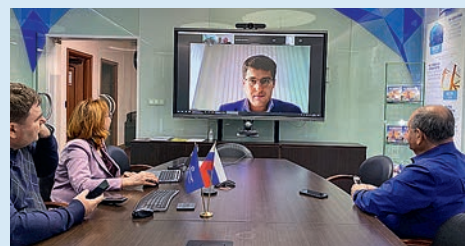
Via video conference channels the round table was attended by: Rossiiskie Seti Group, Izolyator, Izolyator-AKS cable fittings plant, Ramenskoye instrument-making design bu-

reau, pharmaceutical company Canonpharma Production, Research and Production Enterprise Biotech-M, Khimstroy, Regional Energy Company.

Dmitry Lopatin, Technical Director of Izolyator plant made a report "Project and Risk Management at the Enterprise. Izolyator-AKS. Cable accessories". Vladimir Ustinov, Director of the Moscow branch of Izolyator plant, and Ellada Ismaylova, Deputy Director General of Izolyator-AKS plant also joined the discussion.

The round table became an effective platform for experience sharing for specialists and managers of power grid and industrial enterprises. ■

Diagnostics going online



Chairman of the Council of Specialists for Diagnostics of Power Electrical Equipment at the Engineering and Technical Center UralEnergEngineering Alexey Uteпов is making a report on the work of the council

A remote working meeting of the Council of Specialists for Diagnostics of Power Electrical Equipment at the Engineering and Technical Center UralEnergEngineering took place on the 9 October 2020.

At Izolyator the online meeting was attended by:

- CEO of Zavod Izolyator LLC, Head of the National Study Committee D1 of the Russian National Committee of CIGRE, Member of the Council at ETC UEE, Dr. Alexander Slavinsky;
- Marina Vladimirova, Head of the Operations Support Service, Secretary of the Council at ETC UEE;
- Vladimir Ustinov, Director of the Moscow branch of Izolyator plant, member of the Council at ETC UEE;
- Dmitry Ivanov, Director of Testing and Metrological Assurance.

The event was held in the form of a constructive and fruitful dialogue: after comprehensive consideration and discussion on all issues of the agenda, the council took optimal decisions.

Constructive dialogue within the framework of competition

The SVEL Group organized an online Forum REAL TOK - Electricity 2021: trends, solutions, prospects in the end of December 2020. Izolyator plant participated in the event and shared their experience.

Despite the fact that most of the participants are direct competitors, a lively and constructive dialogue turned out, which indicates the maturity of the industry in general and its representatives in particular.

The speakers of the forum spoke optimistically about the results of the outgoing year, noting that despite the difficulties that arose, companies are not slowing down, but rather introducing new solutions and developing in accordance with their plans.

In his speech Alexander Slavinsky, CEO of Zavod Izolyator, emphasized that the unforeseen announcement of a pandemic in the first quarter of 2020 led to radical changes in all plans for 2020



Online Forum REAL TOK - Electricity 2021: Trends, Solutions, Prospects, organized by SVEL Group

concerning both the internal development of the company and the implementation of joint projects with the participation of numerous overseas partners.

In those conditions one of the top priorities of Izolyator was organization and maintenance

of regular remote interaction with all its partners, and especially with Russian transformer plants. At the same time the main goal remained the same and consisted in the fulfillment of all previously assumed obligations and providing maximum service level and support to all partners across the entire spectrum of arising issues.

The Izolyator's experience has shown that with the transition to the remote communication forms, the number of working contacts with partners has increased more than three times, and due to the simplicity of organizing communication sessions, the efficiency of interaction has significantly increased.

The forum was viewed by over 750 people asking over 70 questions in the chat. The full recording of the discussion can be viewed on the YouTube channel of the SVEL Group. ■



Dialogue at the international level: results of 2020



Vladimir Ustinov,
Director of the Moscow branch
of the Izolyator plant, Coordinator
of the National Study Committee D1
RNC CIGRE

The National Study Committee D1 of the Russian National Committee of CIGRE (NSC D1 RNC CIGRE) "Materials and Emerging Test Techniques" summarized results of its activities in 2020

cow branch of Izolyator plant; Dmitry Lopatin, Director of Production and Maintenance; Marina Vladimirova, Head of the Operations Support Service; Galina Ustinova, Secretary of NSC D1 RNC CIGRE, Engineer of the Moscow branch of Izolyator plant; Dmitry Ivanov, Director of Testing and Metrological Assurance was an invited specialist. In his opening remarks to the meeting participants, Alexander Slavinsky stressed that despite the difficult epidemiological situation associated with coronavirus infection, in the outgoing

The National Study Committee NSC D1 RNC CIGRE joined the annual final meeting in an online format, which RNC CIGRE holds with head of organizations - leading scientific and technical partners of the committee. Results of the year and plans and objectives for RNC CIGRE in 2021 were discussed at the meeting.

Results online

The following companies and organizations took part in the final meeting of NSC D1 RNC CIGRE, which was held remotely: Izolyator, Kazan State Power Engineering University, Ural Federal University named after the first President of Russia B. N. Yeltsin, Elec Trade M (Moscow), Ivanovo State Power Engineering University named after V. I. Lenin, All-Russian Research Institute of Metrological Service, Thermoelctrica (St. Petersburg).
Chairman of the meeting - Head of NSC D1 RNC CIGRE, representative of Russia



Izolyator plant representatives - participants of the online meeting to summarize the work of NSC D1 RNC CIGRE in 2020

in the SC D1 CIGRE, CEO of Zavod Izolyator LLC, Dr. Alexander Slavinsky. Izolyator was also represented by the following members of NSC D1 RNC CIGRE: Vladimir Ustinov, Coordinator of NSC D1 RNC CIGRE, Director of the Mos-

year, members of NSC D1 RNC CIGRE did a fruitful work. The committee meetings and the most of the events were held in videoconference mode using modern digital platforms, which made it possible to promptly discuss topical issues and make decisions together with committee members from different cities of Russia. Then Vladimir Ustinov presented to the audience the results of NSC D1 RNC CIGRE's work in 2020 and introduced the plans for 2021. As of December 2020 the committee included 5 corporate members of RNC CIGRE and 35 specialists, including 11 members in the status of individual member of RNC CIGRE.

Increasing expertise

In 2020 Associate Professor of the Department of High-Voltage Power



Remote meeting to summarize the work of the National Study Committee D1 of the Russian National Committee of CIGRE in 2020



Izolyator staff members at the online broadcast of the Women in Energy Forum, left - Marina Vladimirova

Engineering, Electrical Engineering and Electrophysics, Ivanovo State Power Engineering University, Timofey Shadrikov, PhD became a member of the CIGRE Study Committee D1, becoming one more Russia's representative in it. Representatives of NSC D1 RNC CIGRE contribute as experts in four CIGRE international work groups, including two joint work groups JWG B1 / D1.75 and JWG B1 // B3 / D1.79.

The work of the National Problem Work Group D1.1 (PWG D1.1) "Determination of markers of degradation of mineral transformer oils using infrared spectroscopy" received a special mention, the WG Leader is Professor of the Department of Electrical Power Systems and Networks of Kazan State Energy University, Doctor of Technical Sciences Marsel Garifullin. Based on the results of the research carried out in 2020, six reports were made at three conferences. Two articles have been published in the E3S Web of Conferences, indexed in the Scopus database. A patent application is currently underway. Financial support for the work of PWG D 1.1 was provided by NSC D1 RNC CIGRE.

Among the international formats the CIGRE session is the key one. This year from August 24 to September 3 an electronic session of CIGRE (CIGRE e-session 2020) took place, which, using video conferencing, brought together more than two thousand delegates from 65 countries. Izolyator plant representatives and NSC D1 RNC CIGRE members remotely participated in study committees webinars, training workshops and seminars, which were held in accordance with the technical program of the session.

The Women in Energy Forum (CIGRE WiE), held as part of the CIGRE electronic session, was attended by members of NSC D1 RNC CIGRE Marina Vladimirova and Professor of the Ural Federal University named after the first President of Russia B. N. Yeltsin, Doctor of Technical Sciences Irina Davidenko.

In 2020 the interaction of NSC D1 RNC CIGRE and young specialists (students, postgraduates) continued. These are the annual qualification rounds of the Case-in International Engineering Championship, in which experts from the committee took part as experts, and international student Olympiads held by the country's leading universities.

In 2020 members of NSC D1 RNC CIGRE

published 40 scientific articles in scientific and technical journals, including in the E3S Web of Conferences publication, as well as in publications recommended by the Higher Attestation Commission under the Ministry of Science and Higher Education of the Russian Federation. Two patents were obtained, and one patent application filed.

In 2020 the Subcommittee 36A "Insulated bushings" of Technical Committee 36 "Insulators" of the International Electrotechnical Commission (IEC / Technical Committee 36 Insulators / Subcommittee 36A Insulated bushings) resumed its work. The experts from Russia in the JMT 5 working group of Subcommittee 36A (Subcommittee 36A / Joint Maintenance Team 5) are CEO of Zavod Izolyator LLC Alexander Slavinsky and Director of the Moscow branch of Izolyator plant Vladimir Ustinov.

Vladimir Ustinov concluded his speech with a list of NSC D1 RNC CIGRE events scheduled for 2021.

Alexander Slavinsky thanked those present for the fruitful work in the outgoing year, wished everyone a Happy New Year and wished sound health and creative success.

Alexander Zinovievich stated that in 2020 most of the events were held remotely thus excluding an irreplaceable live communication. In this regard he hoped that the next year would become more favorable for face-to-face dialogue and joint problem solving, and this, in turn, it would allow raising the work of the committee to an even higher level.



Experts in the online conference format at Izolyator plant take part in the qualifying stage of the Student League of the VIII International Case-in Engineering Championship in the Power Engineering section, in the center - Vladimir and Galina Ustinovs, employees of the Moscow office of Zavod Izolyator LLC

125 years



IZOLYATOR

PARTNERSHIP GEOGRAPHY 2020 23 COUNTRIES

-  Azerbaijan
-  Moldova
-  Armenia
-  Mongolia
-  Belarus
-  Poland
-  Vietnam
-  Portugal
-  Georgia
-  Russia
-  India
-  Slovakia
-  Iran
-  Turkey
-  Kazakhstan
-  Uzbekistan
-  Kyrgyzstan
-  Ukraine
-  China
-  Croatia
-  Lithuania
-  Estonia
-  Mexico



MEXICO



PORTUGAL






-  Kentau transformer factory
-  Togliatti transformer
-  Vitebskenergo
-  GK Dnestrenergo
-  Trafo Technika

-  R&S ZREW
-  PMTT. High-voltage solutions
-  SWEL Group
-  TBEA Co., Ltd.
-  Comercial Especializada de Materiales

-  PowerGrid
-  Siemens AG
-  Fortum
-  Uralelectrotyazh mash
-  Superox, CJSC



-  Electricgeneration INTER RAO
-  Gomelenergo
-  Chirchik transformer plant
-  Rosseti Moscow region
-  VNIIR Hydroelectric

-  Electricgeneration INTER RAO
-  ATEF Group
-  Unipro
-  Production Enterprise Electrozavod JSC
-  Osteron

-  Rosseti FGC UES
-  Electroshield Samara
-  Energy Standart
-  Rosseti

Reliable partners in any circumstances

**Maxim Zagrebin,
Director of OEM Sales
at Izolyator**

The need to reconsider priorities, set new goals and determine how to achieve them is the key challenge that the world in general and our company in particular faced in 2020. Izolyator plant, on the one hand, promptly responded to the epidemiological situation by taking a set of measures, and on the other hand, it stayed true to its obligations.

We quickly rebuilt and were able to establish a successful dialogue online, but would still be sincerely happy gradually return to "live" meetings and negotiations there, where possible. We held a series of meetings with all drivers of transformer-reactor equipment Russia, during which the fundamentals of further development of promising areas of cooperation. I want to sincerely thank companies such as Togliatti Transformer, SVEL Group, PMTT. High-voltage Solutions, Elmash (UETM)", Electroavod, Delta Trafo, Zaporozhtransformator", VO" Electroapparat", GK "Electroshield" - TM Samara "for the fact that in such an unstable time we remain productive, reliable partners who support mutually beneficial cooperation.



I am convinced that we will continue to develop technical capabilities that meet the challenges of the time for the benefit of the development of the industry.



Special attention - to nuclear power



SVEL - Power Transformers plant (photo: SVEL Group)

Maxim Zagrebin, Director of OEM Sales at Izolyator, had talks at the SVEL - Power Transformers plant, an oil transformers manufacturer, in Ekaterinburg.

At the SVEL - Power Transformers plant, the guest was received by the Chief Designer of the 500 kV product line Denis Guryev and the Purchasing Manager Danila Safin.

The parties summarized the results of joint activities in 2020, noting the steady trend of constant and multifaceted development of cooperation between the two enterprises.

Further the progress of the implementation of the existing bilateral agreements was discussed, the tasks and the procedure for interaction at each stage of work were clarified.

The final part of the negotiations was devoted to agreeing on common goals and plans for 2021. At the same time the parties paid special attention to planning joint participation in projects for the development of nuclear energy, based on the tasks of increasing its efficiency in accordance with the Energy Strategy of the Russian Federation for the period up to 2035. ■

Looking ahead



A 110 kV Uralelectrotyazhmash oil power transformer with Izolyator high-voltage bushings (photo: Uralelectrotyazhmash)

Maxim Zagrebin, Director of OEM Sales at Izolyator, had a meeting with the management of the technical and procurement departments of the Uralelectrotyazhmash plant in Ekaterinburg.

At UETM the guest was received by the Chief Designer of transformer-reactor equipment Alexey Borisenko and the Head of the Procurement Department for the production complex of transformers Leonid Meshavkin. ■

Evaluating results and new experience



A 250 MVA PMTT transformer with Izolyator high-voltage bushings manufactured for FGC UES (photo: energybase.ru)

Maxim Zagrebin, Director OEM Sales at Izolyator, had talks with the management of the PMTT. High-voltage solutions transformer plant in St. Petersburg on the 21 January 2021.

The plant was represented by Alexander Mayorov, CEO, Andrey Sidelnikov, Chief Designer, Mikhail Melshin, Head of Sales, Irina Mamatova, Head of the Supply Department.

The talks began with the sides striking the balance of cooperation in 2020, which was mutually recognized as successful and provided for new experience of effective coordination, including remote forms of working.

Further the parties outlined plans for 2021 and 2022 providing for joint participation in large Russian and overseas power projects. At the same time special attention was paid to the development of a unified position and further coordination of actions at all stages of the project.

The meeting ended with a discussion of the areas and prospects of cooperation development between PMTT. High-voltage solutions and Izolyator taking into account the latest trends and dynamics of the high-voltage electrical equipment market. ■

Issues of present and future



Assembling the prototype of the first low-speed turbine with a capacity of over 1250 MW at the Leningrad Metal Plant, a part of the Power Machines company (photo: Power Machines)

Director of OEM Sales at Izolyator Maxim Zagrebin, met with the top management of the power machine-building company Power Machines in St. Petersburg in January 2020.

The meeting began with a discussion of the current status and prospects for further establishing mutually beneficial cooperation between two enterprises, based on the production needs of Power Machines for high-voltage insulating equipment.

The central topic of the meeting was a strategy for the development of step-by-step interaction in the assessment, planning and implementation of joint projects based on mutual interest and a clear understanding of common goals. Eventually the parties agreed on their views on an effective model of interaction and agreed to continue joint work in this direction. ■

Tested in full scope



Participants of tests of current transformers made by VO Electroapparat at Izolyator plant

Acceptance tests of current transformers manufactured by the Joint-Stock Company of High-Voltage Equipment Electroapparat from St. Petersburg were held at the Izolyator plant in November 2020. They took place within the framework of the current cooperation agreement between the two enterprises with the participation of representatives of VO Electroapparat. Dmitry Ivanov, Director for Testing and Met-

rological Assurance of Izolyator, supervised the work.

The dielectric strength of the insulation of the main circuit of six current transformers of the TGF-500 type was tested, namely: tests with an alternating one-minute voltage of 630 kV at an industrial frequency of 50 Hz with subsequent measurement of partial discharges at 333 kV. The tests were completed in full and were completed successfully. ■

Cooperation tested by time

A prototype of a high-voltage bushing was tested at the Izolyator plant with participation of Vladimir Skarlykin, Head of the Test Center of the Production Complex of the Electrozavod Holding Company in August 2020. Acceptance tests of the 750 kV bushing, which are planned to be installed on the shunt reactors manufactured by the PC Electrozavod Holding we carried out. These reactors are intended for the needs of Rosenergoatom Concern.

The tests were carried out in full accordance with the previously agreed program and they were completed successfully.

There was also a discussion of further participation in joint projects and prospects for the development of even closer cooperation between Electrozavod and Izolyator. Maxim Zagrebin, Director of OEM Sales at Izolyator, and Vladimir Ustinov, Director of the Moscow branch of Izolyator plant, joined the dialogue.

The time-tested successful cooperation of two leading Russian and world manufacturers of high-voltage equipment continues. ■

Always follow the plan

Alexander Savinov,
Director of Strategic Sales
at Izolyator

The history of the company counts 125 years and perhaps that is why we stick to the rule - follow the plan, but react to external factors and changes.

This is probably why even in such a difficult 2020, we managed not only to fulfill the plans, but even to increase the volume of supplies. For example, we effected a series delivery of bushings with moisture-resistant internal RIN insulation to facilities in the Russian Federation. In addition in 2020 we signed a long-term contract with FGC UES for the supply of bushings for high and ultra-high voltage classes. This is a significant project for us and it is especially valuable that the modernization of energy facilities continues to gain momentum even in such turbulent times.

In 2020 we all had to adapt to new realia, and all kinds of online platforms and instant messengers have firmly entered our lives as a working tool. They turned out to be especially productive in the field of distance education, and we are glad that thanks to technologies we can continue to share our experience even at a distance.



We effected a series delivery of bushings with moisture-resistant internal RIN insulation.

Rosseti FGC UES completed work to improve the reliability of power supply to the Knauf Gips Kungur enterprise

Rosseti FGC UES announced the completion of work on the expansion of the 220 kV Iren substation of the Main Power Systems of Ural for additional power supply to the Knauf Gips Kungur building materials enterprise.

The Knauf Gips Kungur plant is the largest manufacturer of modern gypsum-based building materials in the Perm Territory and the republics of Udmurtia and Komi - 24 million square meters of gypsum plasterboard per year.

At the 220 kV Iren substation, new equipment was installed, including Izolyator high-voltage bushings, to connect an additional power transmission line to the Unified National Power Grid.

Thus, the grid operator created conditions for the delivery of 4.5 MW of power to the consumer, which will increase the reliability of power supply to the Knauf Gips Kungur enterprise. ■

Based on materials of Rosseti FGC UES.



Installation of a 220 kV Izolyator bushing with internal RIP-insulation in an autotransformer of the MPS Ural

Gratitude for knowledge

The Specialized Electric Grid Service Company of the Unified National Power Grid expressed gratitude to Izolyator plant for the high level of organization of advanced training courses at the enterprise's Corporate University.

The Electrosetservice UNPG specialists took a distance learning course on installation of Izolyator high-voltage bushings.

The General Director of Electrosetservice UNPG Evgeny Frolkin emphasized a wide range of modern educational and information technologies used at the Izolyator Corporate University as well as professionalism of its staff in organizing the educational process.

The core activities of the company are diagnostics, maintenance, repair and emergency recovery work in power grids and at other facilities of the UNPG power network facilities, as well as other activities related to the operation and development of the power grid facilities. ■

With all the details

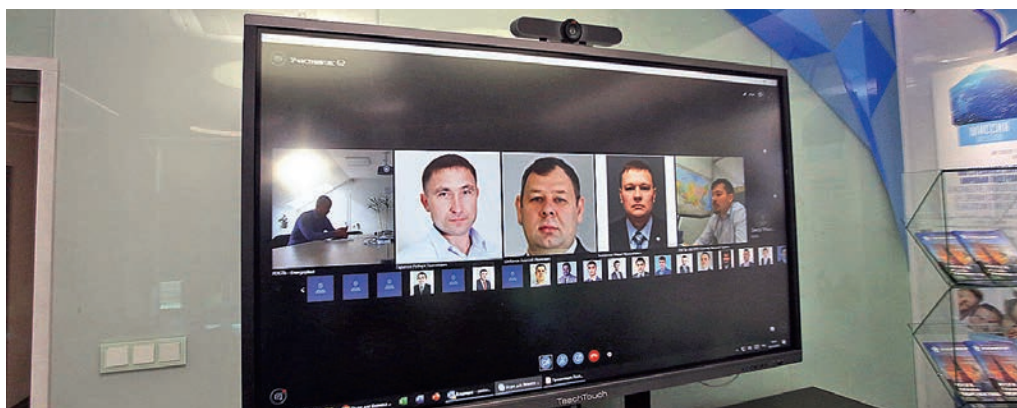
Izolyator held a remote presentation “High-voltage bushings with RIN-insulation” at the Grid Company of Tatarstan in October. The audience of the event was made up of technical specialists from all branches Grid company.

Izolyator was represented at the presentation by Director of Strategic Sales Alexander Savinov and Lead Technical Support Specialist Viktor Kiryukhin.

High-voltage bushings with RIN-insulation were comprehensively considered from the point of view of conditions, advantages and prospects of their use, adopted design and technological solutions, operation and diagnostics features, and



Remote presentation of Izolyator plant in the Grid Company of Tatarstan about high-voltage bushings with RIN-insulation



Technical specialists of the Grid Company branches - the audience of the remote presentation “High-voltage bushings with RIN-insulation”

also from the outlook of the key trends in the development of the power grid complex.

In-depth and detailed explanations were given on certain aspects of the presentation topic, taking into account the special professional interest of the audience.

The event was held with great practical benefit for both companies, once again proving the convenience and evident effectiveness of remote modes for public formats of business communication. ■

Getting to know the perspective

Alexander Savinov, Director of Strategic Sales at Izolyator, has got a meeting with the managers of the Krymenergo State Unitary Enterprise of the Republic of Crimea in Simferopol at the end of November, 2020. Among participants of the meeting there were new management representatives — CEO Igor Korin and Technical Director Andrey Tsurkanenko.

The parties made acquaintance later proceeding to a discussion about the results of the joint work of the two companies in 2020 including the track record of delivery and operation of 35 – 110 kV RIN bushings.

It was generally agreed that the set goals were achieved, while the enterprises demonstrated a high level of interaction in the implementation of the entire planned scope of work.

Also a significant part of the negotiations was devoted to the discussion of the development directions of the Krymenergo enterprise in the future until 2023, including the advanced training program of the company's personnel.

At the end of the meeting the parties, noting the consistency of positions on all points of the negotiations, agreed to continue active contacts and coordinate actions to implement the plans. ■



110 kV Airport substation of Krymenergo. Izolyator bushings are installed on the transformer (photo: Krymenergo)

In time and in full

**Oleg Bakulin,
Director of Partner Relations
Izolyator**

The whole world in 2020 was faced a challenge the modern history does not recall of. Knowing that, it is gratifying that Izolyator not only survived, but did actually stand up to the challenge. Regardless of the difficult situation we completely fulfilled the commitments - and even exceeded the plan. What is especially important in the period of preparation for the autumn-winter period all deliveries were made in time and in full.

Among the significant events I would like to mark the passing of seismic tests of 750 kV bushings for the needs of the Kursk NPP. They were preceded by a great preparatory work and, realizing all the responsibility we paid maximum attention to all stages of the process. Another major project shows a good progress - our participation in the implementation of a long-term comprehensive program for the modernization of OGC-2. That is a three-year program: having started in 2020, it would last until 2022.

We have always kept our word and our commitment. I am sincerely convinced that this is the right course and we will continue to follow it.



In the period of preparation for the autumn-winter period all deliveries were made in time and in full.

Proving advantages in practice



Specialists of Rosenergoatom Concern in the test center of Izolyator plant, L-R: Chief Process Engineer of the Engineering Support Department Oleg Prorokov, Oleg Bakulin, Chief Specialist of the Procurement Department Yakov Gorshenin and Maxim Zagrebin

Specialists of the Russian concern for the production of electrical and thermal energy at nuclear power plants - Rosenergoatom Concern - Oleg Prorokov, Chief Process Engineer of the Engineering Support Department and Yakov Gorshenin, Chief Specialist of the Procurement

Department – paid a visit to Izolyator plant.

The guests were received by Oleg Bakulin, Director of Partner Relations, and Maxim Zagrebin, Head of OEM Sales.

The parties discussed a number of topical issues of interaction and planning

the development of cooperation in the interests of the most effective implementation of joint projects.

A separate topic of discussion was the advantages and expediency of using new generation high-voltage bushings with internal RIN insulation at nuclear generation facilities.

In the course of an open dialogue representatives of the concern were able to fully make sure that the schedule for the manufacture of high-voltage bushings for completing shunt reactors manufactured by the Electrozavod Holding Company, intended for delivery to the Rosenergoatom Concern, was fully observed.

During a tour of the plant the guests got acquainted with all the technological stages of the high-voltage bushings production, paying special attention to the quality of the materials used in the production. Rosenergoatom specialists highly appreciated the technologies and materials used.

At the end of the visit the parties expressed full satisfaction with the results of the meeting. Izolyator's cooperation with one of the largest energy companies in Russia continues. ■

9 points on MSK-64 scale - the test is passed!



Acquaintance with the technology of production of bushings with internal RIP insulation

In September 2020 an inspection of the manufacturing quality of bushings intended for the Kursk NPP took place at the Izolyator plant.

The inspection was carried out by technical specialists of the Kursk NPP and the Joint Stock Company VO Safety.

Yury Nikitin, Chief Designer of Izolyator plant was facilitating the inspection.

The visit began with a discussion of the progress of cooperation on the manufacture of 750 kV high-voltage bushings for the Kursk NPP. The parties analyzed the degree of fulfillment of the entire set of requirements for high-voltage bushings that are used in the power equipment of nuclear power plants.

Then the guests proceeded to the production floor, where they got acquainted in detail with all the technological stages of high-voltage bushings production. At the same time, the

production process of bushings with internal RIP-insulation aroused particular interest. Upon completion of the inspection, the parties clarified and agreed on subsequent activities to fulfill the order of the Kursk NPP in strict accordance with the current agreement.

One of the most significant results of the work done was the successful seismic testing of the 750 kV Izolyator transformer bushing, intended for the Kursk NPP.

The tests took place at the test stand of the Center for Complex Seismic Testing in the Leningrad Region.

Full-scale bench tests were carried out for seismic resistance under dynamic loads equivalent to seismic impact with an intensity of 9 points on the MSK-64 scale at elevations up to 10 meters (for operation at nuclear power plants).

The tests were carried out with the high-voltage bushing fixed on the universal seismic platform USP-300 using a special fitting that simulates the standard fixture of the product at the place of operation.

The tests were carried out in full accordance with the program and they were completed successfully: according to the protocol, after the tests for seismic withstand, no leakage or malfunction of the product was found.

Izolyator plant continues active and long-term cooperation with Rosenergoatom Concern, meeting the entire spectrum of the highest requirements for equipment operated at NPPs. ■



A 750 kV Izolyator transformer bushing on the seismic platform of the Center for Complex Seismic Testing in the Leningrad Region

Improving the qualification of hydropower engineers



Cheboksarskaya HPP with a capacity of 1,370 MW (photo: RusHydro Group)

Izolyator plant took part in the webinar of the federal hydro-generating company RusHydro "Maintenance of electrical equipment for hy-

droelectric power plants and pumped storage power plants and organization of the work of repair stable."

The organizer of the webinar is the Corporate University of Hydropower, a branch of the RusHydro Group, which provides training for employees of the production and technical services of the RusHydro Group branches under the advanced educational program.

The following branches took part in the webinar: Zeyskaya HPP, Bureyskaya HPP, Cheboksarskaya HPP and Dagestan branch.

Alexey Pilyugin, Head of the SVN-Service department at Izolyator plant, held a four-academic hour class dedicated to the operation of high-voltage bushings with internal RIP insulation, innovative developments by Izolyator plant and new diagnostic methods. ■

Effects of mutual support

**Dmitry Karasev,
Head of Purchasing Department
Izolyator**

In 2020 despite all its surprises, we carried out a fairly planned work. A wide range of tasks and a lot of meetings with suppliers, even taking into account the time of the pandemic, allowed us to constantly be in the flow and search for more favorable commercial conditions.

We managed to work out the most budget-intensive items and get good offers and conditions that would significantly reduce costs. In addition an important achievement was the expansion of the pool of suppliers, for example, for large-scale rolled metal products. Interaction with a wide range of suppliers would allow us to diversify our risks are a big advantage, especially during turbulent and often unpredictable times of a pandemic.

Despite the fact that a significant part of the meetings with partners took place online, we managed to maintain a productive dialogue, to fulfill our obligations on time and in full.

I would especially like to note that our strategic partners not only continued to operate during the quarantine period, but they were ready to work overtime, even on weekends and holidays. Their support is truly valuable to us and thanks to it we were able to achieve impressive results in the challenging 2020.



Our strategic partners not only continued to operate during the quarantine period, but they were ready to work overtime, even on weekends and holidays.

Opening the way to cooperation



Talks at Slantsy Springs Plant (SSP), L-R: General Director at SSP Andrey Efimov, Technical Director at SSP Sergey Konev, Dmitry Karasev and Yury Kukhtin

Izolyator representatives had talks with the management of the Slantsy Springs Plant located in the Leningrad Region. Slantsy Springs Plant was represented by General Director Andrey Efimov and Technical Director Sergey Konev. Izolyator was represented by Head of Purchasing Dmitry Karasev and Lead Purchasing Specialist Yury Kukhtin.

This meeting was preceded by the delivery of a trial batch of springs, which successfully passed the incoming inspection and they would be used as components in the assembly of tightening devices of Izolyator high-voltage bushings.

Our colleagues made acquaintance with the management of SSP and discussed the range and projected volumes of supplies of spring products.

As a result of the negotiations cooperation development plans until the end of 2020 and in 2021 were outlined.

We appreciate the management of Slantsy Spring Plant for our welcome! ■

In the tradition of open dialogue

**Dmitry Abbakumov,
Deputy Commercial Director
Izolyator**

At the end of 2020 when many were summing up the results, every now and then one could hear that, for obvious reasons, the year should not be included in the overall standings at all. However, for the commercial department of Izolyator, the year turned out to be really eventful: we actively interacted with both the company divisions and state bodies.

The development of the logistics sector deserves a separate mention. So, a logistics department appeared, the work of the finished goods warehouse was optimized, a lot of work was done in the transport department, namely: 1560 shipment requests were accepted and completed, the trucks and cars fleets were replaced by 90% and 50% respectively, and all vehicles meet EURO-5 ecological class.

Of course, we expect that the improvement process will be continuous in 2021 too: we will need to optimize the tracking of shipped products, continue negotiations with logistics companies. At the same time we expect to raise the bar for the execution of delivery orders even higher!

It should be noted that in 2020 communication has become especially important and perhaps a prerequisite for sustainable operation of enterprises in conditions of extraordinary circumstances. I am glad that the company did not just take part in a number of events where we discussed various forms of work in new circumstances, but also openly shared its experience. Traditionally open dialogue has remained a trademark of ours.



The year turned out to be really eventful: we actively interacted with both partner companies and state bodies.

Developing the sector together

Izolyator plant took part in a remote conference organized by the Russian Export Center in connection with the opening of an international business mission in the energy sector. Izolyator plant was represented at the video-conference session by Dmitry Abbakumov, Deputy Commercial Director and Alexander Znamenskiy, International BDM. The conference was also attended by the staff of Ministry of Industry and Trade of the Russian Federa-

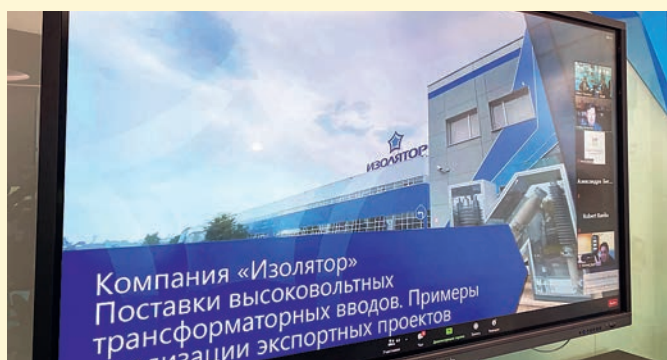
tion and representatives of trade missions of Russia in Algeria, South Africa and Vietnam.

The conference was devoted to topical issues of state support for exports, certification of electrical products and obtaining subsidies for certification of goods for foreign markets.

In addition during the event successful cases high-tech products export by Russian exporters, including Izolyator, were reviewed: Alexander Znamenskiy made a presentation

on the rich experience of exporting Izolyator high-voltage bushings and expansion of the geography of supplies.

All conference participants noted the importance of increasing non-resource exports of Russian companies and the active use of modern mechanisms of support of foreign economic activity provided by the REC and the Ministry of Industry and Trade of Russia. ■



Title page of Izolyator's report



Izolyator plant is participant of a remote conference organized by the Russian Export Center in connection with the opening of an international business mission in the energy sector

Digitalization of production processes at Izolyator

**Konstanting Sipilkin,
Director of R&D Center Izolyator
plant**

High-voltage bushings are quite specific equipment, in the design of which neither digital integrated circuits nor automated control systems are used, even there is no software at the bushing. In general, at first glance, these are products of the Stone Age, which can in no way be attributed to the objects of digital energy.

At the same time bushings that do not have any digital devices and components in their design in fact can be a true object of digital energy sector and represent an excellent example of advanced technologies, being an element of the digital economy of the Russian Federation.

Indeed, in reality the digital economy is not only and not so much a product containing digital components or products that can be controlled using applications. According to the definition of the Higher School of Economics, the digital economy is the activity of creating, distributing and the use of digital technologies and related products and services. In other words the digital economy is the digitalization of the entire product life cycle, from development to its disposal. And it is the digitalization of the design and production processes of high-voltage bushings that allows them to be classified as entities of digital energy. How this happens in our enterprise, we will tell in this and other materials to follow.

The digitalization of the design process of high-voltage bushings began with the use of specialized computer programs in product development at the Izolyator plant back in the 1980s. At that time the first calculation programs were created and began to be used, allowing to speed up and simplify the process of calculating high-voltage bushings, and at the same time making it possible to calculate different options of the future design and choose the most optimal solution in a short period of time. At the same time the development of the rest of the design and technological documentation was still carried out manually.

In the second half of the 90s design programs began to be introduced at the design office of the plant, which made it possible to use 3D modeling in the development of new products. The advantage of using modern design systems aimed at creating models and conduct detailed engineering analysis immediately became obvious and gave impetus to a large-scale transition of the entire team of the plant's design office to a digital format. Although one must remain honest and emphasize that the transition from drawing boards, whatman papers and graph paper was not quick and finally the "last Mohicans" switched to using modern software and abandoned the drawing boards only when the plant moved to a new production site in the Moscow region in 2007.

The active development of new software coincides in time with the beginning of the introduction at the plant of a number of new technologies and fundamentally new designs of high-voltage bushings. So, in the early 2000s, practically from scratch, a technology for applying silicone



Bushings in fact can be a true object of digital energy sector.

finning to high-voltage bushings with solid insulation was created and introduced into mass production. That is for the first time in Russia pass-through insulators were launched into serial production not with porcelain insulation, but with the most modern at that time silicone external insulation.

A few years later the serial production of high-voltage bushings with RIP-insulation was launched - bushings manufactured using a fundamentally new technology, which had not previously existed either in the USSR or in Russia.

To be continued...

High-voltage RIN bushings catalogue



"The new generation high-voltage bushings with RIN-insulation for power transformers and shunt reactors" Catalogue was published.

Izolyator plant continues to actively implement innovative technologies in accordance with the strategy of the Russian energy sector development and global trends in design of modern and efficient power equipment. The most important of these lines of activity of Izolyator is a systematic transition of the high-voltage bushings it makes to solid internal RIN-insulation.

RIN (Resin Impregnated Nonwoven) is a polymer nonwoven fabric, impregnated with epoxy compound followed by curing. It is the most advanced and promising type of internal insulation of high-voltage bushings.

The polymer nonwoven material used as the main insulation in such bushings does not contain cellulose, and as a consequence has a low level of water absorption even with intensive exposure to moisture, which virtually eliminates any moistening of insulation.

Operation of bushings with RIN insulation is possible both at extremely low and extremely

high temperatures, since this insulation has a high thermal conductivity and a low coefficient of thermal expansion. This leads to a decrease in mechanical stresses in the bushing design elements, which, in turn, ensures high reliability and a long service life of the bushing in a very wide range of operating temperatures.

The RIN-insulation can be used both with porcelain and polymer external insulation.

Izolyator has patented the RIN trademark, mastered and patented an industrial technology for manufacturing this type of insulation.

Izolyator high-voltage bushings with RIN-insulation are certified for compliance with the requirements of GOST R 55187-2012 and are certified by the Rosseti Group for use at the facilities of subsidiaries and affiliates.

The new catalogue contains a list of RIN-insulated transformer and reactor high-voltage bushings, their technical characteristics, a description of the design and technological stages of production, operational features and an explanation of symbols. ■

Inspection of electrical equipment under an agreement with the All-Russian Research Institute of Metrological Service

The Izolyator plant's test center performed checks of electrical equipment under the cooperation agreement with the All-Russian Research Institute of Metrological Service.

The following equipment was checked:

- mobile standard voltage transformer NEUS 500 for rated voltage 500 kV on a trailer for MetroService based in Krasnoyarsk,
- 750 kV test divider of the metrological

service of the technological branch of Rosenergoatom Concern.

The equipment check was carried out in full accordance with the previously agreed plan and was completed successfully. ■



A reference mobile voltage transformer 500 kV delivered to the test center of Izolyator plant under an agreement with the All-Russian Research Institute of Metrological Service



Verification of a 750 kV voltage class calibration divider at the Izolyator test center

New products — new opportunities

**Victor Pshennov,
Technical Director
Izolyator-AKS**

Established in April 2019 Izolyator-AKS continued its work on setting up production and testing equipment, optimizing technological processes and certification testing of products in 2020.

Over the past year despite the difficult epidemiological situation, which made considerable adjustments to the way of life and work of almost all enterprises, Izolyator-AKS managed to fulfill the objectives set by the management.

As part of the ripen diversification of production at Izolyator divisions and import substitution program implementation in the market of high-voltage cable fittings, we carried on our activities to improve our products. We paid special attention to reducing the weight and size parameters, improving product quality by using new materials of components, as well as standardization of production cycles and simplification of installation work at sites. Throughout 2020, further training and advanced training of employees was carried out, which in the end made it possible not to stop the processes of production adjustment, despite the lockdown and general "paralysis" due to the pandemic. It should be noted that the pandemic was almost painless for colleagues from Izolyator-AKS LLC.

In the first half of the past year the necessary procurement and equipping was carried out for the production and testing of cable fittings (cable joints, outdoor terminations, as well as pluggable connectors) for 110–220 kV. The injection molding machines that have no analogues in the world and individually designed molds became the main component of the production base.

Izolyator-AKS LLC employees showed a true professionalism and deep internal motivation when commissioning the production equipment and performing its "adjustment", one might say, manual adjustment, for the production of the highest quality goods.

The company stable conducted an intensive search for local components and analysis of their manufacturing enterprises, as a result of which a pool of suppliers was created. It allowed not only to ensure a high level of quality, but also a high level of localization of production, which, along with the synergistic effects of the existing structures, led to a decrease in costs and a reduction in the time required to create the warehouse stock and future orders picking. And already in the second quarter of 2020 the entire line of deflectors and control bodies for cable fittings was cast for 110-220 kV voltage classes.

By the middle of the year the equipment for acceptance testing in a high-voltage testing laboratory was delivered, but here the pandemic left its mark and commissioning had to be postponed due to closed borders and cases of illness among supplier personnel.

We organized the work of the service center, which made it possible to successfully pass the type tests of the manufactured products as part of a 220 kV cable system, including the leak test.



The results achieved by Izolyator-AKS last year fully give grounds for optimistic forecasts for further work and successful entry of the company products into the market.

Taking into account the requirements of the market, relying on the accumulated experience and justified ambitiousness of the Izolyator-AKS LLC stable, in 2020 the development of the so-called dry termination was launched. This design has a number of advantages over a conventional oil-filled end termination and has serious export potential including European energy market, which are mostly closed for Russian goods.

Looking back, I would like to note that the results achieved by Izolyator-AKS last year fully give grounds for optimistic forecasts for further work and successful entry of the company products into the market.

One of a kind

An injection molding machine by the Swiss Vogel moulds & machines AG was successfully put into commercial operation at Izolyator-AKS cable accessories plant.

An unparalleled elsewhere in the world injection molding machine for the production of organosilicon items with a feed device allows the production of all types of high-voltage cable fittings (cable joints, outdoor terminations and pluggable connectors) in 110 to 220 kV voltage range.

General Manager of Vogel Norbert Maroldt arrived at Izolyator-AKS to supervise the commissioning and take part in the equipment maintenance. Together with him, Technical Manager Hanspeter Lüdin took part in the acceptance procedure, who during the previous week inspected and tested the equipment, and performed additional tuning of production programs and individual units.

After drawing up the acceptance certificate, the representatives of Vogel were received by the CEO of Zavod Izolyator LLC Alexander Slavinsky and the CEO of Izolyator-AKS LLC.

At the meeting, Norbert Maroldt thanked Izolyator stable for their trust and professionalism in the implementation of the joint project, highly appreciating the qualifications of Izolyator's production personnel.

The parties discussed the directions for further development of cooperation and expansion of partnership, including in the production of new types of cable fittings within the framework of the Program to ensure import substitution of the industry of the Russian Federation and the Strategy for innovative development of the Russian Federation.



Participants in the commissioning of the Swiss injection molding equipment maker Vogel at the Izolyator-AKS plant: Vogel's MD Norbert Maroldt (left), center - Technical Manager Hanspeter Lüdin

46 | For the benefit of company and region

The new production site of Izolyator plant, which will manufacture shipping packaging for company products was ceremoniously opened in December 2020 on the territory of the Shakhovskaya city district.

The opening was preceded by a big work, and cooperation with the district administration made a positive contribution to it. On the eve of the start-up, the



Head of the Shakhovskaya city district Zamir Gadzhiev is getting familiar with the technology of Izolyator high-voltage bushings assembly



The cutting the red ribbon - the site has been launched!

plant was personally visited by the head of the Shakhovskaya city district Zamir Gadzhiev. Alexander Slavinsky, CEO of Zavod Izolyator, received him and conducted a tour of the plant.

In the corporate museum, the guest got acquainted with the milestones of the century-long history of the enterprise, the role of Izolyator in the development of the domestic electric power industry and the successes achieved in

recent years in international cooperation. During the tour of the production facility, the guest got a visual impression of the most modern technologies for the manufacture of high-voltage insulating power equipment that fully meets all industry standards and is successfully delivered to more than 30 countries worldwide.

But, of course, the key topic of discussion was the commissioning of a

the new production site of the Izolyator plant. The ceremonial launch took place just before the New Year on December 29.

The significant event was attended by: Head of the Shakhovskaya city district Zamir Gadzhiev, CEO of Zavod Izolyator LLC Alexander Slavinsky, CEO of Massa LLC Sergey Moiseev, as well as employees of the Shakhovskaya city district administration and Izolyator.

Zamir Gadzhiev briefly introduced the Shakhovskaya urban district to the audience: its history, main economic and social indicators, plans for further construction of infrastructure to ensure a steady development of the municipality and the well-being of residents. The speaker emphasized that attracting investments into the economy of the district is one of the strategic tasks of the administration of the municipality.

In his welcoming speech Sergey Moiseev emphasized the utmost importance that the Izolyator managers give to the effective integration of the enterprise into the industrial sector of the Moscow Region, and in particular, expressed his hope for successful and fruitful cooperation with the Shakhovskaya City District Administration.

With all the opening speeches pronounced, a solemn ceremony of cutting the red ribbon took place, which became a kind of command to start up technological equipment and start a new production site.

The same day the new production division released its first products - ready-made packings intended for transportation of Izolyator high-voltage bushings.



The first day of operation of the packaging assembly station of the Izolyator plant launched in the Shakhovskaya city district



Measurements performed during an unscheduled special assessment of working conditions at the workplaces of the Izolyator plant

In full compliance with standards

A primary special assessment of working conditions at the workplaces of the new Izolyator-AKS cable accessories enterprise and an unscheduled special assessment of working conditions at the Izolyator plant workplaces took place.

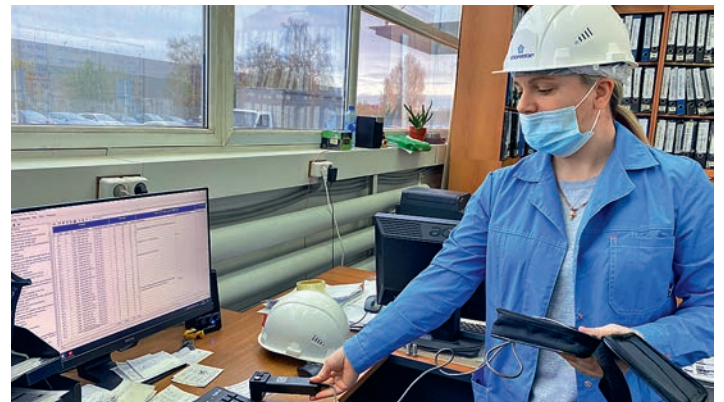
An expert from the Klin Institute for Labor Protection and Working Conditions measured the actual values of harmful factors at workplaces.

Measurements and laboratory studies of workplaces have

confirmed their compliance with hygienic standards and the requirements of sanitary rules.

Based on the results of the special assessment of working conditions, classes (subclasses) of working conditions at the surveyed workplaces will be assigned.

As the assessment discovered working conditions at Izolyator and Izolyator-AKS enterprises are in full compliance with Russian legislation. ■



Measurements at plant management workplaces

Fire Alarm signal



Evacuation practice on the fire alarm signal

The next scheduled fire safety training was held at Izolyator plant on 23 December 2020. The purpose of the training is to improve reaction and behavior of the employees of the enterprise in case of fire, as well as to practice evacuation actions on the fire alarm signal.

All Izolyator employees took part in the training, which was done by Boris Sobelman, Associate General Director for Security.

During the training on the signal "Fire alarm", the staff were evacuated through the designated exits and corridors of the premises, and the warning system's serviceability was checked. Managers of all levels reported on the presence of evacuated employees.

Summing up the results, Massa LLC's CEO Sergey Moiseev noted the high degree of readiness of staff members to act on the fire alarm signal and the complete readiness of the warning system.

All the planned tasks of fire safety training were completed, the goal of the exercise was achieved. ■

Human resources development

**Julia Turina,
Head of Human Resources
Department Izolyator**

The well-thought-out human resources policy of Izolyator consists of several projects aimed at improving the qualifications of employees, developing a personnel reserve, mentoring, rational use of the labor force in accordance with the acquired qualifications, the formation of positive motivation for highly productive work.

The key events of 2020: getting an educational license and opening of the Izolyator Corporate University; launch of an LMS for advanced educational of personnel; development of an adaptation system for company personnel; continued work with the talent pool of the enterprise; obtaining a license for medical activities in the field of pre-trip and post-trip medical examinations of drivers.

Training in company management

"Training in the field of company management" is a long-term professional development project, which involves all heads of structural divisions, young specialists, managers and engineering and technical personnel.

The goal of the project is to ensure strategic sustainability of our company in unstable modern realities through advanced training of employees. Topics, presented in the project, cover all areas of professional activity of the company's employees: from the basics of the electric power to business negotiation skills. The internal trainers have greatly contributed to the value of this project.

Based on the results of the project, we can confidently say that the tasks have been achieved by 100 percent.

All managers involved in the project performed excellently in the role of trainers. It's no secret that teaching is a separate profession and none of the top managers of the company previously had exposure to classroom work, did not study at a pedagogical university, but responsibility, understanding of the importance of the common cause, maximum involvement in that work allowed them to try themselves in the role instructors.

English: study and enjoy

Izolyator has big plans for the development of foreign markets and one of the critical competences of employees working with international partners, is fluent English.

In order to improve the language, consolidate the received knowledge, acquire an adequate vocabulary, a long-term multi-level educational program has been launched since 2019. English can be studied not only by specialists of the Departments of Foreign Economic Affairs and International Business Development, but also by any employees of the company. All students of the course confirmed their knowledge and successfully completed the education. The atmosphere prompted the idea of creating an English Conversation Club in the company. Those who is fond of the language, who is ready to communicate in it, will every month. Alexander Slavinsky supported the idea and expressed a desire to sometimes "drop by."



*In the modern economy,
it is difficult to count on
a breakthrough without staff
development and attracting
of young specialists.*

The first on the go

On the basis of the Corporate University, a project for the introduction of distance learning was implemented. The first group of listeners completed the test distance training on the newly created course "Installation of high voltage bushings in power equipment". 85 specialists from three organizations (Electroservice UNPG, a branch of FGC UES - Central PMES and Yantar-energo) completed their training. The listeners highly appreciated the distance learning course.

The Mentor is a guide to the professional world

Mentoring is one of the basic methods of transferring knowledge. It is widely used in the practice of staff training and adaptation of new employees. The company has begun to implement a project to adapt newly employed employees.

A new employee begins his activity at the enterprise by attending a mandatory introductory training, where he receives detailed information about the history of the enterprise, the organizational structure, and also undergoes an introductory briefing on labor protection and meets his mentor.

A mentor, without detriment to his main activity, can simultaneously train one or even two newcomers. Based on the knowledge transferred by the mentor, the employee learns to independently analyze work activity, constantly asking himself questions: "What else can be done to improve the work? How to improve the technique of performing labor functions?"

Everyone can become a mentor, but not everyone can be one, since this requires pedagogical talent, multiplied by many years of work experience and professional skill.



CORPORATE UNIVERSITY IZOLYATOR

2020 IN FIGURES

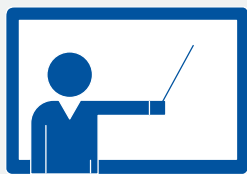
4 August 2020, Izolyator was granted a perpetual license from the Ministry of Education of the Moscow Region to provide educational services

30 September 2020, the grand opening of the Izolyator Corporate University took place

3 MONTHS OF WORK OF IZOLYATOR CORPORATE UNIVERSITY:

668 people raised their qualification in various courses

86 staff members received training in company management topics



13 13 courses published in the learning management system of the corporate university - many of those developed from zero

85 85 students from three partner companies were trained in the newly created program "Installation of Massa LLC high-voltage bushings in power equipment"

A test for future specialists

Izolyator plant took part in a 48-hour online hackathon as part of the MIET Science Days Online project. The hackathon for programmers and marketers was attended by 140 people - schoolchildren and students from Moscow and the Moscow region, St. Petersburg, Ekaterinburg, Tver region.

The partners of the event were Izolyator plant, Microsoft, Acer, HaClever and HERE. The companies organized lectures from expert representatives and presented competition tasks for the participating teams.

On behalf of Izolyator plant, as an expert jury in the hackathon, there were: CEO of Zavod Izolyator LLC, Chairman of the Board of Izolyator Corporate University Dr. Alexander Slavinsky; Julia Turina, Head of the HR Department, Deputy Chairman of the Board of Izolyator Corporate University, Head of the



Discussing further cooperation



Students of the Institute of System and Software Engineering and Information Technologies Andrey Balashov and Vladislav Zhokhov - winners of the second place in the MIET hackathon

Design Office Ivan Egorov, Methodologist of HR Dpt Marina Nizenkova and Administrator of distance learning systems Vitaly Shatsky.

Izolyator plant offered students to create a simulator for installation of a high-voltage bushing. The task turned out to be so difficult that many teams did not dare to choose it. And only two brave participants from the Institute of System and Software Engineering and Information Technologies, Andrey Balashov and Vladislav Zhokhov, decided to try to implement the task. In the end, they took the second place in the hackathon! And as an incentive prize, Izolyator management invited the guys to the enterprise to discuss further cooperation.

All prize-winners received gifts from organizers and partners, as well as certificates of participation in the hackathon.

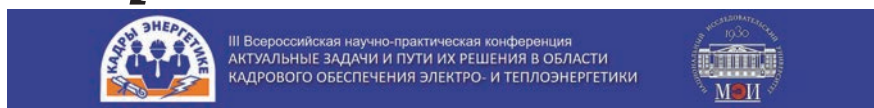
The partners of the event, including the Izolyator plant, received letters of thanks from the hackathon's organizing committee. ■



Prize-winners and jury of the MIET online hackathon - cooperation will continue!

Training of specialists is a national imperative

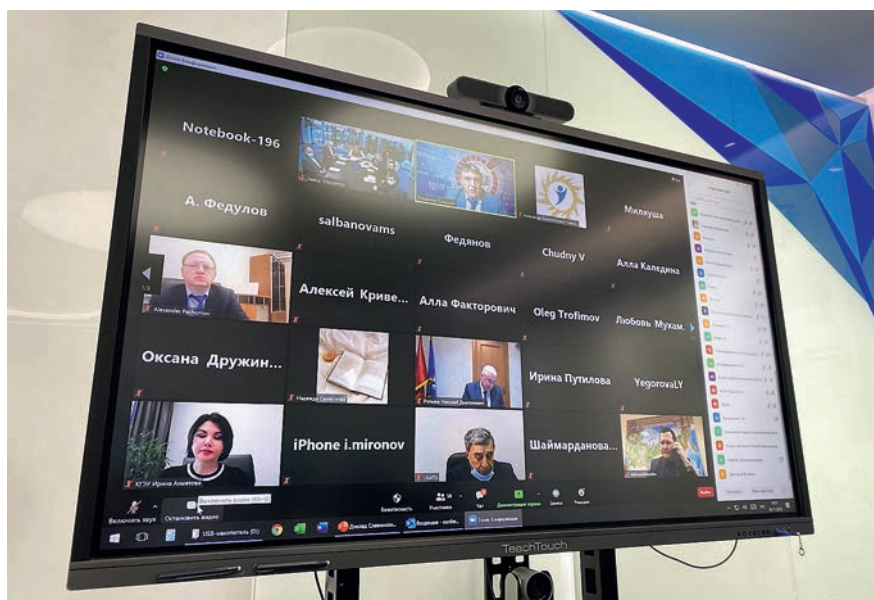
Izolyator took part in several events of the National Research University MPEI in November 2020.



Izolyator plant took part in the III All-Russian Scientific and Practical Conference Current objectives of staffing of the electric and heat power industry and ways to solve them, which was held on 18-19 November 2020.

The conference, which was held online, was moderated by Vladimir Tulsky, Director of the Electric Power Industry Institute of the National Research University MPEI.

For about 20 reports were presented to the conference audience. The participants discussed topics of attracting and sourcing workforce for the industry, touched upon the issues of building relations between university graduates and employers, made suggestions for improving specialized educational programs and developing new tools for assessing students' knowledge.



Online work of the Conference Current objectives of staffing of the electric and heat power industry and ways to solve them



Representatives of Izolyator plant taking part in the Conference

Dr. Alexander Slavinsky, CEO of Zavod Izolyator LLC shared his experience of effective interaction between the enterprise and professional educational institutions. His presentation described the practice-oriented educational model implemented at Izolyator plant. "Training of personnel for the country's economy is not a private task of entrepreneurs, but a nationwide objective that can be solved by involving employers in the system of training qualified personnel", Mr. Slavinsky said.

According to Nikolay Rogalev, President of NRU MPEI, over the past few years the conference has become a good platform

for working out the necessary decisions largely thanks to the Ministry of Energy of the Russian Federation: "I think there are few sectors of economy that can boast of the high-level interaction with its respective ministry like ours."

The All-Russian Scientific and Practical Conference Current objectives of staffing of the electric and heat power industry and ways to solve them is traditionally organized by the National Research University MPEI and federal educational and methodological associations in the systems of higher and secondary vocational education for larger group of specialties and areas of training (UGSN) 13.00.00

Electricity and heat power engineering with the participation and support of the Ministry of Science and Higher Education, the Ministry of Education, the Ministry of Energy of the Russian Federation and other relevant bodies.

The purpose of the conference is to create a discussion platform for the exchange of experience and opinions on effective interaction between employers and the academic community in professional training for the electric and heat power industry, aimed at improving the quality of education.

The conference is held every two years.

65 years to the Krasnogorsk College!

In October 2020 Izolyator took part in the celebration dedicated to the 65th anniversary of Krasnogorsk College and the 80th anniversary of the vocational training system in Russia.

The jubilee, which took place in the Istra branch of Krasnogorsk College, was attended by guests of honor: deputy of the Moscow Regional Duma Galina Utkina, former Head of the Istra branch Ivan Akhmerov, representatives of social partners - Izolyator plant and Design and Construction Association No.13.

Izolyator plant was represented by Julia Turina, Head of the Human Resources department, who congratulated the staff with the anniversary of the educational institution and presented a letter of gratitude from the



Julia Turina is congratulating Krasnogorsk College on the 65th anniversary represented by Director of Istra and Zvenigorod branches Irina Buzlaeva



Students of the Krasnogorsk College are getting familiar with the design and production stages of high-voltage bushings

company's management for a long-term and fruitful cooperation.

Irina Buzlaeva, Director of Istra and Zvenigorod branches, received congratulations on behalf of the Krasnogorsk College.

Krasnogorsk College and Izolyator plant have long been linked by social partnership and friendly relations.

At Izolyator students who study in the "Operator of programmed machine tools" department periodically undergo practical training. During their internships, students get the opportunity to "hone" theoretical knowledge in the production shop, get acquainted with the nuances of individual models of machine tools, and enter into a working rhythm.

Students are motivated to show their best because the worthiest among them are invited for further work already in the role of Izolyator plant's employees by the company management. ■

Learning on the job

In 2020 the first classes of the comprehensive Advanced Educational Program on company management topics were held for staff members at Izolyator plant as an activity of the company's corporate university.

The cycle of lectures was opened by Associate General Director on Security at Izolyator Boris Sobelman, who spoke on the topic "Main aspects of ensuring security at the enterprise", Chief Accountant Elena Posokh with the topic "Fundamentals of Accounting" and Director of Legal Affairs Elena Zubakova with the "Fundamentals of Legislation".

Alexander Slavinsky carried on by sharing his experience of presentations at the lecture "Skills of public speaking".

Izolyator top managers and university professors conduct training in the



Alexander Slavinsky's lecture "Public speaking skills"

general topics of a modern enterprise operation: with a training system in place it is not only possible to develop in the profession, but also to successfully perform one's job duties.

This format of professional development contributes to the support and promotion of the core values of corporate culture among employees. ■



Happy Anniversary, MIET!

Over the years of its existence, MIET has trained thousands of specialists who have successfully performed in a variety of professional fields



Alexander Slavinsky at a live broadcast of the gala evening MIET - 55!



MIET's President Yury Chaplygin and Alexander Slavinsky

graduates of the university during the live broadcast of the gala evening, and also spoke about his involvement in projects to support the development of student sports.

As part of the celebration, a meeting was held between the Izolyator plant management, MIET and the Innovation Promotion Fund, which was attended by Alexander Slavinsky, MIET's Rector Vladimir Bespalov, MIET's President Yury Chaplygin and President of the Fund for Assistance to Small Innovative Enterprises in Science and Technology (Innovation Promotion Fund) Sergey Polyakov.

Izolyator plant has a long history, directly connected with the activities of the university, and continues to expand the boundaries of cooperation with pleasure.

CEO of Zavod Izolyator, Dr. Alexander Slavinsky took part in a gala evening dedicated to the 55th anniversary of the National Research University Moscow Institute of Electronic Technology on the 9 of December, 2020. The MIET - 55! festive evening went online on the day the university was founded, ending a series of jubilee events timed to coincide with the anniversary.

Alexander Slavinsky, being a 1985 MIET graduate, warmly congratulated the entire faculty, students, graduate students and



Meeting of the management of MIET, the Innovation Promotion Fund and the Izolyator plant, L-R: MIET's Rector Vladimir Bespalov, General Director of the Innovation Promotion Fund Sergey Polyakov and Alexander Slavinsky

The platform for creativity

Lyudmila Artemova's personal exhibition "Revival" opened at Izolyator plant in December. Important is that the exhibition was displayed at the recent created space, specially designed at the plant.



Opening of the personal exhibition "Revival" of the artist Lyudmila Artemova at the Izolyator plant



Lyudmila Artemova is presenting her exhibition of paintings and thanking Izolyator plant for organizing her personal exhibition

Lyudmila Artemova addressed those around her.

According to Alexander Slavinsky, today's event marked the beginning of a new tradition of the enterprise: from now on, there is an opportunity to demonstrate artwork here both for invited masters and for the company staff members keen on creative leisure activities.

This is how Izolyator understands and observes one of the most important norms of social responsibility: to create conditions for all-round human development to the maximum extent, to promote personal fulfillment in every possible way, to actively involve an active individual in a fruitful and mutually beneficial dialogue with the surrounding society. ■

Lyudmila Artemova is a member of the National Union of Pastelists, winner of two nominations at the international festival Golden Time Talent United Kingdom Award and a participant in other projects related to the work of pastel artists. Having connected her life with the jewelry business, the artist did not give up her hobby and in recent years decided to devote herself entirely to pastel painting. Works in this very technique made up the exposition of the exhibition

In a solemn atmosphere CEO of Zavod Izolyator LLC Alexander Slavinsky introduced Lyudmila Artemova and opened an exposition of her paintings. "Despite participation in a number of festivals and competitions, "Revival" is my first personal exhibition, and in the person of Alexander Slavinsky I thank Izolyator plant for this opportunity!"



New exhibition space specially created at Izolyator plant



<https://artstart.moscow/>
www.facebook.com/artstart.mos
www.instagram.com/artstart.moscow
vk.com/artstart_moscow

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Izolyator is industrial partner to the ArtStart Without Borders Competition

works related to the various types of fine arts. An incredible holiday atmosphere, meeting talented people, art experts, representatives of art schools and associations, as well as concert, lectures, conferences, master classes, contests, art battles and other events have become an integral part of the exhibition.

In the final part of the competition, the authoritative jury determined the winners in the nominations of the competition in the following areas: painting, graphics, sculpture, arts and crafts, art photography, puppet artist, sketch illustration. All the artists awarded by the jury received Izolyator corporate gifts and souvenirs along with the prizes of the art contest.

Izolyator actively supports public initiatives in the humanitarian and sports spheres and fosters these activities within the company itself: a specially created exhibition space has been opened on the territory of the plant, where everyone can demonstrate their creative achievements. And its own multifunctional sports hall has been built and become very popular. ■

Art without borders

The ArtStart Without Borders competition was held in the Moscow's Art Deco Museum. Izolyator is an industrial partner of the event.

The organizers of the event are Svetlana Chernyavskaya and Olesya Panfilova. The jury was headed by Vasilisa Litvinova, Chair of the gallery business section of the Creative Union of Artists of Russia. Izolyator was represented by Ivan Panfilov, Commercial Director of Izolyator.

In total, the gallery of the Art Deco Museum presented more than 200



Ivan Panfilov with organizers and experts of the competition of artists ArtStart Without Borders



The artists presented more than 200 works related to various kinds of visual arts



The awards ceremony of winners of the competition

56 | First corporate sports contest has discovered new heroes and winners

The first corporate sports contest, dedicated to the 13th Anniversary of the manufacturing facility in Pavlovskaya Sloboda, went successfully at Izolyator.

The sports contest includes tournaments in the following sports: badminton (women and men), futsal, volleyball.

Tournament participants - both individual employees of the enterprise, and teams from structural divisions or mixed teams, as well as participants from other organizations.

The chairman and co-chairman of the organizing committee of the corporate sports contest - CEO of Massa LLC Sergey Moiseev and CEO of Zavod Izolyator LLC Alexander Slavinsky addressed the audience with a welcome speech during the official opening of the Spartakiad.

► At the moment the Izolyator sports contest, dedicated to the 13th anniversary of the manufacturing facility in Pavlovskaya Sloboda, Moscow Region, will be open



▲ Members of the organizing committee - Alexander Slavinsky and Sergey Moiseev - are greeting the participants of the Izolyator plant sports contest.



▼ The first day of the corporate sports contest was bright and unforgettable



▲ Fans are saluting heartily the participants of the corporate sports contest



The same day the first competitions of the women's badminton tournament took place. The participants demonstrated a dynamic and exciting game.

Within more than two months, while the competition lasted, three tournaments have taken place:

- female and male badminton, in which 6 women and 11 men took part;
- futsal cup with 4 teams playing;
- volleyball tournament, where 4 teams also took part.



▶ A series of volleyball matches was played during the corporate sports contest



◀ The women badminton tournament became the first competition in the program of the Izolyator plant sports contest

▼ The futsal competition became one of the brightest events of the sports contest



▼ The men's badminton cup is now being played



SPORTS

All the fans, friends and colleagues are proud of the sportsmen and sincerely celebrate their victories! Elena Posokh - the first place in the women's badminton tournament, Dmitry Lopatin became the winner of the men's tournament. Select team East (captain Alexey Mokhov) - the strongest squad of the futsal tournament. Select team Magellan, led by Sergey Moiseev is the winner of gold medals and the cup of the volleyball tournament.

The sportsmen who engaged in all kinds of sports are worth a special mention. For instance, Maxim Osipov and Ilya Laptev were awarded a special prize "Sports Oscar".

Dmitry and Maria Orekhovs are recognized as the most athletic family of the corporate sports contest. Julia Turina earned a prize as one of the most active fans.

May the sports traditions find response and development in the Izolyator plant team as ever!

▶ Select team Magellan, led by Sergey Moiseev is the winner of gold medals and the cup of the volleyball tournament



◀ Select team East, captain Alexey Mokhov - the strongest squad of the futsal tournament



▲ Elena Posokh - the first place in the women's badminton tournament

▼ Dmitry Lopatin - the winner of the men's badminton tournament



59 | Go, Elektronik, go!



Izolyator representative Elena Posokh and director of the Volunteer Cultural Center Andrey Stepin at the Match of Generations of MIET students and alumni

This year the Elektronik hockey club of MIET celebrated its tenth anniversary. During this time, the team has achieved strong results and is rightfully considered one of the strongest student hockey teams.

The event has become a tradition in the jubilee years of the university. The first match took place in 2015, when the alumni team won with a score 11: 9, and this time the students beat the graduates scoring 11: 5. After the match, a series of shootouts took place, which did not go into the overall standings. In shootouts with a score of 2: 1, the team of alumni took the upper hand. ■

A bright sports festival, dedicated to the 55th anniversary of the National Research University Moscow Institute of Electronic Technology, was the hockey Match of Generations with the participation of the Elektronik student team supported by Izolyator. MIET students and alumni met in a friendly match.

The sports and entertainment event began with an opening part, in which the Head of the Volunteer Cultural Center Andrey Stepin and the representative of Izolyator Elena Posokh made congratulations to MIET and the Elektronik hockey club.



Players of the Elektronik MIET student team supported by Izolyator

A solid support

CEO of Zavod Izolyator Alexander Slavinsky and MIET's Director of Sports Center Konstantin Firsanov discussed forms of support of the student hockey team Elektronik of MIET. Elektronik is

a co-founder of the Moscow Student Hockey League (MSHL).

Today this sports team from Zelenograd plays in the highest division of the MSHL, and also active-

ly participates in the games of the Student Hockey League. The MIET administration expressed sincere gratitude to the Izolyator team for their support in the development of student sports. ■



Director of sports center of the National Research University Moscow Institute of Electronic Technology Konstantin Firsanov (R) and Alexander Slavinsky at the meeting at Izolyator plant



Elektronik is in the game

OUR PARTNERS

We appreciate all our partners



Inter RAO Group is a diversified energy holding, managing assets in Russia and European and CIS countries. The group's activities include production of electric and thermal power, wholesales of energy, international trading, engineering, export of power equipment, management of distribution networks outside Russia.



«Alageum Electric» is the largest electrical holding company in Kazakhstan, which includes more than 30 large enterprises and factories, successfully operating in the electric energy sector, electrical engineering and construction. The products of Alageum Electric meet Kazakhstan's and international quality standards and are exported to the CIS and Middle East countries.



Balikesir Elektromekanik Sanayi Tesisleri A. S. (BEST) is a manufacturer of high-quality and reliable distribution and power transformers. BEST is the largest national manufacturer in Turkey, which enjoys reputation of a reliable supplier to more than 50 countries.



Kazakhstan Electricity Grid Operating Company - KEGOC was established in accordance with the decree of the Government of the Republic of Kazakhstan in 1996. KEGOC is a system operator of the Unified Electric Power System of the Republic of Kazakhstan.



Gazprom is a global energy company. The main areas of activity are geological exploration, production, transportation, storage, processing and sale of gas, gas condensate and oil, the sale of gas as a motor fuel, as well as the production and marketing of heat and electricity.



International Council on Large Electric Systems (Conseil International des Grands Réseaux Électriques - CIGRE) is the largest international non-profit Association in power industry. It is one of the most authoritative and significant international scientific and technical associations.



Saudi Electricity Company (SEC) is a state-owned electricity company with a monopoly on the production, transmission and distribution of electricity in Saudi Arabia.



The state power company of Vietnam EVN National Power Transmission Corporation (EVN NPT) was founded in 2008 as result of reorganization of activities of four transmission companies: Power Transmission Company No. 1, 2, 3, 4 and three power project management offices - Northern, Central and Southern.



GE T&D India Ltd makes equipment for power transmission on large distances, such as: switchgear for substations with air or SF6 insulation, circuit breakers, power transformers and measuring transformers.



IMP Powers Ltd., a flagship company of the \$120 Million IMP-Mangalam group, is a name to be reckoned with in the manufacturing of transformers and reactors up 315 MVA and up to 400 kV. This is one of the leading transformer companies of India in the equipment segment 132/220 kV with a park of over 35 000 transformers all over the world.



Haefely Test AG (Switzerland) designs and manufactures systems of surge voltage and current testing, systems of high-voltage alternating current testing, equipment for power cables, motors, generators, distribution and power transformers testing. Haefely Test AG and Hipotronics Inc. (USA) are operating under the common brand Haefely Hipotronics.



Kolektor Etra d.o.o. is a manufacturer of power transformers and generators up to 500 MVA and up to 420 kV. The plant has a modern laboratory to test transformers, equipped with sensitive measurement instrumentation, allowing for making accurate measurements and provide reliable results.



Mehru Electrical & Mechanical Engineers (P) Ltd. makes measuring transformers up to 420 kV. The company is a leading supplier of measuring transformers for numerous customers both inside India and the rest of the world: the products of the company are exported to 30 countries.



Maschinenfabrik Reinhausen GmbH (MR) is a leading company within the Reinhausen Group. For 30 years, MR has designed and manufactured insulation tubes from glassfiber reinforced epoxy resin. Since 2009, these insulators are made by Reinhausen Power composites GmbH, a 100% subsidiary of MR.



Power Grid Corporation of India Limited (PowerGrid) is an India-based state power grid operator engaged in construction, operation and maintenance of inter-state transmission system. This is one of the largest companies for electric power transmission in the world. The company is largely specialized in construction and operation of electric networks in India.



TBEA Co., Ltd., based on the advanced experience of power facilities construction in China, offers ecological, intellectual, reliable and highly efficient power equipment in more than 70 countries and regions of the world.



The Transmission Corporation of Telangana Limited (TSTRANSCO) was founded in the result of India's power industry reform. In 2014, APTRANSCO was divided into regional grid companies TSTRANSCO and APTRANSCO.



Toshiba Transmission & Distribution Systems (India) Pvt. Ltd. (TTDI) is a transformer manufacturer since establishment in 2013. Toshiba Transmission & Distribution Systems group of companies is a global leader in delivery of integrated solutions for transmission and distribution of electric power.



VUJE a.s. is an engineering company, which is engaged in project, contractor, sales, research and training activities mainly in nuclear and traditional power industry. All the projects are done for the customers on turn-key basis, i.e. a project is fulfilled from design documentation to completing complex testing.



Wacker Chemie AG is multinational chemical company, headquartered in Munich, Germany. Its division Wacker Silicones is among the world's biggest manufacturers of silanes through silicones. Wacker Silicones supplies components of organosilicon compound to Izolyator for high-voltage bushings' polymer external insulation making.



ZREW Transformatory is based in Lodz, Poland. The company has worked on the market of transformers for over 60 years. It manufactures, maintains, modernizes and runs diagnostics of oil power transformers.



The state production association of electric energy Belenergo (SPA Belenergo) organizes secure, reliable, economically efficient operation and innovative development of production, distribution and sales of electric and thermal energy.



VNIIR Hydroelectroautomation JSC offers its customers a complete services range in design, configuration, supply, installation, commissioning and putting into operation of power facilities. The enterprise operates as a full cycle engineering company.



JSC Georgian State Electrosystem (GSE) is a power grid system operator, rendering services in electric power transmission and exclusive dispatch services all over the country. It also controls the power lines of interstate transmission, which connect the country with its neighbours: Russia, Turkey, Armenia and Azerbaijan.



ATEF Group is specialized in the manufacture of high-quality electrical equipment and turnkey services of substation installation for industrial, utility, transportation and energy sector customers. The technologies that ATEF Group created are exported to 35 countries of the world.



SverdlovElectro Group (SVEL Group) is a leading power equipment manufacturer in Russia. The company boasts one of the impressive growth modernization rates in the industry. Cooperation of SVEL Group with the key Russian companies allows for an efficient contribution to the Government program of import substitution.



State Unitary Enterprise GC Dnestrenergo (SUE GC Dnestrenergo) services 35–330 kV substations and power lines throughout the territory of Transnistria. The main goal of the enterprise is to support the equipment and power lines.



Zaporozhtransformator (ZTR) is the largest in CIS and Europe company to manufacture oil power transformers and electric reactors with production capacity 60 thnd MVA per year, concentrated on a single manufacturing site. ZTR trademark is well-known for an exceptional operational reliability of equipment.



The state unitary enterprise of the Republic of Crimea Krymenergo (SUEP RC Krymenergo) is the largest power company of the Crimea that was created to ensure stability of the power grid operation and energy security in the region. The service area of SUE RC Krymenergo is the whole territory of the Crimean peninsula.



National Power Grid of Kyrgyzstan (NGP Kyrgyzstan) is an energy company, which transport electric power, produced by power plants via high-voltage power lines across the entire Kyrgyzstan to distribution companies and large industrial consumers.



The Public listed company Rossiiskie Seti (Rosseti PJSC) is a power networks operator in Russia, one of the biggest power grids in the world. The company manages 2.3 mln km of power networks, 490 thnd substations with transformer capacity exceeding 761 GVA.



The Public Listed Company Federal Hydrogenerating Company – RusHydro Group – is one of the largest Russian energy holdings. RusHydro is a leader in electric power production from renewable sources of energy, which develops generation on the basis of energy of water streams, sea tides, wind and geothermal energy.



Unipro PJSC (E.ON Russia JSC until June 2016) is the most efficient company of the thermal power generation sector in the Russian Federation. Unipro PJSC consists of five heat power plants. Company's core operations comprise electric power and capacity generation and sales.



Sverdlovsk branch of T Plus Group comprises generating and thermal assets in seven cities of Sverdlovsk region. There are six power plants (TPS, SDPP, HPP) within its structure and in operational control - Ekaterinburg heat supply company, Sverdlovsk heat supply company and Engineering and technical center of Sverdlovsk region.



PMTT. High-voltage Solutions (PMTT) manufactures 110–750 kV power transformers and autotransformers of over 25 MVA capacity including units in three-phase arrangement. The production capacity of PMTT is more than 10 000 MVA annually. Headcount — about 350 staff members.



SuperOx was established in 2006 by investor Andrey Vavilov for development of production technology of high-temperature superconductive second generation wires. The company has manufacturing branches in Russia and Japan.



Siemens Transformers LLC produces, sells and services power transformers and autotransformers with a capacity of up to 250 MVA and rated voltage up to 330 kV. The project of Siemens Transformers LLC plant is the result of many years of experience in more than 20 Siemens transformer plants around the world, including Germany and Austria.



Togliatti Transformer Limited is one of the largest designers and makers of electric engineering equipment in Russia and the CIS countries. As of today, the company's main business is highvoltage power transformers production.



JSC «Uralelectrotyazhmash» (UETM) is the biggest Russian developer and producer of electric power equipment for generation, transmission, distribution and consumption of energy. The company makes over 2000 items of products for 3000 customers in Russia and abroad.



Fortum JSC is a leading producer of thermal and electric energy in Ural and West Siberia. The company structure includes eight TPPs. Fortum is a part of Russia division of the Finnish state energy company Fortum corporation.



Rosseti FGC UES is one of the world's largest power grid companies responsible for the operation and the development of the Unified National (All-Russian) Power Grid. The company is included in the list of Russia's strategic organizations.



Chirchiq Transformer Plant JSC was founded in 1942 and for over 70 years now, has worked in machinebuilding of Uzbekistan, producing transformers and packaged transformer substations. Today, it is a leading company of electrical engineering in the Republic of Uzbekistan.



Open Joint Stock Holding Company «Electrozavod» (OJSHC Elektroavod) is the leading Russian and world-wide manufacturer of various transformer equipment being supplied for all industries including electric-power industry, metallurgy, machine building, transport, oil and gas complex, housing and utilities infrastructure.



Electroshield Samara is an advanced technology industrial company, boasting 70 years of history, and the largest domestic manufacturer 0,4–220 kV distribution equipment. This is one of the leading engineering companies comprising two design institutes, construction company, several manufacturing sites in Russia and the CIS and a well-developed regional offices network.



Energy Standard Ltd is a dynamically developing company that promotes products of the largest CIS plants on the Russian market, including products of Zaporozhtransformator. The company offers a wide range of equipment for oil, gas, chemical, ferrous and nonferrous metallurgy, rail transport and mining industries.

We appreciate our partners for any information about our companies' joint activities, which we will gladly print on the pages of the next issue of our corporate edition. We look forward to your news on this email address: n.borichev@mosizolyator.ru

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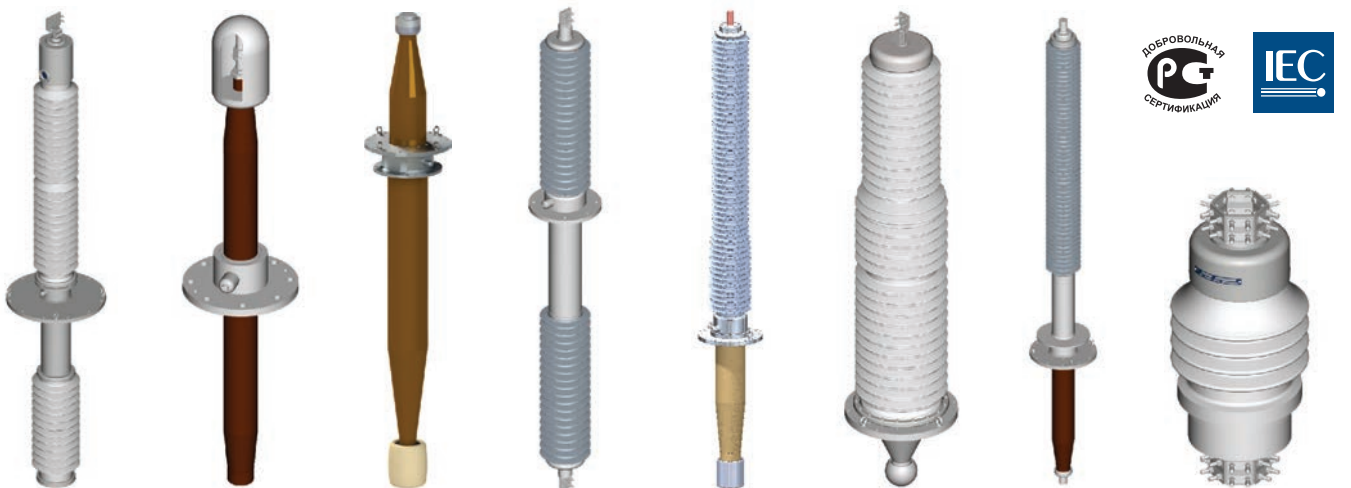
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BUSHINGS**

Innovative products

Izolyator designs, makes, services and repairs high voltage bushings on alternating and direct current in the voltage range 12–1200 kV with Air — Oil, Oil — Oil, Air — Air, Air — SF6, SF6 — Oil, Air — Liquid nitrogen applications.

The solid internal insulation, which has a higher reliability and durability, is used in the majority of produced bushings.

There are bushings with two types of solid insulation: RIP and RIN. The RIN insulation possesses extremely high hydrophobicity and resistance to atmospheric moisture, virtually eliminating any moistening of insulation. Porcelain sheds, polymer insulation directly applied on the internal insulation, composite housing with external silicone ribbing are used for external insulation.



Air–Oil bushings for oil switches
Voltage: 40.5–252 kV
Current: 1000–3150 A
Insulation: RIP or RIN

Oil–Oil bushings for cable connection of transformers
Voltage: 72.5–550 kV
Current: 630–1000 A
Insulation: RIP or RIN

Oil–Oil bushings for cable connection of transformers
Voltage: 72.5–550 kV
Current: 630–1000 A
Insulation: RIP or RIN

Air–Air wall bushings
Voltage: 72.5–252 kV
Current: 2000–4000 A

Air–Oil bushings for power transformers and shunt reactors
Voltage: 12–1200 kV
Current: 315–5000 A
Insulation: RIP or RIN (up to 550 kV)

Air–SF6 bushings for switchgear
Voltage: 252 kV
Current: 2000–3150 A

DC HV bushings
Voltage: ±126–800 kV
Current: 1800–5400 A

Air–Oil detachable bushings for power transformers
Voltage: 20–40.5 kV
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