IZOLYATOR CORPORATE EDITION

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IZOLYATOR 120+2

Century-old traditions — state-of-the-art technologies

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POWER INDUSTRY AND THE WORLD FOOTBALL CHAMPIONSHIP — UNITING NATIONS OF THE PLANET!

WRITING THE HISTORY TOGETHER!

ALEXANDER SLAVINSKY
Chairman of the Board of Directors,
Izolyator, Russia's Representative
in CIGRE SC D1, Vice-President of TRAVEK
International Association, Russia's expert
in IEC (Permanent Committee 36A),
Head of SC D1 RNC CIGRE

On 6 June 2018, Izolyator celebrated its 122nd birthday! The history of high-voltage bushing technology development in Russia is inseparably associated with Izolyator plant – a global leader in design and manufacture of high-voltage bushings and Russia's sole OEM, capable of development, production and testing of alternating and direct current bushings for ultrahigh voltages.

MILESTONES

The history of Izolyator plant is inseparably associated with origination and development of high-voltage bushings as a self-sufficient branch in electric apparatus engineering. The plant was founded on 6 June 1896 in Vsehsviatskoe village on the outskirts of Moscow, and, in 1905, the products that it made won a gold medal at the Brussels International Exhibition. The revolution nationalized the plant making it one of the leaders in GOELRO plan fulfillment for bushings and insulating materials production. The plant faced a challenging objective to start porcelain bushings production for high-voltage transmission lines. In 1922–1924, the design bureau of the plant introduced the first wall bushing designs, and, in 1927, the plant grasped the production technology of suspended insulators.

In 1980 the plant completed design works of 1150 kV bushings for the first ever ultra-high-voltage AC line Ekibastuz – Kokchetav – Kustanay that was put into operation in 1989.

Jointly with NIIPT, Izolyator designed and later started mass production of the ±110 kV 2500 A DC bushings for Vyborg DC substation for out-of-phase link between power grids of Russia and Finland, built in 1980–1984, remaining the largest in the world. In 1996, Izolyator and VEI named after Vladimir Lenin produced the first six Russian 35 kV RIP-insulated bushings and delivered for experimental operation.

These milestones are but only a few of the company achievements, which mark its bright historical path. In present days, our plant carries on with the glorious traditions of the past in an unstopping development.

PROGRAMMING THE PROGRESS

Today, Izolyator is a modern advanced technology enterprise, fitted-out with the latest equipment, able to design, manufacture and test bushings of alternating and direct current in the 12–1200 kV range. The manufacturing facility allows making of 12,000 high-voltage bushings a year. The plant facilities constantly see new machinery added, existing equipment upgraded, the level of process automation raised.

The plant constantly expands its product range by offering new development, improving existing designs and modernization.

TODAY, IZOLYATOR IS A GLOBAL LEADER IN DESIGN AND MANUFACTURING OF HIGH-VOLTAGE BUSHINGS IN THE VOLTAGE RANGE OF 12 – 1200 kV. THE MANUFACTURING CAPACITY ALLOWS FOR MAKING OF 12 000 HIGH-VOLTAGE BUSHINGS ANNUALLY. IN ITS MORE THAN 122 YEARS' HISTORY, THE ENTERPRISE HAS PRODUCED MORE THAN 620 THND HV BUSHINGS THAT ARE OPERATING IN THE OVERWHELMING MAJORITY OF POWER FACILITIES IN RUSSIA AND THE CIS COUNTRIES AS WELL AS 30 MORE COUNTRIES OF THE WORLD.

All implemented novelties are subject to a uniform ideology: equipment and technologies have to meet the highest international standards and quality requirements.

In 2002–2004, Izolyator created an original RIP-insulation technology in cooperation with the leading Russian scientific centers and applied it in mass production. Before that time, RIP-insulated bushings were assembled with imported insulation cores.

Today, Izolyator is in the process of gradual transition of high-voltage bushings range to the solid RIP insulation as more advanced and promising for bushings of virtually all voltages. Bushings up to 750 kV inclusive are already made by the company.

In general, the plant's unique equipment allows for mass production of RIP bushings up to 1150 kV on alternating current and up to 1000 kV on direct current. Thus, thanks to a consistent and active technical policy of Izolyator, Russia can be proud today to possess the biggest experience of mass use of HV RIP bushings of various applications.

In 2015, Izolyator became the first supplier of HV RIP bushings to the state Indian utility Power Grid Corporation of India Limited (PowerGrid).

The markets of India and China are very attractive for Russian manufacturers of electrical products: considering the outstretch of transmission and distribution power networks, so similar to Russia. Therefore, business and cooperation opportunities are vast there.

The Vietnam's market is just as interesting – Izolyator is promoting its products there. Besides, the plants sees a multi-faceted cooperation with countries of the Asian Pacific region, Africa, Latin America, Middle East.

One of the most important events for our company is receiving of the status of the leading technology and science partner to the Russian National Committee of the International Council on Large Electric Systems – CIGRE (Conseil International des Grands Reseaux Electriques – CIGRE).

Izolyator plant is a base company, where study committee D1 RNC CIGRE Materials and Emerging Test Techniques was set up and conducts research now. Cooperation with RNC CIGRE helps to tak our work to a whole new level in the interests of all market players and development of Russian power industry in general.

Participants of SEERC Conference

In 2017, we developed designs with the newest types of insulation – RIN and RIS. The key characteristic feature of those, compared to RP, is using a special non-woven fabric or scrim instead of paper.

INTERNATIONAL COOPERATION

Over the years of reliable work, Izolyator has won trust with consumers both in Russia and abroad.

Company products are exported to more than 30 countries of the world.

Izolyator's key priority in the coming years is further expansion of presence on European and Asian markets and strive to leadership in development, production and implementation of modern technologies in power industry.

CIGRE: UNION BUILT ON THE BASIS OF COMMON PRINCIPLES AND VALUES

The key event of 2018 for the development of international cooperation in power industry will be the 47th CIGRE session, which will be held in Paris in August. The main goal of the session will be scientific and technical knowledge exchange between engineers, scientist and technical specialists from all countries in generation and transmission of high-voltage electric power. From study committee D1, seven members will work at the session, including the Head of the committee, Chairman of the Board of Directors of Izolyator Alexander Slavinsky.

The preferential topics for study committee D1 at the 47th CIGRE session will be:

PT 1 Insulating Systems of HVDC

- Measuring techniques for checking electric fields modeling.
- New diagnostics for technical maintenance.
- Experience and requirements to new techniques and standards of testing.

PT 2 Materials and aging

- New loads, e.g. from power electronics.
- Equipment, operation under high load, e.g. compact applications.
- Materials with less degree of environmental impact.

PT 3 Testing, monitoring and diagnostics

- Track record and added value of online-monitoring systems.
- Reliability of equipment and systems of testing, monitoring and diagnostics.
- In-depth assessment of condition.

RNC CIGRE is to present 25 reports in the research fields of the study committees, with three of those to be prepared by SC D1. Study committee D1 will have business meetings with partner companies and take part in the digital exposition of RNC CIGRE.

Specialists' participation (SC D1 members) is expected to be more representative in the work of international workgroups, such as:

WG D 1.52 Moisture measurement insulating fluids and transformer insulation",

WG D 1.64 Electrical insulation systems at cryogenic temperatures,

WG D 1.70 Functional properties of modern insulating liquids for transformers and similar electrical equipment.

WG D 1.70 «Functional properties of modern insulating liquids for transformers and similar electrical equipment»

Study committee D1 RNC CIGRE Materials and Emerging Test Techniques, created in 2016 on the basis of Izolyator plant, continues to work productively.

In accordance with main goals and directions of SC D1 RNC CIGRE activities, the tasks for 2018 were formulated as:

- expansion of international activity, presenting candidates among study committee's members for working in international workgroups;
- participation in events, related to SC D1 CIGRE research fields,
- attraction of youth to study committee's work to form a talent pool among students, young specialists, PhD students of leading technical universities,

STUDY COMMITTEE D1 RNC CIGRE MATERIALS AND EMERGING TEST TECHNIQUES WAS CREATED ON THE BASIS OF IZOLYATOR PLANT. THE COMPANY WAS GRANTED STATUS OF THE LEADING SCIENCE AND TECHNOLOGY PARTNER TO RNC CIGRE. THE RESEARCH AREA OF STUDY COMMITTEE D1 — ISSUES OF THEORETICAL STUDY IN ELECTRICAL INSULATING MATERIALS APPLICATION IN HIGH-VOLTAGE EQUIPMENT.

- attraction of new Russian specialists to the committee's work,
- participation in the events, organized by CIGRE and youth section of CIGRE,
- participation in conferences and exhibitions both in Russia and abroad.

KEY EVENTS OF STUDY COMMITTEE D1 IN 2ND QUARTER 2018:

On 12–13 June 2018, Head of SC D1, Chairman of the Board of Directors of Izolyator Alexander Slavinsky took part in the 2nd **SEERC Power Conference "Energy transition and innovations in electricity sector"** in Kyiv. The topics of the conference are related to receiving practical results in modernization and development of power industry in SEERC region. The conference discussed regional aspects of power energy market development, issues, related to achieving a better stability of the power systems of the countries of South-East Europe, innovations in the power industry infrastructure of the countries of the region and other key issues.

The SEERC conference became a communication platform for a productive dialogue between representatives of power generating and power distributing companies, power equipment manufacturers, suppliers of services, developers of innovations and energy systems, international power engineers' community and for everyone, interested in the issues of forming and development of the market of electric energy.

> THE SEERC CONFERENCE BECAME A COMMUNICATION PLATFORM FOR A PRODUCTIVE DIALOGUE BETWEEN REPRESENTATIVES OF POWER GENERATING AND POWER DISTRIBUTING COMPANIES, POWER EQUIPMENT MANUFACTURERS, SUPPLIERS OF SERVICES, DEVELOPERS OF INNOVATIONS AND NEWEST ENERGY SYSTEMS, INTERNATIONAL POWER ENGINEERS' COMMUNITY.

Alexander Slavinsky and President of Ukranian National Committee of CIGRE Alexander Svetelik at the 2nd SEERC Conference

Alexander Slavinsky and Chief Designer of ZTR Alexander Bass at the second SEERC conference

Alexander Slavinsky met with President of the Ukranian National Committee of CIGRE Alexander Svetelik at the conference and discussed cooperation prospects on SC D1 topics with him.

Alexander Slavinsky also visited exposition of Zaporozhtransformator plant and had a meeting with Chief Designer Alexander Bass.

Fault-free transformer 5.0 seminar participants

Study committee D1 participated in the work of the fifth sectoral seminar **"Fault-free transformer 5.0. The scientific basis and practical solutions that work"**, organized by Delta Trafo in April 2018 in Nizhny Novgorod.

In his report at the seminar, Alexander Slavinsky pointed out the key directions of activities in CIGRE, called to raise efficiency of power equipment, activities of study committee D1 RNC CIGRE and told about Izolyator's export promotion of highly advanced power equipment.

The actual topics, quality line-up of speakers and positive feedback from participants speak for the fact that Fault-free Transformer, again, became one of the awaited and useful events for specialists n power industry, machine building and metallurgy.

Alexander Slavinsky speaking at Fault-free transformer 5.0 seminar

MPEI team ArcticEnergo is winner of one of the preliminary rounds of the Student League of the International Engineering Case-in 2018 Championship

Members of study committee D1 actively engaged in the preliminary rounds of the **Student League of the International Case-in engineering championship.**

In 2018, about 4000 future engineers took part in the preliminary rounds of the Championship, which is organized with support from the Ministry of Energy of Russian Federation. Also, about 1000 representatives of leading companies, scientific and civic organizations became Case-in experts.

The Power Industry section included 37 preliminary rounds at the leading universities of our country. SC D1 representatives took part in all five preliminary on-site rounds and one round, organized as a video conference, as experts.

SEERC

SEERC (South Eastern European Region of CIGRE) is a regional association of the International Council on Large Electric Systems CIGRE, created for effort consolidation to develop the power industry of the South European countries.

DELTA TRAFO

Delta Trafo Limited offers a complete range of high-quality and timely services in design, production, modernization and maintenance of electric transformers. The company uses only modern design and technical solutions.

МЕЖДУНАРОДНЫЙ ИНЖЕНЕРНЫЙ ЧЕМПИОНАТ CASE-IN

International Engineering Case-in Championship is the largest practice-oriented competition in solving engineering cases in Russia and the CIS countries. The project is developed in line with a policy to popularize occupation in working positions and engineering professions, approved by the order of the Government of the Russian Federation.

Vladimir Ustinov, Coordinator of study committee D1 RNC CIGRE and Deputy Quality Director at Izolyator and Galina Ustinova, Engineer at the Moscow branch of Izolyator took part at the preliminary round. The teams, representing leading technical universities from the CIS countries Belarus, Kazakhstan and Kyrgyzstan, took part in the preliminary round in a video conference format, organized at MPEI.

Study committee D1 participated in the XIth International Scientific and Technical Conference **"Safety, Efficiency and Economics of Nuclear Power Industry"** (SEENPI-2018). Head of Directorate of Diagnostics and Testing of Electrical elements of nuclear power plants and nuclear installations of the Research Institute of Devices (NIIP JSC) Alexander Kononenko represented the study committee.

Mr. Kononenko was author and speaker in the report "Assessment of electrical insulation condition using results of isothermal relief current measurements", and he also was a co-author of the report "Frequency resonant reflectometry – new possibilities for registering defects in cables".

Members of study committee D1 participated in the All-Russian scientific and technical conference **"Methods of increasing reliability, efficiency and safety of energy production"**, which was organized by Krasnodar region Association "Regional Scientific and Technical Union of Power Engineers and Technicians" in Gelendzhik.

The conference went with the technical support and participation of Kubanenergo, the largest power grid company in Krasnodar region and Republic of Adygeya. Study committee D1 RNC CIGRE "Materials and emerging test techniques" made a presentation about its activities, also introducing key directions of research at Izolyator as a leading science and technology partner to RNC CIGRE.

With common efforts, the study committee's work is brought to a new level, and results are above all in the activities of the Russian specialists of SC D1.

Participants of the 21st Conference "Methods of increasing reliability, efficiency and safety of energy production" (photos courtesy of KRA RSTUPET)

МНТК-2018

International Scientific and Technical Conference "Safety, Efficiency and Economics of Nuclear Power Industry" is held once every two years in Moscow and organized by Rosenergoatom Concern. The goal is to provide an opportunity for experience and information exchange on key topical issues of NPP operation.

Krasnodar region Association "Regional Scientific and Technical Union of Power Engineers and Technicians" (KRA RSTUPET) is called to maintain the balance of interests of producers and consumers of energy, coordinated interaction of power supply organizations, scientific institutions.

FIELD FOR INNOVATIONS

High-voltage bushings on temporary rack at the assembly shop of Izolyator

KONSTANTIN SIPILKIN
R&D Director

WE CONSTANTLY DEVELOP NEW BUSHING DESIGNS BOTH FOR REPLACEMENT OF OPERATING EQUIPMENT (INCLUDING IMPORTED) AND FOR TRANSFORMER PLANTS ACCORDING TO TECHNICAL REQUIREMENTS OF CUSTOMERS WITH SPECIFIED CHARACTERISTICS AND DIMENSIONS, WHICH GIVES US CONSIDERABLE COMPETITIVE ADVANTAGE OVER OTHER MANUFACTURERS OF SUCH PRODUCTS.

High-voltage bushings are an important link between an electrical transmission line and other electric equipment. For an uninterruptible and quality operation, bushings are created to meet design features of such equipment as transformers, shunt reactors, oil circuit-breakers, gas-insulated switchgear.

The external and internal insulation of a high-voltage bushing provides a reliable and stable power supply even in the most adverse conditions of the operating environment.

The proprietary technologies are protected with twelve international patents, including patents on the making of RIP and RIN insulation and production of the external polymer insulation with rated voltage 35 to 330 kV.

The key product of Izolyator is direct and alternating current high-voltage bushings with rated voltages from 10 to 1150 kV.

HIGH-VOLTAGE BUSHINGS CLASSIFICATION:

By operating medium

- Oil to Air
- Oil to Oil
- Oil to SF6 Gas
- SF6 Gas to Air
- Air to Air

By the type of internal insulation

- RIP

- RIN
- Oil-in-paper
- Oil
- SF6 Gas

By the type of internal insulation

- Porcelain insulation
- Polymer casting
- Hollow polymer insulator

By application

- For power transformers and shunt reactors
- Detachable for power transformers
- For cable connection to transformers
- For connection of transformer and switchgear
- For oil circuit breakers
- Gas-insulated for switchgear

Types of high-voltage bushings made by Izolyator

Oil – Air High-Voltage bushings for power transformers and shunt reactors
Voltage: 10–1150 kV
Current: 315–5000 A

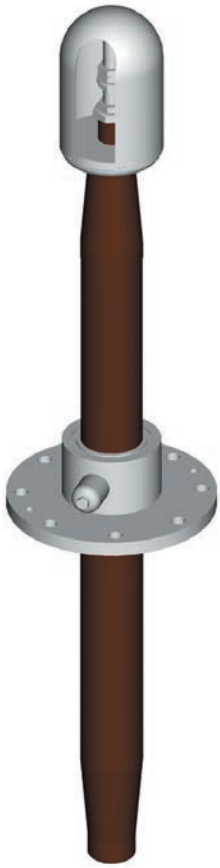
On the engineering side, bushings are feedthrough insulators, intended for leading-in or out high voltage from a transformer or reactor tank, and are independent items of equipment.

Polymer insulation is used on bushings with internal RIP insulation as alternative to porcelain housing and performs the same functions.

Detachable Oil - Air High-Voltage bushings for power transformers
Voltage: 20–35 kV
Rated current: 6–20 kA

These bushings are intended for connection and transmission of electric power, produced by the generator unit of a power plant, to the low-voltage winding of a power transformer.

Detachable bushings design is specific by absense of own internal insulation and measuring tap, and a large surface of contact areas.



Oil - Oil high-voltage bushings for cable connection to transformers
Voltage: 110–500 kV
Rated current: 630–10000 A

The bushing is a feedthrough insulator, intended for connecting a transformer tap with the cable end sleeve.

During operation, the bottom part of the bushing is inside the transformer tank, while the upper one is in the cover of the cable gland. Both parts of the bushing are immersed in transformer oil, therefore such bushings are called "oil - oil". The bushings of the type are peculiar by absence of external insulation both on the bottom and the upper part of the bushing.

YURY NIKITIN
Chief Designer

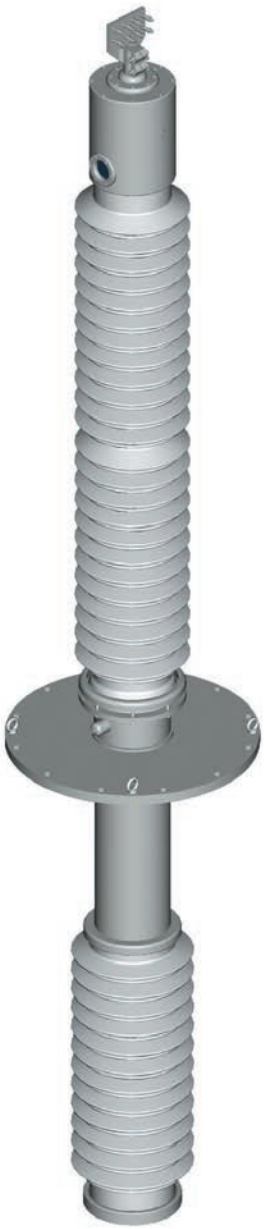
EARLY IN THE 2000S, OUR COMPANY, TOGETHER WITH LEADING RESEARCH CENTERS OF RUSSIA, CREATED A UNIQUE PRODUCTION TECHNOLOGY OF RIP INSULATION, BASED ON PAPER, SATURATED WITH RESIN. IT ALLOWED TO INCREASE RELIABILITY OF PRODUCTS AND ENHANCED THEIR SERVICE LIFE. IN 2017, IZOLYATOR PLANT DEVELOPED A DESIGN WITH THE NEWEST TYPE OF INSULATION – RIN AND RIS.

Oil - SF6 High-Voltage bushings for connection of transformers and switchgear
Voltage: 110–500 kV
Rated current: 800–3150 A

Bushings of this type are feedthrough insulators, intended for separating two insulating media – SF6 Gas and oil in an airtight switchgear when connecting it to a transformer. In operation, the bottom part of the bushings is inside the transformer tank in the transformer oil medium, while the upper part is in the cover of SF6 Gas compartment.

The bushings of this type are characterized by absence of external insulation both on the bottom and top parts.

As these bushings separate two insulating media, they are put to additional testing for leak-tightness at very large pressure values.



Oil - Air High-Voltage bushings for oil switches
Voltage: 35–220 kV
Rated current: 1000–3150 A

Bushings are the main insulating element of the oil circuit-breaker, ensuring its reliable and secure operation.

The polymer external insulation is used as an alternative to porcelain insulation on 110 and 35 kV bushings.

Air - Air High-Voltage Wall bushings
Voltage: 66–220 kV
Rated current: 2000–4000 A

The bushings are intended for installation in walls and floor slabs of switch houses. Izolyator makes wall bushings only with condenser type solid internal insulation with RIP technology as the most efficient.

Air - air bushings can have a porcelain external insulation or polymer finning. A special gel – a dry filler – is used in bushings with porcelain housing. No filler is required when a polymer silicone finning is applied directly on the insulation core.

SF6 - Air high-voltage bushings for switchgear
Voltage: 126 kV
Current: 2000 A

This group includes special bushings, intended for connection of gas-insulated switchgear to power lines.

The bushing is a feedthrough insulator, intended for lead-out of the high voltage from a switchgear or transformer, and is a separate item in terms of construction.

In operation, the bottom part of the bushing is positioned inside the switchgear or transformer, in the gas medium, while its top part is in the open air.

SF6 - Air high-voltage bushings, filled with SF6 Gas
Voltage: 220 kV
Rated current: 2000–3150 A

Their difference is in the simplicity of construction: no insulation core, no equalizing or condenser liners, no need in measuring tap. However, in order to create an enclosed volume, the bushing has a bottom porcelain housing. To equalize the electric field inside the bushing in the grounded flange area, they use an internal shield.

Direct current high-voltage bushings
Voltage: 126–800 kV
Current: 1800–5400 A

These are intended for installation on equipment, which can operate on alternating and direct currents as well as their combination.

Direct current bushings are installed on transformers specifically at a nearly horizontal angle, making it irrational to use bushings with porcelain housing.

DMITRY MASHINISTOV
Head of SVN-Service

OUR COMPANY PROVIDES A COMPLETE RANGE OF TECHNICAL SUPPORT SERVICES FOR INSTALLED BUSHINGS. OUR SERVICE INCLUDES EXAMINATION OF A BUSHING'S EXTERIOR, OIL PRESSURE CHECK, ELECTRICAL MEASUREMENTS, HEAT MONITORING. WE ARE PREPARED TO SUPPLY INSTALLATION SUPERVISION OF HIGH-VOLTAGE BUSHINGS AND CONSULT OUR PARTNERS 7 DAYS A WEEK, 24 HOURS A DAY!

DEVELOPMENT OF ENGINEERING CAPABILITIES

PUTTING INTO OPERATION 1200 kV GENERATOR

Izolyator installed, tested and put in operation a new testing equipment – 1200 kV surge generator made by Haefely Test AG

The generator was installed in a 150 kV station, which is a part of Izolyator's high-voltage equipment test center, to expand technical capabilities of the center, optimize tests and their conformity to IEC 60137:2017 "Insulated bushings for alternating voltages above 1000 V" requirements.

Thus, the launch of the new equipment signifies a new stage in the successful cooperation between Haefely Test AG and Izolyator.

1200 kV surge impulse generator, installed at Izolyator plant's test center

Experts who installed the surge generator of Haefely Test AG at the test center of Izolyator, in the center – Dmitry Ivanov

Installation and start-up of the generator went successfully!

HAEFELY HIPOTRONICS

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.

KERI

Korea Electrotechnology Research Institute (KERI) is a government-funded research institute specializing in electronics and affiliated with the National Research Council of Science and Technology of the Ministry of Science and ICT.

SUCCESSFUL TESTS AT KERI

SuperOx and Izolyator collaborated in the successful acceptance tests of the first phase of 220 kV superconductive current limiter at the largest international test center KERI in Changwon, South Korea.

VISIT OF VNIICP REPRESENTATIVES

Representatives of Russian Cable Scientific Research and Development Institute visited Izolyator plant.

At the plant tour, the visitors were demonstrated modern technologies of production and testing of high-voltage bushings with solid internal RIP and RIN insulation.

The first phase of the 220 kV superconductive current limiter, equipped with Izolyator bushings, at KERI test center

MEETING AT SEVCABLE

Izolyator management representatives visited Sevcable plant and R&D Institute Sevcable, divisions of the Sevcable Group, in Saint Petersburg.

Izolyator was represented by Chairman of the Board of Directors Alexander Slavinsky and R&D Director Konstantin Sipilkin.

At Sevcable plant, the visitors were received by General Director of Sevcable Group Ltd Artem Pidnik and at Sevcable R&D Institute – by Director Gennady Kovalev.

At the meetings, the top managers considered the most promising areas of mutually beneficial cooperation on the basis of common goals and innovative potentials of the Sevcable Group and Izolyator plant.

All business meetings participants expressed satisfaction with the results of the talks.

VNIIKP representatives at Izolyator test center, L-R: Director of Energy Cable and Wire Division Mikhail Shuvalov, Lev Makarov, PhD, Chief of cable fittings laboratory, Leading research associate Petr Fursev and Konstantin Sipilkin

Photo courtesy Sevcable Group

Photo courtesy Sevcable Group

SuperOx was established in 2006 by investor Andrey Vavilov for development of producton technology of high-temperature superconductive second generation wires. The core of the intellectual capital of the company is 30 year experience in plating coatings of complex oxides and studying properties of HTSC materials.

Sevcable Group is a largest manufacturers of cabling products in Russia. The core manufacturing facility of the group is Sevcable plant in Saint Petersburg. Over 25 000 label sizes, mainly cables and wires, are made at the plants of the company.

The All-Russian R&D and Technological Institute of the cable industry (VNIICP) offers innovative solutions in research, design, development, standardization and testing of cables, wires, cable fittings, materials, technologies and production plants.

RESULT IN OUR WORK AS IMPORTANT AS IN SPORTS

IVAN PANFILOV
Commercial Director,
1st Deputy CEO

International cooperation has always been an important part of our work and Izolyator development. We greatly value an opportunity to prove reliability and effeciency of our technologies by one of the most challenging tests - the test of time. We are searching for exactly such long-term and efficient partnerships, opening new regions of our presence.

Presently, Izolyator exports its products to more than 30 countries of the world, and the staff members of the company are always open to dialogue, primarily, to set up a friendly interaction with partners.

In the second quarter of 2018, we continued our dialogue with European, Asian and Middle Eastern partners. Thus, we had several productive meetings and seminars for representatives of electrical companies of Hungary and Turkey. We shipped batches of high-voltage bushings to India, Vietnam, Turkey, Belgium and Estonia.

All high-voltage bushings that we make are certified according to Russian and international standards. Using own patented technologies, only the best available equipment and materials, work of highly qualified personnel and stage by stage production process control guaranty a high technical level and product quality of Izolyator plant equipment.

Izolyator has carefully analyzied the key trends of the international power market as part of strategic partners research and long-term cooperation planning. Our research has shown that India is one of the most promising partners in that respect.

The power complex of India is rapidly developing by, for instance, improving backbone power lines. Friendly ties since the Soviet Union times, a positive dialogue between the Federal Grid Company of the Unified Energy System of Russia and the state company of India Power Grid Corporation of India Limited Ltd (PowerGrid), as well as Izolyator's operations on the Indian power market, allowed us to continue exchanges between the power grid companies and industrial enterprises of the two countries.

Another important factor of cooperation development is Russia's active role in the International Council on Large Electric Systems CIGRE. India is an active contributor to the Council: PowerGrid management heads the Indian National Committee of CIGRE. Izolyator, in its turn, is a base enterprise of SC D1 RNC CIGRE.

As cooperation development initiative in Indian market, we had several business meetings, both between FGC UES and PowerGrid and industrial manufacturers and power equipment OEMs of India and Russia and organized an "Open Conference in power industry between Russia and India". From the Indian side, management and representatives of all main PowerGrid divisions and technical specialists of the largest Indian electrical engineering companies participated.

Consideration of the leading Russian power products manufacturers' experience for modernization of India's power complex was among the most meaningful results of those meetings and conferences. This result is built on the long-standing successful exchanges with the Federal Grid Company of Russia, which has the biggest in the world outstretch of power lines and naturally the biggest park of equipment that operates in highly diverse climate conditions.

Actively contacting regional power grid and generating companies, strengthening mutually beneficial and long-term relations with key consumers of high-voltage bushings in the Indian market, Izolyator was able to increase its order portfolio.

> STRENGTHENING OF PARTNER RELATIONS WITH POWER GRID AND GENERATING COMPANIES AS WELL AS TRANSFORMER PLANTS OF EUROPE AND ASIA IS ONE OF THE MOST IMPORTANT OBJECTIVES FOR IZOLYATOR.

Open seminar of Izolyator at the Turkish state power grid company Turkiye Elektrik İletim A.Ş

As result of that extensive work in the region, we signed supply contracts for large batches of high-voltage RIP bushings with rated voltages 52, 252, 420 and 800 kV to different regions of India - more than 520 pcs totally!

We are developing a productive dialogue with Indian partners, send shipments and share experience in operation and maintenance of high-voltage bushings.

In the first quarter of 2018, our company won tender of the state Indian power grid company Power Grid Corporation of India Limited for delivery of a large batch of 420 and 800 kV HV RIP bushings.

As Izolyator expands its presence in Asian markets, we expect to sign a Memorandum of understanding with the Indian Mehru at CIGRE session in Paris. The document will entail creation of a joint venture to manufacture HV bushings with modern RIP insulation on the territory of India.

Mehru Electrical & Mechanical Engineers (P) Ltd. makes measuring transformers for up to 420 kV voltages. The company is one of the leading suppliers of measuring transformers not only in India, but in the whole world.

Operation on the highest level and in conformity with world standards is what gives Izolyator advantage over other manufacturers of electrical equipment. The constructive dialogue with power engineers and power equipment OEMs in various countries is a remarkable fact, speaking for consideration, openness and interest to development of long-term and mutually beneficial partner relations.

> AS IZOLYATOR EXPANDS ITS PRESENCE IN ASIAN MARKETS, WE EXPECT TO SIGN A MEMORANDUM OF UNDERSTANDING WITH THE INDIAN MEHRU AT CIGRE SESSION IN PARIS. THE DOCUMENT WILL ENTAIL CREATION OF A JOINT VENTURE TO MANUFACTURE HV BUSHINGS WITH MODERN RIP INSULATION ON THE TERRITORY OF INDIA.

Audience of Izolyator's presentation at Prime Meiden Ltd.

WARM WELCOME AND STRIVE TO INTERNATIONAL DIALOGUE

ANDREY SHORNIKOV

Head of International Business Development

The key strategic goal of Izolyator is not only expansion of cooperation, but also promotion of integrative power complex development globally. We daily work to make the best practice that Izolyator possesses available to power engineers, power equipment OEMs and, consequently, consumers all over the world.

FACING CONSUMERS

In the second quarter of 2018 we had regular contacts with our foreign partners. Thus, in April and May, Izolyator representatives visited several electrical engineering companies, regional power grid and generating companies in India.

We made business visits to transformer plants in Mumbai: CG Power and Industrial Solutions Limited, Siemens Ltd., Bharat Bijlee Limited, IMP Powers Ltd., EMCO Limited and Transformers & Rectifiers (India Ltd.) transformer plant in Ahmadabad. Besides, we had a meeting with the management of electrical equipment plant Prime Meiden Ltd. At those meetings, we discussed demands of the plants in high-voltae bushings and Izolyator's capabilities in delivery of RIP bushings in variety of voltages. We also considered current and potential joint projects.

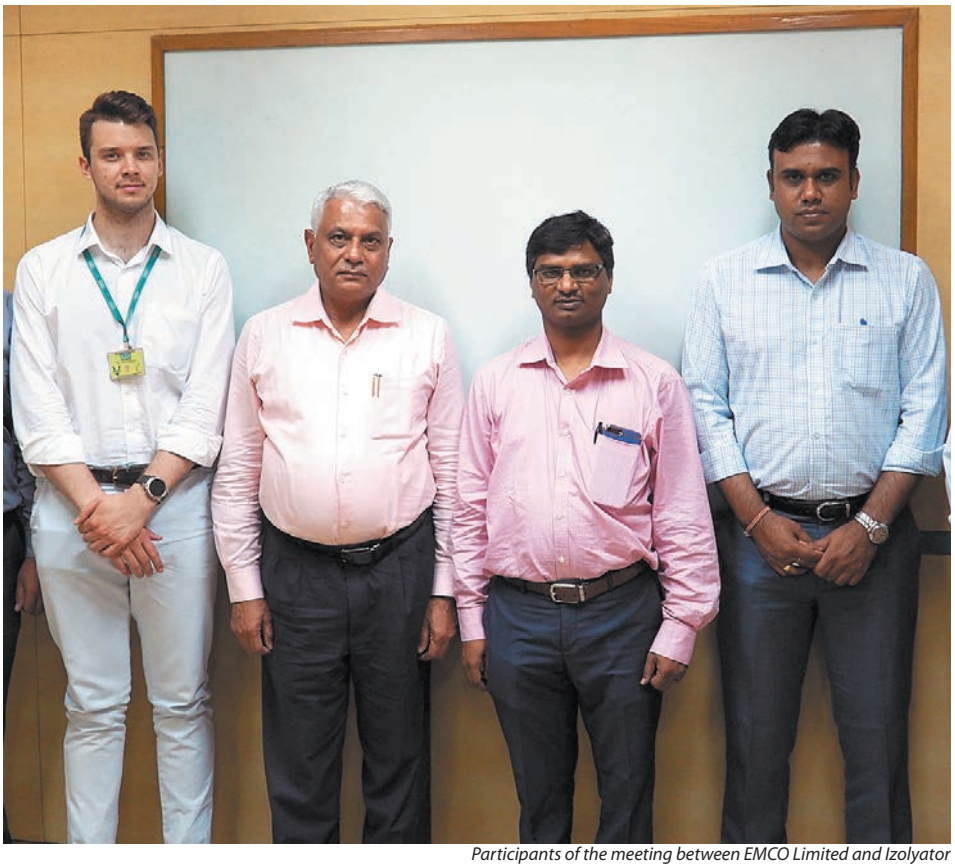
During the trips, we held talks at the regoinal power grid companies in several states of India: Maharashtra State Electricity Transmission Company limited in Mumbai, Karnataka Power Transmission Corporation Limited, Transmission Corporation of Andhra Pradesh Limited and Tamil Nadu Transmission Corporation Limited. We ended our tour by the meeting at the state regional power grid company of Madhya Pradesh Power Transmission Company Ltd.

Actively contacting regional power grid and generating companies, stengthening mutually beneficial and long-term relations with the main consumers of bushings in the Indian market, we were able to increase the order volume. Dr. Ashok Singh participated in all the meetings.

ATTENTION TO DETAIL

A series of meetings, talks and technical seminars for partners, where our sales and technical representatives told about production, specifics of installation and operation

> WE DAILY WORK TO MAKE THE BEST PRACTICE THAT IZOLYATOR POSSESSES AVAILABLE TO POWER ENGINEERS, POWER EQUIPMENT OEMS AND, CONSEQUENTLY, CONSUMERS ALL OVER THE WORLD.



Participants of the meeting between EMCO Limited and Izolyator

CG Power and Industrial Solutions Limited (CG), earlier known as Crompton Greaves Limited, is a company with immense authority at home in India and a 70-year history. CG has made a confident step forward to become a multinational corporation.

Siemens AG (Berlin and Munich) is a global technology powerhouse that has stood for engineering excellence, innovation, quality and reliability for more than 165 years. The company is active in more than 200 countries, focusing on the areas of electricity management, automation and digitalization.

Bharat Bijlee is a pioneer in electrical engineering in India, and one of the most trusted names in the industry today. It also undertakes turnkey projects (switchyards) and is well positioned to provide complete 'concept to commissioning' services.

of bushings with solid insulation, their unmatched advantages over oil-in-paper bushings have become a traditional practice with Izolyator.

In the second quarter, we continued our dialogue with European and Middle Eastern partners. Several productive meetings and seminars were organized for representatives of electrical engineering companies in Hungary and Turkey. We shipped batches of high-voltage bushings to Belgium and Estonia.

Cooperation with leading energy companies of Vietnam and its major HV transformers manfuacturers is a good example of partner relations development. Over the past several years of our activities in the Vietnamese market, Izolyator has received orders for high-voltage RIP bushings range of 72–220 kV for the needs of power generation facilities and transformer plants. Shipments to Vietnamese partners continued in the second quarter of the year.

We sincerely thank our foreign partners for their strong interest in Izolyator's achievements and hope that our dialogue will not only continue, but also form a strong foundation for future cooperation.

WE ARE DEVELOPING A PRODUCTIVE DIALOGUE WITH INDIAN PARTNERS, SEND SHIPMENTS OF OUR PRODUCTS AND SHARE EXPERIENCE IN OPERATION AND MAINTENANCE OF HIGH-VOLTAGE BUSHINGS.

DMITRIY OREKHOV

Manager of International Business Development Department

Participants of meeting at CG plant, L-R: Pravin Dongarwar, Dt. VP Purchase,Mukesh Mahajan, Manager Purchase, Ashok Singh, Dmitriy Orekhov.. Photo: instagram.com

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. Early in the 2000s, IMP made a breakthrough, leaving behind the nearest competition, after entering the 220 and 400 kV segment.

Founded in 1964, EMCO Limited is one of India's leading products and solutions providers up to 765 kV/ ± 800 kV for power generation, transmission, distribution utilities and industry.

Transformers & Rectifiers (India) Ltd (T & R), founded in 1994, makes power equipment including a wide range of transformers for both domestic and global markets.

OPEN SEMINAR OF IZOLYATOR AT TURKIYE ELEKTRIK İLETIM A.Ş.

YAROSLAV SEDOV
Head of EU Sales

In the second quarter of 2018, Izolyator held a public workshop for management and specialists of maintenance divisions of the state Turkish power grid company Türkiye Elektrik İletim A.Ş. in Ankara to exchange experience in electric power transmission and distribution with the use of high-voltage bushings with RIP insulation.

HISTORY OF RELATIONS

Russia and Turkey are traditionally bound with strong trade relations in all areas of business. The countries play a colossal role in the economies of each other, starting from agriculture and ending with high-tech sector products. Power industry is one of the most important areas of cooperation between the countries. Izolyator actively cooperated with power equipment OEMs of Turkey over the last year, telling about its century-long experience of delivery and operation of high-voltage bushings all over the world and actively researching the situation on the Turkish power equipment market. Among Izolyator's key partners in Turkey are Schneider Electric, BEST, ASTOR, GE Turkey, which maintain an open and regular dialogue with Izolyator and ongoing deliveries of Izolyator bushings.

In addition to the above said, BEST and GE Turkey have made a production audit of Izolyator plant in Moscow and gave a high appraisal of the technological operations and stage by stage quality control in design, production, testing and shipment of high-voltage bushings. It was a much-needed prerequisite for a successful operation in the Turkish region.

SEMINAR PREPARATION

In active dialogue with our Turkish OEM partners, we came to a conclusion that the state power grid company of Turkey TEİAŞ is looking forward to the future, actively exploring opportunities of using the most advanced and modern equipment on its facilities. This finding was a basis for discussion of a public workshop organization at TEİAŞ.

MEETING AT TEİAŞ

In April 2018, Izolyator representatives visited TEİAŞ in Ankara for reconfirming interest in a technical seminar and selection of the topics of most interest. In the result of that meeting, the sides confirmed their mutual interest in having the seminar.

> IN PURSUIT OF GLOBAL BETTERMENT, WE PROMOTE AN IDEA OF COOPERATION ON INTER-STATE LEVEL WITHIN CIGRE FRAMEWORK TO OUR TURKISH PARTNERS.

Business meetings at the seminar at TEİAŞ, L-R: TEİAŞ representative Mert Duygulu, representative of Tempek Foreign Trade Co. Sezai Ozkaya, Victor Kiryukhin, Yaroslav Sedov, Alexander Znamenskiy, representative of Tempek Foreign Trade Co. Safinaz Aybar, representative of TEİAŞ Fatih Yünsel

Türkiye Elektrik İletim A.Ş. (TEİAŞ) is a state Turkish power grid company engaged in electricity transmission with construction of new power lines and development of the country's infrastructure using advanced technologies.

Tempek Foreign Trade Co. represents some of the well-known manufacturers of distribution and power transformer equipment, as well as protection and measurement equipment in Turkey and in other countries.

WORKSHOP OPENING

The workshop for exchange of experience took place in June. Izolyator was represented by

- Yaroslav Sedov, Head of EU sales,
- Victor Kiryukhin, Lead Technical Support Specialist,
- Alexander Znamenskiy, Manager of International Business Development.

From the Turkish side, more than 35 attendees, representing different TEİAŞ divisions, participated. TEİAŞ gave a large importance to the event, with management representatives participating in the seminar as well: Mesut Yilmaz, Aydemir Özkan, Çetin Sakioğlu, Mustafa İleri and Fırat Durmuş. Representatives of the Turkish Tempek Foreign Trade Co. also took part in the event.

The audience of Izolyator plant's workshop at TEİAŞ

Workshop went with lively interest from the audience

WELCOME ADDRESS FROM TEİAŞ AND IZOLYATOR

Mesut Yilmaz, Director, Materials addressed the seminar participants with a welcome speech. He stressed the importance of such events for development of the Turkey – Russia relations. From Izolyator side, Yaroslav Sedov and Alexander Znamenskiy thanked their Turkish partners for the unique opportunity to tell about Izolyator and its unique products. The speakers used presentations, videos and leaflets as visual aids.

BEST

Balıkesir Elektromekanik Sanayi Tesisleri A.S. (BEST) is a manufacturer of high-quality and reliable distribution and power transformers. BEST is the largest national transformer producer in Turkey. Power transformers from BEST have a reputation for quality and reliability in more than 50 countries.

ASTOR

Astor Transformer AS producing the transformers used in the electric energy transmission and distribution. It make production of cast resin dry type and oily type transformers and 300 kV 200 MVA power transformers in its factory having 26000 meter square indoor area on 36000 meter square in Ankara Sincan 1st Organized Industrial Zone.

BASED ON THE LARGE EXPERIENCE OF IZOLYATOR IN SETTING UP AND DEVELOPING RELATIONS ON THE POWER MARKETS IN MANY COUNTRIES IN THE WORLD, WE GLADLY ACCEPTED AN OFFER TO HAVE A PUBLIC WORKSHOP FOR THE SPECIALISTS OF OUR COMPANY. IN RESULT, WE HAVE GOT AN OVERVIEW OF IZOLYATOR HIGH-VOLTAGE BUSHINGS, THEIR TECHNICAL FEATURES AND OPERATING CHARACTERISTICS.

FIRAT DURMUŞ
Director of Department at TEİAŞ

BUSINESS PROGRAM OF THE WORKSHOP

The Turkish market is one of the most interesting, with huge growth potential and presence of established local power equipment manufacturers that meet requirements of the domestic market and sell product to many other countries, sich as Botswana, Ghana, Congo and countries of Central Asia, Europe and CIS.

Alexander Znamenskiy made an extensive overview of the condition of Russia's power complex. His report contained key facts and trends of the power industry by directions: generation, transmission and distribution.

The report also provided an estimate of Russian power equipment OEMs' potential in production of modern equipment and detailed information about Izolyator activities as a leading Russian manufacturer of high-voltage bushings.

Head of EU Sales at Izolyator Yaroslav Sedov familiarized the seminar attendees with Izolyator plant's product range, namely with HV RIP bushings, emphasizing their advantages. He provided argumentation for the plant's transition to producing solely RIP bushings.

At the moment, all power grid companies of the world, including Russia and Turkey, are mainly operating bushings, made under an old technology, using oil-in-paper insulation, with service life exceeding all maximum allowable terms.

In their reports, Yaroslav Sedov and Alexander Znamenskiy gave a detail overview of the real application and maintenance track record of HV OIP bushings in power systems of different countries and spoke about the main international principles to assess OIP bushings operational risks.

Taking into account the largest in the world outstretch of power lines of the Federal Grid Company of Russia and, consequently, the biggest park of high-voltage bushings of various voltages, operating in different climate conditions, and also considering FGC UES's experience and combination of other factors, such as index of bushings technical condition, the speakers presented the key principles used for assessment of operational risks, types of sched-

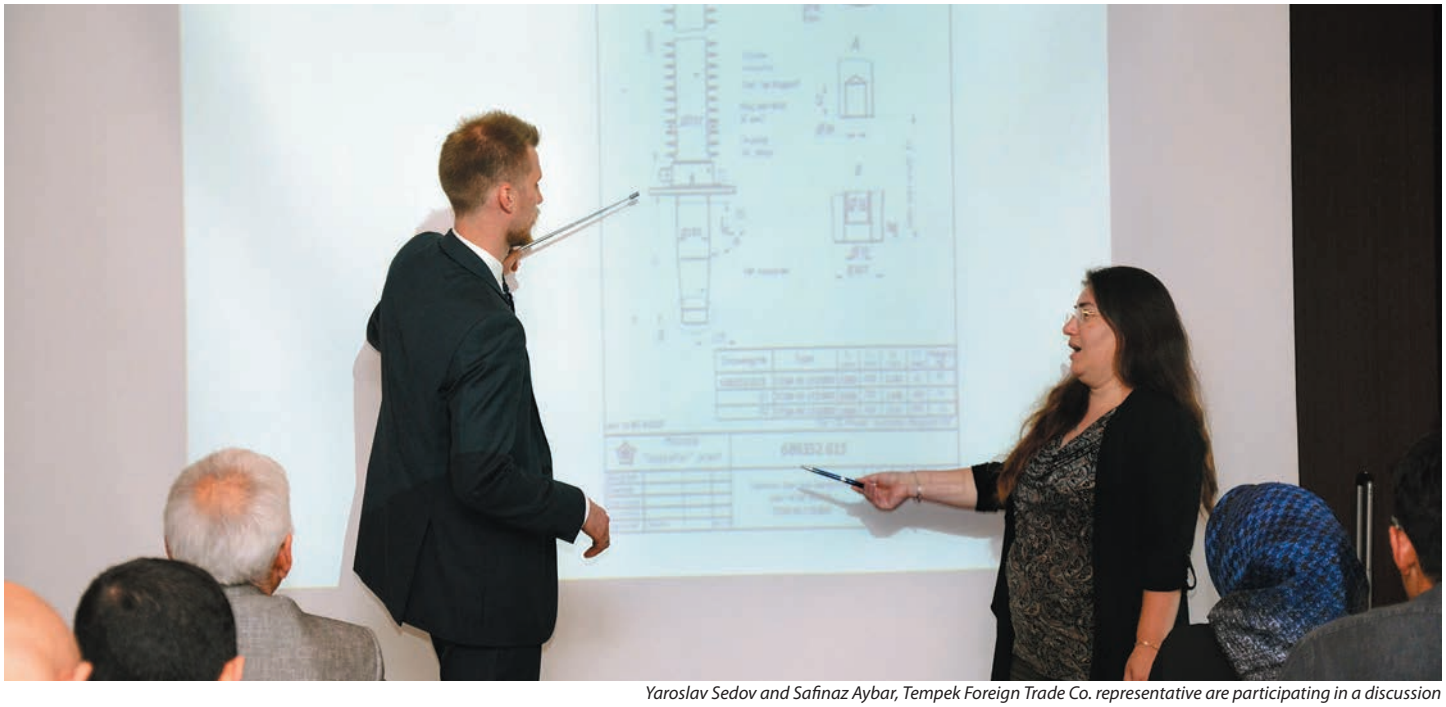
Yaroslav Sedov's report

Alexander Znamenskiy's report

uled monitoring and measurements, necessity of additional diagnostics and principles of decision making on OIP bushings replacement.

This many years' experience is priceless. Izolyator openly offers to use it in order to ensure a guaranteed fault-free operation of the power complex in Turkey. Also, based on the cooperation experience of Izolyator and FGC UES PJSC in transition to operation of exclusively RIP bushings, the speakers introduced key advantages, benefits and economic feasibility of such a transition to high-voltage bushings with solid RIP insulation.

Alexander Slavinsky's address on the screen



Yaroslav Sedov and Safinaz Aybar, Tempek Foreign Trade Co. representative are participating in a discussion

THIS WORKSHOP IS CONGRUENT WITH THE GENERAL CONCEPT OF RUSSIA - TURKEY RELATIONS DEVELOPMENT AND ALLOWS TO STRENGTHEN TIES BETWEEN OUR POWER SYSTEMS. FOR US, THE WORKSHOP PRESENTS A GREAT OPPORTUNITY TO GET AN INTRODUCTION TO THE PRODUCTS FROM RUSSIA'S LEADING COMPANY IN HIGH-VOLTAGE BUSHINGS PRODUCTION AND OUTLINE PROSPECTS OF FURTHER COOPERATION.

SEZAI OZKAYA

Representative of Tempek Foreign Trade Co.

SUGGESTION ON COOPERATION DEVELOPMENT

To continue an open dialogue with TEİAŞ, Izolyator came out with a suggestion to install a trial batch of bushings to assess advantages of using RIP technology. Our colleagues also gave an assurance that the bushings installation will be done under supervision of SVN-Service engineers from Izolyator.

The seminar went in the atmosphere of keen interest and high engagement of the audience, with Izolyator representatives giving exhaustive answers to numerous questions.

Lead Technical Support Specialist Victor Kiryukhin elaborated on the details concerning testing and operating characteristics of Izolyator high-voltage bushings, emphasizing the high

Izolyator's workshop at TEİAŞ was successful: representative of Tempek Foreign Trade Co. Sezai Ozkaya and Yaroslav Sedov

Izolyator's seminar at TEİAŞ is first of all a dialogue between two interested parties, L-R: Director of Department at TEİAŞ Fırat Durmuş, Director of Department at TEİAŞ Mustafa İleri, Alexander Znamenskiy and representative of Tempek Foreign Trade Co. Safinaz Aybar

durability potential and reliability of bushings with solid insulation in operation in various climate conditions.

It is a common opinion that the seminar reached all its targets, so we should carry on with our practice of sharing knowledge in the framework of cooperation between TEİAŞ and Izolyator.

CLOSING REMARKS

In conclusion, Izolyator representatives thanked all seminar participants for their work, active engagement and interesting questions. They expressed hope for a continued dialogue between the companies. The workshop signified a new stage in development of relations between the Turkish and Russian power engineers and electrical engineering companies.

Izolyator representatives at the workshop at TEİAŞ, L-R: Victor Kiryukhin, Yaroslav Sedov and Alexander Znamenskiy

The sides expressed a mutual intention to develop business relation in various formats, including organization of events, using all available sectoral platforms – local and international. For instance, TEİAŞ management showed interest in setting up a trilateral dialogue within CIGRE inviting the Federal Gird Company of the Unified Energy System and Izolyator.

The workshop became a successful result of a big common preparatory work, and we wish to thank TEİAŞ for an efficient cooperation, high professional level of the event execution and intention to develop business relations on a long-term basis.

Izolyator will carry on with its practice of arranging open seminars to exchange experience on advantages of HV RIP bushings application and maintenance.

We appreciate specialists and management of the state power grid company TEİAŞ and Tempek Foreign Trade Co. for participation in the open seminar on experience sharing in transmission and distribution of electric power.

Participants of Izolyator plant's workshop at TEİAŞ

EXPANDING GEOGRAPHY OF DELIVERIES

Izolyator can be rightly proud of its ability to combine the best practice from experience and modern innovative technologies. We are aiming at the access of power engineers all over the world to the most modern engineering, allowing to ensure uninterruptible power supply to consumers.

Traditionally, Europe, both historically and geographically, remains a trading partner of electrical engineering companies of Russia, so our company keeps strengthening partner ties with European companies as for example CG, ETD, ZREW maintaining contacts on all levels.

Several meetings with our European partners in the second quarter of 2018 appeared as continuation of the extensive work on HV RIP bushings promotion, actively done by our company over several past years. In April, Alexander Znamenskiy, International BDM at Izolyator visited CG Electric Systems Hungary Zrt. plant in Szolnok, Hungary. Head of Purchasing Balazs Buczko and Head of Quality and Testing Balazs Sztari received the visitor at the plant.

CG Electric Systems Hungary is one of the largest European manufacturers of power transformers, gas-insulated devices and electric motors. The company is a turn-key solutions supplier for high-voltage substations all over the world.

At Izolyator presentation, we paid a special attention to products - high-voltage bushings with solid RIP insulation, namely, their technical and operating advantages. Also, our representative told about the company's successul operations on the global market and track record of product deliveries to European energy and industrial companies.

The participants in the talks marked, the Izolyator's interest in expansion of the geography of deliveries, on one side, and CG's orientation to technical solutions, on the other side, create a tangible ground for strengthening and active development of mutually beneficial cooperation between the companies.

Today, Izolyator is not only recognized in Europe, but also preceived as a reliable and attractive partner. We value every pro-

ALEXANDER ZNAMENSKIY

Manager of International Business Development Department

DURING THE PRESENTATION OF IZOLYATOR, WE PAY SPECIAL ATTENTION TO THE UNIQUE PRODUCTS — HIGH-VOLTAGE BUSHINGS WITH SOLID RIP AND RIN INSULATION, THEIR TECHNICAL AND OPERATING FEATURES.

Talks at CG Electric Systems Hungary Zrt., L-R: Head of Quality and Testing Balazs Sztari at CG Electric Systems Hungary Zrt., Alexander Znamenskiy and Head of Purchasing Balazs Buczko

CG Electric Systems Hungary (formerly Ganz — manufacturer of the world's first transformer in 1885) is a high technology company with a strong reputation for global engineering capabilities in the area of power transformers, GIS switchgear and rotating machines for the global market.

ject and consider it to be momentous for further promotion of our products.

We emphasize that our operating experience of HV RIP bushings of various applications helps us to find optimal solutions, which our partners can always witness for themselves. We are receiving a lot of positive references and are happy that our work raises a lively interest. Our company strives for the projects that we work on became a solid foundation for a long and productive interaction.

We are always thankful to our partners for their trust and work to prove it. Izolyator is dynamically developing, meeting all new challenges and offering modern and reliable electrical equipment in many countries of the world.

A 330 kV Izolyator bushing is getting ready for testing in Latvia

ETD transformatory (Czech Rep) experience in the production of distribution, power and other various types of world class transformers reaches back to 1923. Current product line includes power transformers (single and three phase, regulating and non regulating), auto transformers, furnace transformers, traction transformers and chokes for use in the rail industry as well as special reactors.

ZREW Transformatory (Poland) manufactures, maintains, modernizes and runs diagnostics of oil power transformers. The company makes transformers for distribution networks, block transformers for power plants and thermal power plants up to 125 MVA with rated voltages up to 170 kV.

A FOOTBALL PLAYER IS SPOKEN FOR HIS LEGS, OUR COMPANY — FOR UNINTERRUPTIBLE OPERATION OF POWER EQUIPMENT

MAXIM OSIPOV
Head of Sales CIS & Baltics

POSSESSING A CONSIDERABLE EXPERIENCE, WE AIM FOR MAKING A CONTRIBUTION TO THE CONTINUOUS DEVELOPMENT OF POWER INDUSTRY PROFESSIONALS AND RESPONSIBLY APPROACH OPPORTUNITIES OF WORKSHOPS FOR TECHNICAL SPECIALISTS OF OUR PARTNERS.

Participants of Izolyator's workshop at Barki Tochik

The CIS is a special territory as the countries, entering the Commonwealth, are bound with decades-long common work, including power industry. So, today it is particularly important to support and cultivate these relations. In the several past years, our company improved ties with power grid companies and power equipment OEMs in Armenia, Moldavia, Tajikistan, Kazakhstan, Belarus, Ukraine, Uzbekistan, Kyrgyzstan and Georgia.

IMPLEMENTING RELIABLE AND MODERN EQUIPMENT

The second quarter proved busy in terms of high-voltage bushings deliveries, meeting and technical workshops for our partners.

Growing the order portfolio and fulfiling obligations under contracts in the second quarter, we shipped batches of 35 - 750 kV bushings to our partners in Belarus, Kazakhstan, Kyrgyzstan, Moldavia, Ukraine, Ge

In April, we gave a technical workshop for technical specialists of the state energy company of Tajikistan Barki Tochik. At the workshop, we reviewed all aspects of Izolyator HV RIP and RIN bushings application: technical and operating advantages, interchangeability with obsolete bushings, construction design, installation on power equipment.

Besides, we had talks, where Izolyator representatives were received by Sodykzhon Boboev, Director of procurement company Tajikenergosnab, subsidiary of Barki Tochik. Izolyator and Tajikenergosnab are tied with a long-standing fruitful cooperation, successul accomplishment of big projects and, more importantly, the common goal of innovative development of the power industry in Tajikistan.

During the trip to Tajikistan, we also paid a visit to Talco Cable Industries in Dushanbe. There at the

Business meeting at Chernomorenergo: Chief Engineer of RUE Chernomorenergo Tengiz Girdzhinba (L) and Dmitriy Karasev

Barki Tochik JSC is a state-owned national electric power company of the Tajikistan based in Dushanbe. The company and its assets are a property of the Republic of Tajikistan.

Talco Cable Industries (Nokili Talco Ltd) is a cable plant in Dushanbe, Tajikistan. The company makes a wide range of cabling products, which meet requirements of international quality standards. The highly advanced equipment of the plant allows for making of 16 – 300 mm^2 cable sizes.

The Republican unitary enterprise Chernomorenergo (RUE Chernomorenergo) is a state power company that makes, transmits and distributes electric power on the territory of Abkhazia.

talks, the sides shared experience of production of modern electrical products and development of advanced technologies.

We are proud to have an opportunity to not only tell about our company's achievements, but also to demonstrate our work.

In April, we made a visit to Chernomorenergo in Sukhum, Abkhazia.

Chief Engineer Tengiz Girdzhinba received Dmitriy Karasev, Sales Manager CIS & Baltics. At the talks, the sides discussed the volume of demands in 110 and 220 kV bushings till the end of 2018.

The visit of Chernomorenergo's Chief of Procurement Lidia Meleschenko to Izolyator plant was another step in development of relations. The sides discussed progress of current projects, outlined plans of further coordination. The hosts arranged for a plant tour, introducing the guest to the history and present days of Izolyator and the unique technologies of production and testing of high-voltage bushings with solid insulation.

bushings with solid RIP insulation were presented.

One more meeting took place at the Moldavian metallurgical plant in Rybnitsa in Transdniester. MMP representatives showed a large interest in

Talks at MMP, L-R: Supply Chain Leader at MMP Sergey Dimitresko, Chief Power Engineer at MMP Sergey Khlystal and Dmitry Karasev.

DEVELOPMENT OF MUTUALLY BENEFICIAL RELATIONS

Several meetings with Izolyator partners went in Transdniester in April. We discussed demands of companies in high-voltage bushings and power equipment. Dmitriy Karasev visited the state unitary enterprise GC Dniesterenergo in Tiraspol. The guest was received by Chief Engineer Andrey Gitzman. Ivan Lupashko, General Director at Valkyria Ltd. also took part at the meeting. Izolyator's wide capabilities in production and delivery of modern high-voltage Izolyator's innovative products. The sides outlined further steps in development of business relations on a mutually beneficial basis.

THE BEST INNOVATIVE SOLUTION

The single day of presentation "Innovations for power industry development" of the National Power Grid of Kyrgyzstan became a special event, where Izolyator HV RIN bushings were recognized the best innovative solution. That was a conclusion, derived by the Expert Board of the single day of presentation at NPG Kyrgyzstan JSC, at the end of the event.

Izolyator's Head of Sales CIS & Baltics Maxim Osipov made a presentation about Izolyator plant and its achievements in cooperation with the world's leading energy companies.

Besides, Lead Technical Support Specialist Victor Kiryukhin made a report "HV RIN bushings, made by Izolyator". The report was dedicated to the results of Izolyator's research and testing of a next-generation type of internal insulation of high-voltage bushings — RIN insulation, which is represented by resin impregnated non-woven material.

We appreciate the National Power Grid of Kyrgyzstan JSC and the Expert Board of the single day of presentation at NPG Kyrgyzstan JSC for the invitation to take part in such a meaningful event and for the good trust in Izolyator's innovative development.

In June, Elzada Sargashkaeva, National Power Grid of Kyrgyzstan representative visited Izolyator plant. We were pleased to show the visitor our plant, familiarizing her with modern production and testing technologies of high-voltage bushings with solid RIP and RIN insulation.

We would prefer to be viewed as an attractive strategic partner to a simple manufacturer. We do have what to tell about and share with our partners — and the best way to do that is to meet in person.

We appreciate that our partners, whom we closely cooperate with, irregardless of whether we have a long-term cooperation or nurture plans of relations development, are aiming for brining the newest technologies into the industry together with us, making the power industries of the whole countries more reliable and secure.

State Unitary Enterprise GC Dniestrenergo (SUE GC Dnestrenergo) services 35 – 330 kV substations and power lines. The main goal of the enterprise is to support the equipment and power lines by reconstruction, technical upgrading, modernization, capital and general repairs on good technical level.

Moldavia Metallurgical Plant (MMP) is a modern and highly productive ironworks enterprise possessing world class technologies. The plant produces strand-cast steel, bar steel rolled stock and hot-rolled rods of low-carbon steels, high-carbon steels and low-alloy steels according to the standards of the CIS countries and leading countries of the world.

National Power Grid of Kyrgyzstan JSC is an energy company that transports electric power via ETLs across the entire Kyrgyz Republic to distribution companies and large industrial consumers.

OPENNESS, SAFETY, HOSPITALITY: THE WAY THEY WELCOME YOU IN RUSSIA

OLEG BAKULIN

Director of Partner Relations at Izolyator

Power industry has been one of the most critical sectors of economy. Therefore, it is important for us that the deliveries to our partners were made in time and in full volume and the operating equipment were modernized as scheduled..

JUST-IN-TIME DELIVERIES

Izolyator puts it above all to deliver products in time. In the second quarter, this imperative becomes even stronger — just ahead of start of maintenance programs at our key customers in interregional distribution grid companies.

Shipments of high-voltage bushings to the subsidiaries of Rosseti PJSC — IDGC Siberia, IDGC Center and IDGC Volga, MOESK, Kubanenergo and to Bashkirenergo — were made just-in-time against the contract conditions, allowing the power engineers to timely finish their maintenance and get ready for the winter period.

Presently, more than 250 000 Izolyator high-voltage bushings are operating on Rosseti PJSC facilities with 50 000 RIP bushings among them. So Russia possesses the vastest experience of operation of HV RIP bushings of various application today.

We had no less productive cooperation with Rosenergoatom Concern — Balakovo NPP in particular. Izolyator delivered 220 and 500 kV bushings, made to the third class of safety at the end of June.

THE HIGHEST REQUIREMENTS TO RELIABILITY

Our company received reference from Vilyuiskaya HPP cascade named after E.N. Batenchuk about successful operation of Izolyator high-voltage bushings in the severe climate conditions. Beginning from 2012, we supplied wall bushings with polymer external insulation to switchgear ZRU-220 of HPP-1 of Vilyuiskaya HPP cascade.

The equipment was installed as replacement of obsolete and expired bushings. Most importantly, the operator did not register any faults during operation of the equipment in severe climate conditions (temperature range from +40 to –65 dg Celsius), which speaks for reliability of our products.

RECEIVING GUESTS

Traditionally, we are happy to welcome partners to Izolyator plant. In April, representatives of Lenenergo power grid company visited our plant: Deputy Chief Engineer Maintenance Andrey Mamontov, Deputy Head of Maintenance Roman Ognev and Assistant Chief Engineer Anastasia Morozova.

We made a presentation of advanced bushing designs to the guests and together outlined directions of technical cooperation.

> SUCH MEETINGS ARE AN IMPORTANT PART OF OUR WORK, WHICH HELPS TO FOLLOW THE TRENDS. WE DO APPRECIATE SUCH OPPORTUNITY.

Lenenergo representatives are visiting the assembly shop of Izolyator plant, L-R: Victor Kiryukhin, Deputy Head of Maintenance at Lenenergo PJSC Roman Ognev, Deputy Chief Engineer Maintenance at Lenenergo PJSC Andrey Mamontov and Assistant Chief Engineer at Lenenergo PJSC Anastasia Morozova

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, 502 thnd substations with transformer capacity exceeding 781 MVA.

Vilyuiskaya HPP cascade named after E.N. Batenchuk is a hydraulic power plants complex in Russia, located on the Vilyui river in Sakha Republic (Yakutia). Most of the erection works were completed in the Soviet period when the cascade construction was associated with the industrial development and tapping resources of Yakutia.

Balakovo NPP is a largest Russian producer of electric power. Most - 7 out of 8 safety and reliability indicators of Balakovo, which are measured using approach of the World Association of Nuclear Operators, are better than the worldwide average, comparing to other power units. Balakovo NPP is a branch of Rosenergoatom Concern.

The visit ended with a traditional plant tour, where the visitor familiarized themselves with the unique production and testing technologies of high-voltage bushings with solid insulation.

In June, representatives of RusHydro Group visited Izolyator plant. RusHydro was represented by Deputy Chief Engineer Dmitriy Kolesnikov and Head of Electrical Equipment Directorate Alexander Okhrim. At Izolyator, the visitors were received by Chairman of the Board of Directors Alexander Slavinsky and R&D Director Konstantin Sipilkin.

The guests familiarized themselves with the process of high-voltage bushings production with most attention given to the advanced designs of the Izolyator as well as operating specifics of HV RIP bushings at power facilities.

RusHydro Group representatives at the test center of Izolyator, L-R: Konstantin Sipilkin, Alexander Slavinsky, Deputy Chief Engineer of RusHydro Group Dmitry Kolesnikov, Head of Electrical Equipment Directorate of RusHydro Group Alexander Okhrim, Vladimir Ustinov and Oleg Bakulin

RusHydro and Izolyator repersentatives at the meeting table

TO KNOW ABOUT ALL SUBTLETIES

We are always happy to engage in a constructive dialogue and treat every productive discussion with enthusiasm. In June, Izolyator participated in the Supplier Day 2018 Forum, which was organized by the Center for development of economy for the clients of the trading platform B2B-Center. The forum's topic is "New regulations in purchasing: how to win and stay efficient". The forum's topic is "New regulations in purchasing: how to win and stay efficient" this year. At the event, audience of the forum discussed amendments in the Federal Law 223, regulating purchasing procedures in state companies.

Participants of the event listened to reports of procurement experts, studied changes in the federal legislation, discussed solutions to the typical situations of disputes between buyers and suppliers, ways to increase efficiency of sales and work subtleties on a digital trading platform. As part of the forum, the organizers held an official ceremony Leader of competitive sales Awards.

We will carry on with our practice of meetings with consumers of our products to discuss high-voltage delivery issues and operation of installed equipment. We will also continue to form the portfolio for 2018–2019. Besides, our plans see obtaining certificate of the attestation committee of Rosseti PJSC on RIN bushings to enable us to proceed to serial production of such products.

Public listed company Lenenergo (Lenenergo PJSC) is one of the biggest distibution grid companies in Russia, operator of 0.4 - 110 kV networks on the territory of Saint-Petersburg and Leningrad region.

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.

LIKE WITH FOOTBALL PLAYERS, IT IS CRUCIAL FOR US TO BE ABLE TO TAKE RESPONSIBILITY

ALEXANDER SAVINOV
Director of Strategic Sales

In the modern world, time is one of the most important resources, meaning that it is crucial to fulfil tasks within clear-cut time limits. We always remember about it: in the second quarter, we shipped and dilvered all required bushings to our partners from the Far East to the North-Western borders of our country.

INCREASING RELIABILITY OF POWER EQUIPMENT

It is no secret that power engineers' work greatly depends on timely deliveries. For us, it is a key determinant in work and we always aim for making our deliveries meet the shortest available terms.

We constantly develop our cooperation and take responsibility for the final result. In May, representatives of the Federal Grid Company of the Unified Energy System visited Izolyator plant. The

IZOLYATOR AS AN OFFICIAL SUPPLIER AND STRATEGIC PARTNER OF THE FEDERAL GRID COMPANY OF THE UNIFIED ENERGY SYSTEM TAKES AN ACTIVE PART IN THE TARGETED PROGRAM OF TRANSFORMER EQUIPMENT MODERNIZATION AT FGC UES PJSC.

Federal Grid Company was represented by Lead Experts, Substation Alexander Konstantinov and Dmitry Alexeev, Lead Engineer, Head of Chemical Laboratory, Yamalo-Nenets enterprise of Main power transmission lines of West Siberia Marina Lyutikova. The focus of discussion was on specifics of construction design and application advantages of HV RIN bushings and diagnostic technique of technical characteristics of bushings in operation.

IN THE SECOND QUARTER WE SIGNED LONG-TERM SUPPLY CONTRACTS OF HIGH-VOLTAGE BUSHINGS FOR SEVERAL SUBSIDIARIES OF FGC UES PJSC.

Participants of plant tour for representatives of the Federal Grid Company at the assembly shop of Izolyator plant, L-R: Lead Expert, Substation Dmitry Alexeev, Lead Expert, Substation Alexander Konstantinov, Lead Engineer, Head of Chemical Laboratory, Yamalo-Nenets enterprise of Main power transmission lines of West Siberia Marina Lyutikova and Dmitry Mashinistov

FGC UES

The Public listed company Federal Grid Company of the Unified energy system (FGC UES PJSC) is one of the largest public power grid companies by power lines outstretch and installed transformer capacity in the world.

FGC UES

Main power transmission lines of West Siberia (MES West Siberia) is a branch of FGC UES PJSC operating 220 - 500 kV power lines and electric substations on the territory of the Ural federal district.

Izolyator specialists are proud to make their contribution to securing a fault-free operation of electrical equipment at power facilities.

CONTRIBUTING TO INDUSTRY DEVELOPMENT

We are convinced that there is an honest dialogue behind every fruitful and mutually beneficial cooperation, so, with big pleasure, we visit and receive our partners at the plant.

Our meeting at the head office of the Territorial Generating Company #11 in Omsk was productive and busyL having discussed results of cooperation, we proceeded to the plans of further cooperation development in the near future and long-term perspective.

Participants of talks between TGC-11 and Izolyator at TGC-11 head office

No less productive was the visit to the headquarter of Main power transmission lines of Volga in Samara. During the meeting, we discussed progress of ongoing joint projects and various aspects of practical interaction. We outlined the nearest work plans and agreed on the key principles of further cooperation. We appreciate our partners for their responsiveness, openness to a constructive dialogue and common achievements.

Izolyator specialists always with big interest participate in meetings with power industry professionals. In the second quarter, Izolyator took part in the sitting of the expert council of Just Russia political party group in the State Duma of Russian Federation, dedicated to import substitution topics, in Trasneft. Igor Ananskikh, First Deputy Chairman of Energy Committee of the State Duma of Russian Federation, Duma member, representing Just Russia chaired the meeting. The attending executives: Pavel Revel-Muroz, Vice President, Transneft PJSC and his colleagues in company management, representatives of affiliated companies, representatives of equipment suppliers to the fuel and energy complex and research and educational institutions of the sector. The import substitution program realization allows to decrease risks and costs of maintenance and repair of equipment and to ensure contracting of domestic machine building enterprises, promoting the growth of the Russian economy.

Despite the fact that we have already done a large amount of work, there are lot of new projects with power grid and electrical engineering companies of Russia waiting ahead. With that said, we will continue our work on timely supply of quality Izolyator products to our partners.

Sitting of the expert council of Just Russia political party group in the State Duma of Russian Federation, dedicated to import substitution topics, in Trasneft

TRANSNEFT

The Public Limited Company Transneft (PJSC Transneft) is an operator of oil trunk pipelines in Russia. The company renders crude oil and oil product transportation services via oil mains system across the Russian Federation and beyond. The Government of Russian Federation established Transneft PJSC.

INTER RAO ELECTRIC POWER PLANTS

Public listed company Territorial generating company #11 (TGC-11 JSC) unites the largest generating capacities of the Omsk region. The main activities of the company are production of electric and thermal energy. TGC-11 JSC is one of the largest heat producing companies of Siberia. The company is part of InterRao Group.

FGC UES

Main Power Transmission Lines of Volga (MES Volga) is a branch of FGC UES PJSC operating on the territory of the Mid Volga region of the Nizhny Novgorod Region. There are 8 subjects of the Russian Federation entering the service area with a total population of 17 mln people.

A GOALKEEPER GIVES CONFIDENCE TO PLAYERS, TIMELY DELIVERIES GIVE CONFIDENCE TO OUR PARTNERS

MAXIM ZAGREBIN

Head of OEM Sales

Reliability is a quality that is greatly valued in people and companies today. We want to look ahead with confidence, be sure about our prospects and growth possibilities. We can only prove ourselves to be reliable and effecient partners when we engage in sefl-improvement. At Izolyator, we prove it with our work every day.

ADVANCED TECHNOLOGICAL SOLUTIONS IN ACTION

In April, Izolyator high-voltage bushings were put in service on substations for power supply of ZapSibNeftekhim. The key unit of the complex of facilities of SIBUR's project is FGC UES's 500 kV Tobol substation, which is the first in Russia HV power facility, which realizes advanced digital technologies in complex. At the same time, 500 kV central distribution substation ZapSib of SIBUR was launched, which is used to connect the complex to the unified national power grid.

That is an example, when a large and meticulous work on agreeing technical characteristics of equipment and overall project coordination that Izolyator done jointly with Togliatti Transformer and Power Machines — Toshiba. High-voltage transformers (PMTT) is embodied in an impressive project.

At the test center of Izolyator plant, L-R: Head of Sales Dpt Elena Tishunova at SVEL Group, Chief Designer 500 kV at SVEL Group Denis Guryev and Maxim Zagrebin

> OUR PARTNERS CAN BE CONFIDENT THAT HIGH-VOLTAGE BUSHINGS WILL BE SHIPPED AND DELIVERED IN TIME. THEIR QUALITY WILL BE INVARIABLY HIGH.

Representatives of PC Electrozavod JSC at the assembly shop of Izolyator, L-R: Maxim Zagrebin, Deputy Director of General Affairs of PC Electrozavod JSC Sergey Melnichenko and Logistics and Sourcing Specialist of PC Electrozavod JSC Yury Krasnov

ZapSibNeftekhim is set to become Russia's largest modern petrochemical complex. It will use the most advanced technologies of hydrocarbons processing and logistics, allowing for a great reliability, safety and efficiency of this investment project. ZapSibNeftekhimi is a part of SIBUR Holding PJSC.

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.

We are proud to be a part of it as PMTT's power autotransformers 500/110 kV 250 MVA, installed on 500 kV ZapSib substation, are equipped with 500 and 110 kV Izolyator RIP bushings.

PRODUCTIVE MEETINGS

We are glad to see the interest, shown by partners of Izolyator to our company. A visit of SVEL Group representatives was no exception: Denis Guryev, Chief Designer 500 kV and Head of Sales Dpt Elena Tishunova represented the company. Having discussed the pace of common projects, including coopeation with Rosenergoatom Concern, we proudly demonstrated our unique technologies of production and testing of high-voltage bushings with solid insulation to our guests.

At the assembly shop of Izolyator, L-R: Director of Purchasing and Logistics of Zaporozhtransformator Andrey Maximenko, Alexander Slavinsky, Alexander Shornikov and Maxim Zagrebin

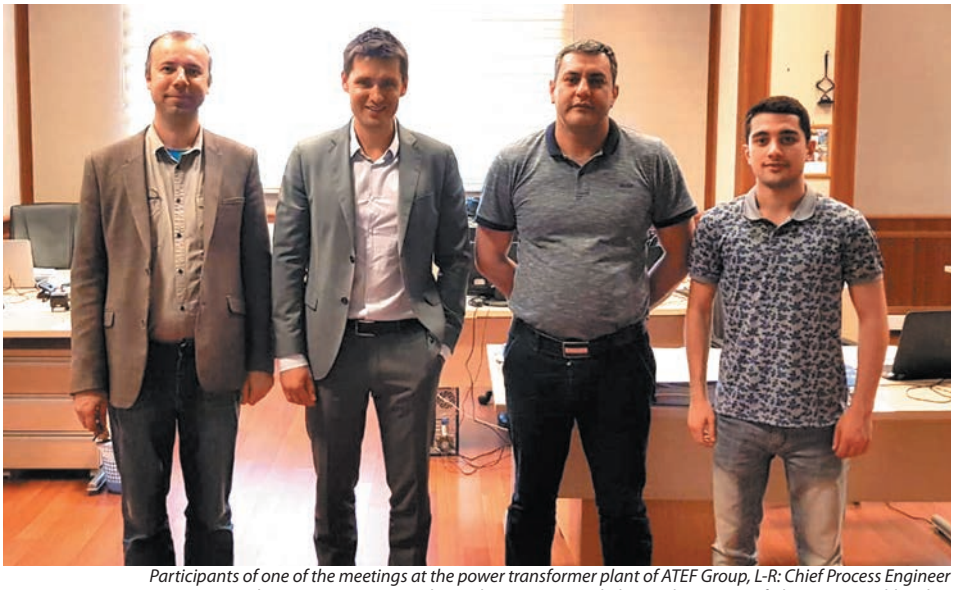
There was a plant tour as well during the visit of Director of Purchasing and Logistics of Zaporozhtranformator Andrey Maximenko. During the meeting, we were able to discuss steps of further development of our long-term cooperation in delivery of Izolyator high-voltage bushings.

In June, representatives of the Russian power equipment manufacturer production complex Electrozavod JSC visited Izolyator plant. Electrozavod was represented by Deputy Directo General Affairs Sergey Melnichenko and Logistics and Sourcing Specialist Yury Krasnov. At the meeting, we discussed completing transformer and reactor eqiupment with Izolyator high-voltage bushings and progress of common projects in 2018.

By the way, we accept invitations to meet from partners with pleasure. In June, we had meetings at the power transformer plant of ATEF Group in Baku, Azerbaijan with Deputy Chairman Nikolay Molodetsky, Sales Director Farid Aliev, Chief Designer Redzhab Taisy, Chief Process Engineer Pavel Butyaev, Lead Chemist Engineer Subhan Seferov, Secretary of Chairman Firuddin Aliev participating.

At those meetings, we talked about current and future orders for Izolyator high-voltage bushings for competing power transformers made by ATEF and track record of RIP bushings operation on power facilities.

We appreciate our partners for an efecient cooperation and hope that the third quarter of 2018 will even more productive. We, on our side, will render our partners an all-round support in every stage of our cooperation.



Participants of one of the meetings at the power transformer plant of ATEF Group, L-R: Chief Process Engineer Pavel Butyaev, Maxim Zagrebin, Sales Director Farid Aliev and Secretary of Chairman Firuddin Aliev

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.

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.

Production Company «Electrozavod» JSC is specialized in development and manufacture of transformer and reactor equipment for already over 80 years for power industry, heavy industry and transport. Electrozavod equipment enjoys a stable demand.

AS WITH THE BEST FOOTBALL TEAMS, WE ARE UNITED BY THE PASSION FOR OUR WORK

DMITRY ABBAKUMOV
Deputy Commercial Director

IZOLYATOR SPECIALISTS GIVE UTMOST CARE TO PURCHASING ACTIVITIES AS IT GREATLY INFLUENCES THE QUALITY AND RELIABILITY OF OUR PRODUCTS IN THE END.

During our purchasing activities, Izolyator specialists spend all of time in talks with suppliers of components and materials to ensure procurement for an uninterruptible production process of high-voltage bushings.

CONCISE AND CLEAR GOAL

We clarify capabilities of our potential supplier, have preliminary talks on contract signing, sign the agreements and delivery contracts. Besides, we need to agree on how the supply process is to be realized and the order is to be fulfilled. This list of tasks is far from complete as various issues may arise during talks, yet we have to take care of them anyway. Our work starts before the actual negotiation. First, we should define the purpose of it. Talks are bargaining, hence it is important to define the range of goals - minimum acceptable and maximum results. The goal must be concisely formulated in written, have quantity and quality indicators of measurements, realistic from internal company resources and of supplier capabilities view point, agreed with goals of other processes within our company.

It is necessary to study all options: volumes, cost of unit and batch, payment terms, quantity of shipments, delivery, norms of packing, warranty and service, validity terms of contract and other important to us parameters. Complete components arrangement gives the total cost of the purchase.

FINE-TUNED OPERATING PRINCIPLE

Discussing current electrical equipment market trends and strategies of successful development of an industrial company in modern conditions is among the factors that help us to always follow the trends.

For Izolyator staff members it is of special value to have an opportunity of personal meetings with partners. In April, we visited the presentation, given by Huntsman

Participants of business meeting in Moscow, L-R: Dmitry Abbakumov, President of Huntsman Corporation Peter Huntsman and Regional Sales Manager at Huntsman (Netherlands) BV Konstantin Ilyichevsky

HUNTSMAN

The companies that enter Huntsman Corporation produce chemical components for consumers from a wide variety of sectors of economy. Huntsman Corporation supplies epoxy compound components, which are used for making of the solid internal RIP insulation of high-voltage bushings, to Izolyator plant.

MPK Plant Ltd in Kaluga makes cast brass items. It delivers contact terminals to Izolyator plant for high-voltage bushings.

Corporation President Peter Huntsman in Moscow. The event was dedicated to the key macroeconomic trends and challenges facing chemical industry as well as most recent development and product proposition of Huntsman Corporation.

After the presentation, we had a business meeting with Peter Huntsman, where Konstantin Ilyichevsky, Regional Sales Manager at Huntsman (Netherlands) BV also participated. At the meeting, we discussed the progress of Huntsman chemical components supplies to Izolyator plant and cooperation prospects development.

In June, representatives of MPK plant management visited our plant: Deputy General Director Vitaly Kormyshenko, Marketing Director Nikita Olkhovsky and Chief Process Engineer Andrey Stavrov.

MPK plant management representatives at the museum of Izolyator, L-R: Dmitry Abbakumov, Marketing Director at MPK plant Nikita Olkhovsky, Deputy General Director at MPK plant Vitaly Kormyshenko, Chief Process Engineer at MPK plant Andrey Stavrov and Vladimir Romanov

At the talks, we specified product range and volume of MPK plant's deliveries, also discussing technical and commercial aspects of practical cooperation between our companies, formulating priorities in long-term cooperation development.

Representatives of Prima-Center also made a productive visit to our plant. The company was represented by Commercial Director Natalia Mukhina and Lead Specialist Oleg Lukashov. The key topic of the talks was requirements to materials and competing parts, used in production of high-voltage bushings at Izolyator plant, as well as potential of Prima-Center for delivery of products, meeting the technical requirements, in needed volumes.

We finished the second quarter's supplier meetings with the talks with Industrial Supply Alfa-Metal Ltd management. Izolyator plant received General Director Dmitry Trischenko, Director of Development Dmitry Borunov and Commercial Director Irina Borunova.

At the talks, we discussed technical requirements to parts for new high-voltage bushings, designed by our company. We also specified assortment, volumes and terms of future deliveries of materials, paying special attention to the prospects and strategy of further long-term cooperation development.

The sides highly appreciated the meeting results, with the visit marking a new stage of strengthening of development of the longstanding successful cooperation of the two companies.

We hope that the third quarter of 2018 will be marked by a productive and efficient worked with our partners.

Alfa-Metal IS Ltd management at the assembly shop of Izolyator plant, L-R: General Director at Alfa-Metal IS Ltd Dmitry Trischenko, Director of Development at Alfa-Metal IS Ltd Dmitry Borunov, Commercial Director at Alfa-Metal IS Ltd Irina Borunova and Dmitry Abbakumov.

Prima-Center is specialized in supply of non-ferrous roll stock: copper, bronze and aluminium profiles. The company is a distributor of Russian metallurgical non-ferrous product manufacturers.

Alfa-Metal is a sustainable and dynamically developing company, specialized in aluminium semi products distribution, and one of the largest Russian aliminium products traders. A specially created Industrial supply Alfa-Metal Ltd company (Alfa-Metal IS Ltd) is engaged in manufacture of semis and blanks.

ALL FLAGS INVITED: INTERNATIONAL ENERGY FORUMS

Opening of the VI International Energy Forum in Saint-Petersburg

THE MAIN ENERGY FORUM

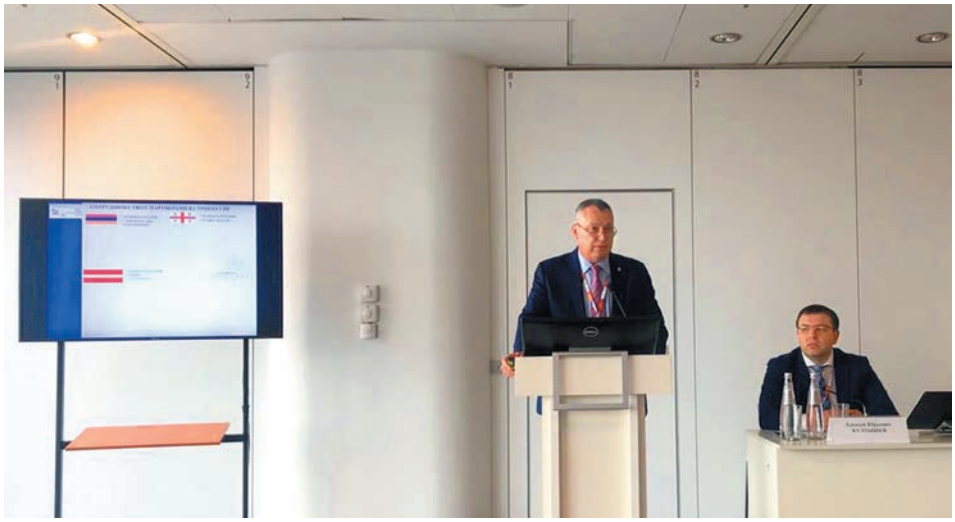
Izolyator participated in the VI Russian International Energy Forum in Saint-Petersburg.

This year RIEF attracted 200 exponents from 21 region of Russia and 12 countries of the world (USA, Germany, Turkey, Finland, Poland, Czech Republic, China, the Netherlands, Hungary, India, Kazakhstan and Belarus), over 2500 delegates and 8500 visitors.

As part of RIEF agenda, a formal opening of the 25th jubilee power and electrical equipment Power Industry and Power Equipment 2018 took place.

The RIEF congress included over 30 events: meetings, conferences, round-table to address the most important industry topics – from thermal energy and equipment modernization to energy efficiency, import substitution, digitalization and staff training. The vast business agenda of the forum offered participants opportunities to share experience, meet the first persons of the power industry face to face and key speakers for the power sector, investors and developers of the newest technologies, obtain expertise from leading experts.

On 25 April, a round-table "Energy machine building in Russia – position and role on the global market of industry equipment" took place. Alexander Slavinsky, EngD, Chairman of the Board of Directors at Izolyator and Head of Study committee D1 of the Russian National Committee of CIGRE worked at the round-table.



Alexander Slavinsky is speaking at the round-table "Energy machine building in Russia – position and role on the global market of industry equipment" at RIEF 2018

Alexander Slavinsky made a report "Key global trends in development of equipment and technologies in power industry within CIGRE activities and summary of product promotion in global markets", where he spoke about the main world's tendencies in power industry and summarized the experience of Izolyator and other Russian electrical engineering companies' products promotion in international power markets.

The round-table participants also discussed the newest equipment for the modern power industry, global trends in development of equipment and technology as well as practical technical regulation of the industry.

The vast and intense program of the forum, combined with the large exposition, allowed the RIEF participants to get an idea of the condition and prospects of the industry, innovations in production and recent advanced designs. The professional community formed positions and produced recommendations, the fulfilment of which would be a part of common effort to have a higher efficiency of the fuel and energy complex of Russia and its economy in general.

We appreciate the organizers of the Russian International Energy Forum for the invitation and execution of the event on the highest professional level.

RIEF Russian International Energy Forum

Russian International Energy Forum (RIEF) is a unique venue for organizing dialogue between manufacturers of equipment and suppliers of technologies for power industry with the largest companies of the sector. The Forum became a new stage in development of a leading Russian specialized exhibition Power Industry and Power Equipment.

XXVII INTERNATIONAL CONFERENCE OF TRAVEK ASSOCIATION

In June, Izolyator took part in the work of the XXVII International Scientific, technical and practical Conference "Power and distributive transformers. Reactors. Systems of diagnostics", which was held in Moscow.

The conference went with support from the Russian Academy of Sciences, the Academy of Electrotechnical Sciences of Russian Federation, the Ministry of Energy of Russian Federation, the Ministry of Industry and Trade of Russian Federation, Rosseti PJSC and Federal Grid Company of the Unified Energy System.

Pavel Kiryukhin at the rostrum of the XXVII International Conference of TRAVEK Association

Top management and technical specialists of consumers of high-voltage electrical equipment, representatives of designers and manufacturers of power equipment from Russia and foreign countries, leading scientists, research and design organizations representatives took part in the conference.

Izolyator was represented by Alexander Slavinsky, Doctor of Engineering, Chairman of the Board of Directors, Vice President of the International TRAVEK Association, Head of study committee D1 of the Russian National Committee of CIGRE and Pavel Kiryukhin, Deputy Chief Designer.

During the event, the participants shared their experience of transformer and reactor equipment operation, exchanged opinions on problems and prospects of its development, discussed issues of equipment testing, monitoring and diagnostics.

In the result of the conference, the participants approved the summary of reports, which reflects key achievements, areas of power equipment and systems development and recommendations to consumers and manufacturers of high-voltage electrical equipment.

Materials of the conference will be submitted to state structures, Rosseti, FGC UES and other organizations of Russian Federation as well as conference participants and TRAVEK Association members.

XXVII International Conference of TRAVEK Association

President of Academy of Electrical Sciences of Russian Federation Pavel Butyrin is making a report

Alexander Slavinsky and Victor Kovalev, President, International TRAVEK Association at the Panel of the XXVII International Conference of TRAVEK Association

TRAVEK

International Association on transformers, high voltage equipment, electrical ceramics and other spare parts and materials — TRAVEK — was established on 11 April 1991 in order to implement the business cooperation, contributing to marketing, manufacturing and technology development.

122ND ANNIVERSARY OF IZOLYATOR: AWARDING BEST STAFF MEMBERS

The special event to celebrate the 122nd anniversary of Izolyator plant

In June 2018, a special event to celebrate the 122nd Anniversary of Izolyator plant took place.

Chairman of the Board of Directors Alexander Slavinsky opened the celebration with a salutary address to staff members.

After the speech of General Director of Izolyator Sergey Moisseev, the awards ceremony of the plant's best staff members on the occasion of the 122nd birthday of the company began.

Technical Director Alexander Shornikov and Head of Legal Dpt Elena Zubakova received honorary title "Distinguished worker in the industry of the Moscow region". Lyudmila Kostyrya, the Governor's office's representative handed the awards to the nominees.

Alexander Slavinsky is addressing to the participants of Izolyator plant's 122nd birthday celebration

Sergey Moisseev is announcing the awards ceremony open

Forty two staff members received the highest corporate award award of Izolyator — Badge of merit "For the longstanding and conscientious labor" of various degrees who worked at the plant for 10, 15, 20, 25, 30 and 35 years.

Alexander Slavinsky and Sergey Moisseev heartily thanked all the awarded colleagues for their invaluable contribution to Izolyator development and wished them new achievements at work.

The teams and the most active sports enthusiasts of the corporate volleyball tournament, dedicated to the plant's birthday, also had an awarding.

The special event, dedicated to the 122nd birthday of the plant, became an important happening in the life of the close-knit team of Izolyator, which is rightly proud of its past and looks into the future with confidence!

Moments of the awards ceremony of the best staff members on the 122nd Anniversary of Izolyator plant

ALL FACETS OF CORPORATE LIFE

SERGEY MOISSEEV
General Director at Izolyator

FOR OUR COMPANY, HUMAN RESOURCES DEVELOPMENT IS A LONG-TERM OBJECTIVE, WHICH IS ACHIEVED BY CREATION OF A TALENT POOL TO ENSURE AN EFFICIENT REALIZATION OF YOUNG STAFF MEMBERS' POTENTIAL, TRAINING AND IN-SERVICE EDUCATION OF CURRENT EMPLOYEES. MOTIVATION FOR A HEALTHY LIFESTYLE WITH ACTIVE ENGAGEMENT IN SPORTS ACTIVITIES HAVE A SPECIAL FOCUS IN OUR COMPANY AS WELL AS AN ALL-TIME CARE THAT OUR COMPANY MANAGEMENT USES TO CREATE SAFE LABOR CONDITIONS FOR THE SAKE OF LIFE AND HEALTH PRESERVATION OF OUR COLLEAGUES.

ISO 9001:2015 ISO 14001:2015 OHSAS 18001

INTEGRATED MANAGEMENT SYSTEM IMPLEMENTED

In April 2018, an integrated system for quality, ecology, labor safety and health protection management was implemented at Izolyator by an order of the general director.

Izolyator received an audit of conformity of the Integrated Quality Management system of Izolyator company to the requirements of international standards.

The IMS audit was performed by the auditors of the German certification body TÜV Hessen in compliance with the TÜV PROFICERT procedures.

Participants of the audit of the Integrated Management System of Izolyator: TÜV Hessen auditors and staff members of the quality service of Izolyator

Deputy Head of the Public Labor Inspectorate – Deputy Chief State Labor Inspector of the Moscow region – Nelly Aizitulina is giving a training at Izolyator plant

TRAINING UNDER THE PLAN OF PUBLIC LABOR INSPECTORATE

Izolyator plant had a training of labor safety under the plant of the Public Labor Inspectorate.

Deputy Head of the Public Labor Inspectorate — Deputy Chief State Labor Inspector of the Moscow region – Nelly Aizitulina ran the exercise.

The training included a test of familiarity with the norms of Russia's labor protection legislation of Izolyator plant's management.

The Public Labor Inspectorate carries out state control over legal compliance with the Russian Federation's laws of labor and labor protection to protect the labor rights of citizens, including their right to safe working environment.

The Public Labor Inspectorate of the Moscow region is a local agency of the Federal Service for Labor and Employment.

EXAM ON POWER INDUSTRY AND ELECTRICAL ENGINEERING

Izolyator held an exam on power industry and electrical engineering as an activity within its corporate training program of staff in company management topics.

The exam was the final stage of education of managers, specialists and employees of the company in this training section.

The exam was made to check knowledge in basic physical concepts in electrical engineering, electrical complex of Russia and its difference from foreign power systems, etc.

Alexander Slavinsky, Chairman of the Board of Directors chaired the examination board, which also included:

- General Director Sergey Moisseev,
- R&D Director Konstantin Sipilkin,
- Chief Designer Yury Nikitin.

The examinees demonstrated solid and quite deep knowledge of the subject, earning praise and appreciation from the examination board.

Any examination paper is lucky - when you're well-prepared

Alexander Slavinsky, Chairman of the Board of Directors chaired the examination board

Examination board working

Confidence of own knowledge is key

From the Past to the Future: Plant Tour for the Coming Generation

The students of Lomonosov Moscow State University Gymnasium at the museum of Izolyator plant

PLANT TOUR FOR THE STUDENTS OF MSU GYMNASIUM

Izolyator plant received a visiting excursion for 10th year students of the Lomonosov Moscow State University Gymnasium.

The event went as initiative within the educational project of the MSU "Economy and space of knowledge". The tour's objective is to demonstrate the real sector of economy of the country, represented by one of Russia's leading electrical equipment OEMs.

Chairman of the Board of Directors at Izolyator Alexander Slavinsky and General Director Sergey Moisseev gave the plant tour to the students.

Alexander Slavinsky is giving an excursus to the plant's century-long history

Acquaintance with a modern enterprise and advanced technologies

The visitors familiarized themselves with the century-long history and modern achievements of Izolyator plant.

The students received an impression on Russia's advanced technologies in production and testing of modern high-voltage insulating equipment at the tour.

The tour went in the atmosphere of interest and active dialogue and served the purpose of personal enrichment and occupational guidance of the students.

"ALL TOGETHER" AT IZOLYATOR PLANT

Izolyator plant was receiving a visiting group of parents and children of the Union of multiple children families of Istra district "All together".

Sergey Moisseev, General Director at Izolyator welcomed the delegation and told about the key stages of development of the plant.

This year, Izolyator is turning 122 years since foundation. The modern stage of the company development began in 2007 with the launch of the new manufacturing facility in Pavlova Sloboda, Moscow region.

Victor Kiryukhin, Lead Technical Support Specialist at Izolyator gave a plant tour for the visitors, introducing them to the key stages of production and testing of high-voltage bushings.

The administration of Union of multiple children families of Istra district "All together" heartily thanked the team and management of Izolyator for their hospitality and informative meeting.

Participants of Izolyator plant tour for parents and children of Union of multiple children families of Istra district "All together"

In this age it especially important to check things with own hand

Victor Kiryukhin is exaplaining the purpose and operation of a high-voltage bushing

We remember

Laying flowers to the monument to the workers of the plant — participants in the Great Patriotic War — an old tradition at Izolyator plant

IN MEMORY OF PARTICIPANTS OF THE GREAT WAR

On 8 May 2018, Izolyator management and staff members held an annual flower laying ceremony to the monument on the plant's territory and remembered the plant workers and veterans of the Great Patriotic War with a moment of silence.

During the World War II Izolyator's production facilities were fully used for the needs of defense. Many plant workers volunteered to the front. The Moscow Council of Workers' Deputies awarded Izolyator staff with a certificate of merit for patriotism shown in people's volunteer corps and heroism in battles to defend Motherland.

By the ruling of the State Defense Committee dated 18 November 1942 the plant was given the objective to bring the product output to the levels of 1940. The staff took it as a battle-order — so, in 1944, Izolyator plant was recognized a winner in the All-Union socialist competition with the third place.

By 1945, the plant mastered industrial production of 60 new types of bushings including a specialized bushing for radio units and other defense purposes. The plant's entire product range was fully restored for mass production, for example, 154 and 220 kV oil-filled insulators that had been out of production since the first years of war were assembled.

Izolyator staff hold the memory of the deceased comrades. Their names are listed on the monument erected on the plant premises. On this day, we bow our heads to the memory of the fallen, and wholeheartedly thank every veteran living among us.

Moment of silence

PRACTICAL EXERCISE IN FIRE FIGHTING

Another practical exercise in fire fighting "Staff action on fire alarm" was held at Izolyator plant.

The exercise aims at:

- practicing actions of the mechanical shop personnel upon detection of fire,
- practicing response of the security service employees and duty staff to passing on the information about fire outbreak,
- evacuation drill of the staff and using fire extinguishers.

Boris Sobelman, Head of HSE at Izolyator ran the exercise. The Planet 101 firefighting crew took part in the exercise.

Boris Sobelman is giving a task on fire safety to the workers of the mechanical shop of Izolyator plant

Izolyator staff members are following every move on the training ground

During the exercise, the company staff acted as one and without delays, demonstrating a high degree of readiness to fire dangers.

Summarizing the drill results, B. Sobelman gave a short account of the actions of the staff members, marking the high organization and responsibility of Izolyator plant personnel, and thanked everyone for competent action.

We appreciate our partners — the private fire fighting crew Plant 101 — for their assistance in organization and execution of the exercise.

Izolyator staff members are exercising to use basic firefighting equipment

VOLLEYBALL TOURNAMENT: SHARING THE TRIUMPH

From April till June, the volleyball teams of Izolyator participated in the tournament, dedicated to the 122nd Anniversary of the company.

All the games were played at the sports facility of Izolyator plant.

Svetlana Georgievskaya, Head of IT dpt became an organizer and active participant of the tournament as well as captain of one of the teams and a member of the panel of judges.

According to the tournament bracket, 20 matches were played between 5 teams.

The final standings of the teams and consequently the prizes have distributed accordingly:

1 place and the cup of the tournament — Select Team,

2 place — Directorate Team,

3 place — Technologies Team.

Izolyator's General Director Sergey Moisseev was announced the best player of the tournament.

Winner of the volleyball tournament on the 122nd Anniversary of Izolyator — Select Team

Directorate Team — winners of the silver cup of the volleyball tournament

Technologies Team — bronze medallists of the volleyball cup

Applauses to the best player of the volleyball tournament Sergey Moisseev

A special recognition letter "for the will to win" was awarded to Commerce Team,

A special recognition letter "people's choice award" was awarded to Mechanical Team.

The most active supporters of the tournament were named Elena Posokh, Elena Zubakova and Valentina Khitrova

The tournament did not only give everyone bright and unforgettable experience, but also attracted new participants, which we take as the main result of that extraordinary corporate event.

We appreciate all the tournament organizers and the teams for a spectacular sports event, which demonstrated mastery of the game and offered a good example of team spirit and will.

Salute of Directorate and Mechanical Shop teams at the first game of the tournament

A spike from Alexander Slavinsky

Sergey Moisseev — the best player of the tournament — is atacking

Select team is blocking a shot of Technologies team

Select team in anticipation of victory!

SETTING THE STAGE FOR THE WORLD FOOTBALL CHAMPIONSHIP 2018: IZOLYATOR FUTSAL CUP

Prizes of the Open Izolyator 2018 Spring Futsal Tournament among company staff members

In April 2018, the final games of the open futsal tournament among Izolyator staff members were played.

The tournament is played in the new sports facility of Izolyator, which was opened early this year.

The final games of the tournament brought together:

- Third place — 2nd team of the mechanical shop and the team of the insulation making shop,

1 team of mechanical shop is the first in the final standing of the Open Spring Futsal Cup Izolyator 2018 among Izolyator staff members

Select team of the plant is a silver medalist

Team of insulation making shop reached the third step of the medals stand

2 team of mechanical shop took the fourth place in the tournament

- First place — select team of the plant and the 1st team of the mechanical shop.

The 1st team of the mechanical shop won the cup with a score 9:8 in a tense match.

The standings of the Izolyator 2018 Spring Futsal Cup:

- 1 place — 1st team of the mechanical shop
- 2nd place — select team
- 3rd place — team of the insulation making shop
- 4th place — 2nd team of the mechanical shop

Our congratulations to the winner and thanks to all participants for demonstrated mastery and will to win!

Game of 1 team of mechanical shop and Select team

2 Team of mechanical shop is playing a combination

Team of insulation making shop is atacking

Mikhail Sheremetyev is keeping goal of 1 team of Mechanical shop

All the teams participating in the final games of the Izolyator 2018 Spring Futsal Cup

WE APPRECIATE ALL OUR PARTNERS

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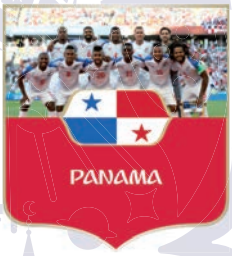
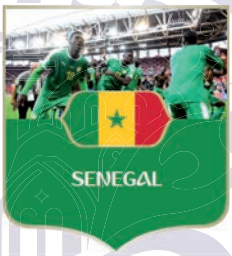
FIFA WORLD CUP
RUSSIA 2018

THANK YOU FOR THE GREAT FOOTBALL FESTIVAL!

32 world-class teams! 64 spectacular games!





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