

IZOLYATOR

CENTURIES-OLD TRADITIONS – STATE-OF-THE-ART TECHNOLOGIES

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120 years OF PRICELESS EXPERIENCE IN POWER INDUSTRY

FOR MORE THAN A CENTURY IZOLYATOR HAS DEVELOPED AND MADE BUSHINGS USING THE MOST ADVANCED TECHNOLOGIES THAT HELP TO ENSURE UNINTER-RUPTIBLE POWER SUPPLY TO THE WORLD.



DR. ALEXANDER SLAVINSKY

Chairman of the Board of Directors at Izolyator
Vice-President AES RF
Vice-President TRAVEK Association

“WE CREATE FOUNDATION FOR STABLE POWER SUPPLY OF MANKIND”

Traditionally at the end of the first quarter 2016, we finalize 2015th results, remember wins and make plans for the future. In 2016 Izolyator celebrates 120th anniversary. We have walked a long way of un-stopping development, and creation at the forefront of scientific and technical progress, participation in the most ambitious power projects and programs. The uniqueness of our company is in the fact that the whole history of it is inseparably associated with origin and development of high-voltage bushings into a self-sufficient sector in power equipment production in Russia.

IT IS VERY UNLIKELY TO FIND A BOOK THAT WOULD TEACH US AS MUCH AS THE ONE THAT WE WROTE OURSELVES...

Friedrich Nietzsche



Sole bushings manufacturer in range in Russia and CIS

12-1200 kV

570 000

bushings made – an equivalent of 90 000 transformers with 80 MVA capacity

500 000 OIP

70 000 RIP

34 000

bushings installed in FSK UES facilities

Exports to more than

30

countries worldwide

20 000

bushings with fault free operation exceeding 35 years

120 YEARS OF PRICELESS EXPERIENCE IN POWER INDUSTRY

Alexander Slavinsky, Chairman of the Board of Directors at Izolyator tells how a century long experience has turned into a solid fundament for Izolyator's development today – a XXI century enterprise



570 000
500 000 OIP | 70 000 RIP

bushings made - an equivalent
of 90 000 transformers with 80 MVA capacity

Izolyator plant was founded on 6 June 1896 in Vsehsviatskoe village on the outskirts of Moscow. In 1905, the products that it made won a gold medal at Brussels 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 line insulator designs and, in 1927, the plant grasped the production technology of suspended insulator. In 1919-1929, the production output grew almost 100 times.

The date of the first lead-in insulator introduction is known for certain. On 1 Febru-

On 1 February 1932, three 115 kV bushings with oil-barrier insulation for transformer application were assembled and successfully tested at Izolyator.

A 120 YEAR WAY

Izolyator plant's history is a true book of success

1896

Izolyator was founded in 1896 in the former Vsehsviatskoe village on the outskirts of the then Moscow. In the early XX century, the plant produced low-voltage porcelain insulators for telegraph and telephone lines and railway among other goods.

1920s

In 1920, the State Commission on Electrification of Russia (GOELRO) devised a plan of the national economy major reconstruction supported by total electrification. Izolyator plant urgently geared up for production of porcelain insulators for high-voltage transmission lines. The first designs of line insulators are worked out, the plant started production of suspension insulators.

1930s

In the fall of 1931, a 115 kV oil-filled insulator was first made. Initially, domestic high-voltage bushings were not leak proof. They used oil-barrier internal insulation. In 1932, the plant started mass production of 110 kV bushings of that design.



1970s

A new 1400 square meter facility was built with a large high-voltage hall (high-voltage laboratory) that allowed running full-scale electric tests of bushings for high voltage classes.



1980s

The plant exported products to 26 countries in the world. At the same time, designers continued works to develop leak-tight construction for ultra-high voltage — 1150 kV. 42 units of equipment for 1150 kV autotransformers and shunt reactors were supplied to the operator of Ekibastuz-Kokchetav-Kustanay power line.

ary 1932, three 115 kV transformer bushings with oil-barrier insulation were assembled and successfully tested. Those bushings were fully made of domestic materials and components signifying the beginning of 115 kV bushings mass production for Moscow Electrical Engineering plant.

The power industry of the country rapidly developed, voltages grew higher — and the plant developed accordingly.

In 1964, Alexander Barkov took the lead of the plant. Over the next 25 years, he accomplished three major renovations of the plant expanding it greatly. During that time the plant designed high-voltage bushings of various applications and voltage classes and made a transition to leak tight bushing designs production together with SF6 insulated bushings introduction. In 1992, the plant became a public listed company and named after Alexander Barkov. His bust was installed in the new building of the plant.

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 NIPT, 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.

Those milestones are only a small part of achievements that mark the bright history of the company. In 1995, I was honored to take the lead of Izolyator and, in 2007, a large-scale project of the plant relocation to Istra district of Moscow region was successfully accomplished.

LARGE PRODUCTION FACILITY

Today, Izolyator is a modern advanced technology enterprise, fitted-out with

The plant has always done a serious design development research: 10% of annual turnover is reserved for R&D needs and new materials procurement.

Exports to more than
30
countries worldwide

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.

Izolyator's customers who operate in generation, transmission and distribution of electric power know the plant's world-class products well.

Over the years, Izolyator won trust from consumers in Russia and abroad. It provides real prospects for business development on domestic and export markets.

After 2007, the plant consistently installs new equipment and replaces obsolete pieces achieving much better production automation. All technical novelties are dictated by the demands of challenging tasks and customers, requirements of the present day.

The plant has always done a serious design development research: 10% of annual

turnover is reserved for the R&D needs and new materials procurement.

Izolyator increased high-voltage bushings range at all times: by introducing revolutionary products and upgrading existing designs.

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.

Mass produced RIP-insulated high-voltage bushings are highly reliable and have a long operation life. They perfectly meet consumers' technical, operational and ecological requirements.

Izolyator adheres to the policy of gradual transition of all products in its range to RIP technology as the most advanced and prospective for bushings of all voltage classes. Presently, all bushings up to 800 kV voltage class are produced with insulation of the type. Right now, Izolyator possesses unique equipment allowing for mass production of RIP bushings of 1150 kV AC and 1000 kV DC voltage classes.

Thanks to an active and consistent technical policy of Izolyator, Russia has the largest operational experience of high-voltage bushings with RIP technology of various applications.

FOCUS ON DEVELOPMENT

Market expansion inside and outside the country is one of the drivers for a modern enterprise. 80% of Izolyator products are sold in Russia and CIS, 20% are exported.

In 2015, Izolyator became the first in the world to supply RIP-insulated bushings to Power Grid Corporation of India Limited. The Indian market is attractive for Russian power OEMs as the country is very similar to Russia in terms of power grid outstretch and scale. Just as immense seem cooperation prospects. A strong interest for Russian manufacturers presents the market of Vietnam where Izolyator is promoting its products. The plant is prospecting a multi-faceted

As of today, Izolyator has produced more than 70 000 HV RIP bushings.

SOLE bushings manufacturer
in range in Russia and CIS
12-1200 kV

cooperation with many countries of Asia Pacific region, Africa, Latin America and Middle East. The product itself defines the most efficient promotion strategy to the new markets — via partnerships with transformer plants — as the high-voltage bushing is a part of the transformer. Today, Izolyator is an official supplier to the leading global power OEMs: Siemens, Alstom, Crompton Greaves, Zaporozhtransformator.

Direct current is an important part in the technical policy of the company. In 2007 — 2010 only, Izolyator produced and tested more than 50 DC bushings of various applications for voltage classes of ± 150 to ± 820 kV and 1800 — 5400 A currents. All bushings are designed and made with the hard internal RIP insulation and external polymer insulation. Yet another important incentive within R&D activities is introduction of new materials with the purpose of increasing reliability and bringing down production costs, (the share of materials reaches 60-70% in the cost). For instance, non-woven polymer material is considered as a possible replacement for crepe paper as the main bushing insulation. It would help to increase resistance to humidity in severe climatic conditions and improve the production cycle.

Izolyator has received a unique and successful experience in the 120 years of its history — in design, production and operation of high-voltage bushings of various applications and voltage classes. We are open to share it in cooperation with our partners for the sake of achieving combined success and power industry development on the planet.

1940s

Many workers and engineers were mobilized to war. Those who stayed in Moscow continued production of power equipment and simultaneously launched production of shell cases.

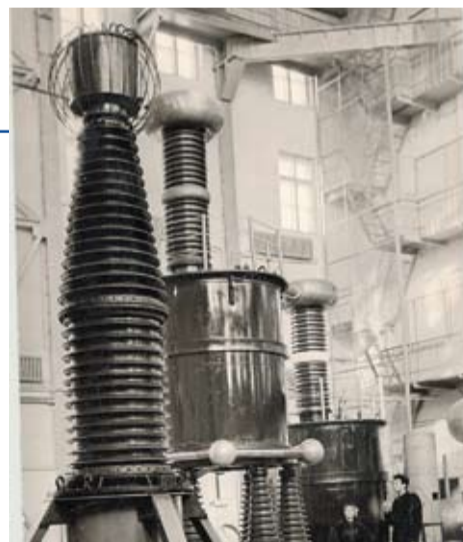


1950s

A special design bureau is set up at the plant with the purpose of creating bushings for higher voltage classes. Designers introduced condenser-type oil-in-paper insulation. Bushings for 110 — 500 kV voltage classes were created with that insulation. The plant launched a unique tunnel furnace for baking porcelain knobs.

1990s

The plant produces oil-filled bushings for transformers, reactors, oil switches, line bushings for voltage classes 35 — 1150 kV, composite SF6-oil bushings for ± 400 and 750 kV switchgears and SF6-insulated bushings for 110, 220, 330 and 500 kV classes.



1960s

A leak-tight bushing is designed. In connection with the order for design and supply of bushings for the Aswan dam in Egypt, the plant put into operation an intermittent car-bottom furnace for baking large-size porcelain articles (up to 5 m tall). It enabled the plant not only to deliver under the contract but also to start mass production of oil-filled bushings of high voltage classes.



2000s

In 2002 — 2004, a unique and proprietary RIP insulation technology was developed for mass production. The team had to tackle a number of complex scientific and technical problems resulting in 10 patents on invention and utility models in regard to insulation core, bushings designs and resin impregnated paper core making machines.

WE THANK OUR PARTNERS FOR THE SUCCESS AND GROWTH PROSPECTS!

Ivan Panfilov, Commercial Director at Izolyator finalizes 2015, tells about strategies that enable the company to achieve targets and share plans and objectives for the coming years.



When working on the projects, both large-scale and local, in 2015, we followed our mission — to create foundation for sustainable power supply to the entire society and every individual in the world.

Today, we can confidently say that our achievements in 2015 have only been possible thanks to our partners from power generation, transmission and distribution and high-voltage transformer industry. Izolyator team would like to say how much we appreciate your cooperation. We continue to work hard to prove your trust and timely fulfill our obligations in manufacture of quality high-voltage bushings and technical service. The company with its 120 years of experience in production and promotion of high-voltage bushings on the markets of

Russia and CIS countries is a recognized major RIP-insulated bushings manufacturer in the world and the most experienced and progressive designer of this product. Based on the facts, we set for ourselves a target of entering a meaningful dialogue with our partners worldwide sharing advantages of RIP technology operation and service.

Having spoken to all major global power market players, especially with the state

RIP insulation advantages are reliability, safety, technological effectiveness, durability, ease of operation and absence of necessity of service

Our main professional objective is success of our partners

owned transmission and distribution corporations, we witnessed that Russia remains the only country in the world where RIP-insulated high-voltage bushings already are a basic product used at the generation and power infrastructure facilities.

Thanks to the well-coordinated work of Izolyator team with such majors as Rosseti JSC and FSK UES JSC we were able to accumulate a unique operational experience of HV bushings with hard RIP insulation mass use. As of today, Russia is the largest country in the world where RIP-insulated HV bushings up to 500 kV have successfully been operating on power lines for over 15 years. Russian makers of power transformers have the best experience of design, production, installation and operation of transformers with high-voltage bushings with hard international insulation.

In the course of 2015 our sales team actively shared accumulated knowledge with partners from European Union and BRICS countries. I would like to express gratitude for FGC UES JSC for the support and facilitation in establishing contacts with international power companies, meetings organization and offering reference with Izolyator-made RIP-insulated bushings operation statistics to illustrate their reliability. Our special thanks for FGC UES JSC for the initiative to invite Izolyator as partner to CIGRE and offer Alexander Slavinsky to chair the Subcommittee D1 "Materials and development of new testing methods and means of diagnostics" of the Russian National CIGRE Committee.

We are confident to prove our colleagues' trust and make a contribution to development and safety of the global power industry providing expertise in the field of RIP-insulated high-voltage bushings manufacture and operation as the most advanced present day technology. Even though oil-in-paper bushings are still widely spread across the countries of Western Europe and Asia, their time is spent as our experience in Russia shows that the hard insulation is more reliable and safe.

The year will be remembered by a number of successful commercial activities in foreign markets for Izolyator. One of the key achievements is realization of a joint project with Power Grid Corporation of India Limited (PowerGrid) in 2015. Relations started with Izolyator winning in the tender for supply of 550, 220 and 110 kV RIP-insulated bushings completing the Grompton Greaves (CG) transformer for PowerGrid. Our products were installed on two 400 kV Bamnauli substation transformers of Delhi Transco Limited in Delhi. The second suc-

cess came with the winning of the tender for a direct new generation bushings supply to PowerGrid. The customer representatives were actively participating in all tests of the bushings during the year and audited Izolyator plant. Our specialists gave a series of seminars for the technical staff of PowerGrid and CG to familiarize the Indian colleagues with the technical features and designs of Izolyator products. In 2016, we will keep developing a productive dialogue with the Indian partners, share experience in operation and maintenance of high-voltage bushings.

Based on the instructions of Dmitry Medvedev, the Prime Minister of Russian Federation to develop international activities of industrial enterprises and their integration into the global markets, and inspired by our Indian projects success, we continued to develop our relations with Vietnamese partners. These are Vietnam Electricity EVN is the largest power grid company in the world, which is structurally related to the Ministry of Industry and Trade of Vietnam, and Dong Anh Electrical Equipment JSC, a major transformer OEM. We were pleased to find an illustrative example to showcase reliability of our products at HoaBinh HPP where Izolyator bushings have been operating for 25 years. Thus, thanks for the quality tested by time HoaBinh HPP chose 220 kV bushings of Izolyator brand for replacement of the obsolete pieces on transformers. The bushings will be made and delivered for installation at the power plant in the first half of 2016.

Less than 0.1%
 in 25 years
 average failure rate
 of Izolyator bushings
 OPERATED BY FGC UES

It is necessary to mention results of a large work done with our European partners. We set several targets that came down to Izolyator brand recognition promotion in Europe. This work is important for starting relations with new companies, developing existing partnerships and export share increase as instructed by Vladimir Putin, the President of Russian Federation. So, in European direction we can name such companies as Elia, Terna, Enel who received our seminars on RIP insulation technology and entered agreements for Izolyator

products delivery to the countries of European Union. For instance, Izolyator has completed two pilot projects for the power grid Elia and was selected the first in Belgian transmission network history supplier of high-voltage RIP bushings. In 2015, Elia announced its intention to use exclusively high-voltage bushings with hard insulation and selected Izolyator as a supplier of the first lot for bushings replacement on Crompton Greaves transformers. So we

can say it is a start of RIP technology development and application in the countries of Western Europe.

YEARLY PLAN

Izolyator’s key priority for 2016 and coming years remains expansion on European and Asian markets.

In 2016, following the strategic plan Izolyator will actively develop its partnerships with major generation and grid companies

and transformer OEMs of Europe and Asia (India, Vietnam). Izolyator team will also support our existing partnerships opening new directions of cooperation across the globe. We ever strive to be a global leader in development, manufacture and implementation of modern technologies in power industry!

There is a lot of work ahead of us but we are not afraid of difficult tasks. All Izolyator company achievements were only possible

due to intense cooperation of our highly qualified and tightly-welded team, motivation of each person for reaching the common goal. This is how the plant has worked for 120 years. This is how we intend to carry on — by integrating a century long experience into the modern reality combined with innovative technologies. We thank again all our clients and partners for support and openness to a productive dialogue and power industry experience sharing.

WE THANK ALL OUR PARTNERS!





OLEG BAKULIN

Director on Partner Relations
at Izolyator

In 2015, Izolyator had numerous business events for partners. For example, within our cooperation framework with Rosenergoatom Concern Oleg Prorokov, Chief Process Engineer at the Electric Power Division of the State Corporation Rosatom visited our plant. He witnessed the high level of organization at the plant and we used the moment to discuss modernization plans for Izolyator high-voltage bushings operated at the concern's facilities.

We developed our relations with RusHydro JSC. In 2015, Izolyator received an opportunity to bid in the tenders for bushings procurement. We successfully developed relations with interregional distribution grid companies and contractor companies.

In the first quarter of 2016, we had a series of meetings with consumers of our products in Russia outlining plans of modernization of existing equipment and new equipment deliveries. We continued shipping under the contracts of 2015 to grid and generation companies and under the contracts of 2016.

We are facing a lot of work in 2016. We have signed contracts for delivery of bushings for the needs of Zagorskaya HEPSP, Volzhskaya HPP, Krasnoyarskaya HPP and Leningradskaya NPP. We will make up the replacement list of bushings under the modernization program of Rosenergoatom and give conclusions on the technical condition of the bushings in the reserve stock of NPPs.

We also planned to expedite certification activities and equipment qualification for 35 kV and 110 kV RIP-insulated bushings.

In 2016, we intend to develop and maintain direct contacts with consumers and meet product delivery schedules. We will continue with the training programs and provide information support to the customers, and include a larger share of practical exercises in the seminars programs.

Sitting of Electrical Engineering Council Of Rosenergoatom



Pavel Kiryukhin reporting at the Sitting of the Electrical Engineering Council at Rosenergoatom

In October 2015, Izolyator took part in the annual sitting of the Electrical Engineering Council of Rosenergoatom JSC on power equipment reliability issues in Moscow region. Representatives of Rosenergoatom's branches — nuclear power plants, All-Russian Research Institute for Nuclear Power Plants Operation, All-Russian Electrical Engineering Institute named after V. I. Lenin, federal grid company FSK UES, Research Institute of

Scientific Instruments, Power Machines company, Scientific and technical center of FSK UES, Togliatti Transformer company, Moscow Power Engineering Institute, Service Center of Zaporozhtransformer and a number of other enterprises and organizations took part in the Council's work.

Izolyator's delegates were:

- Alexander Slavinsky, Chairman of the Board of Directors;
- Oleg Bakulin, Director on Partner Relations;
- Alexander Savinov, Director on Strategic Sales;
- Pavel Kiryukhin, Deputy Chief Designer.

Pavel Kiryukhin made a report on "High-voltage bushings technical condition evaluation as a criterion of a higher reliability"

We would like to thank Rosenergoatom JSC for the invitation and the high level of the Electrical Engineering Council's work organization!



ROSENERGOATOM

Rosenergoatom Concern JSC is one of the largest power generation companies in Russia, and Russia's only to function as a nuclear plant operator. Rosenergoatom JSC has integrated active nuclear power plants, project management of nuclear plants under construction, facilities construction management, Science and Engineering Center, a science research center for NPP emergency response activities, a project design branch, and a technology branch company. The core businesses of Rosenergoatom are generation of electrical and thermal energy by its nuclear plants and their operational management as well as storage of nuclear and radioactive materials and waste management through procedures legally regulated in the Russian Federation. The concern is represented in the People's Republic of China.

Meeting at Rosenergoatom Concern

Alexander Slavinsky, Chairman of the Board of Directors and Oleg Bakulin, Director on Partner Relations at Izolyator visited Rosenergoatom Concern in Moscow. Alexey Zhukov, Deputy General Director — Director NPP Operations welcomed the guests.

The sides talked about Izolyator's capabilities to deliver products for OIP bushings replacement programs of Rosenergoatom

Concern and creation of reserve stocks with RIP bushings. Alexander Slavinsky confirmed that Izolyator's innovative capacity and production potential allows to meet the programs' objectives of the customer.

We wish to thank Rosenergoatom Concern JSC for their invitation and confidence in our products' quality!

Balakovskaya NPP. Photo from Rosenergoatom official website



NIAEP Visit



Photo from official website of NIAEP JSC

Oleg Bakulin, Director on Partner Relations at Izolyator visited Atomenergoproekt engineering company in Nizhny Novgorod. The visitor introduced Izolyator corporate profile and product range as well as technological capabilities in designing quality and reliable insulation equipment applicable in nuclear power industry. The sides expressed mutual interest to develop cooperation.

We would like to thank NIAEP JSC for their invitation and a warm welcome.



Nizhny Novgorod engineering company "Atomenergoproekt" JSC (NIAEP JSC) is an affiliated company of State Corporation "Rosatom". NIAEP JSC renders engineering services in turnkey construction of NPPs performing surveys, design, construction management, equipment procurement, architectural supervision and participates in preparation of test operation and maintenance services.

Bushings Operation on Power Facilities of MRSK Center and Volga

Oleg Bakulin, Director on Partner Relations at Izolyator visited Interregional Distribution Grid Company of Center and Volga. Sergey Andrus, Chief Engineer, Deputy General Director at MRSK Center and Volga JSC received the visitor.

The partners discussed operational experience with Izolyator bushings and future shipments.

We would like to thank Rosseti JSC represented by MRSK Center and Volga for the invitation and a warm welcome!



Oleg Bakulin (L) and Sergey Andrus at MRSK Center and Volga



Public Joint Stock Company Interregional Distribution Grid Company of Center and Volga Region is a daughter company of Rosseti JSC — the main service provider of power transmission and connection to power networks in Vladimir, Ivanovo, Kaluga, Kirov, Nizhny Novgorod, Ryazan, Tula regions, as well as in the Republic of Mary El and the Republic of Udmurtia. MRSK Center and Volga service area of 408 thnd km has a population of 13 mln people with 23 thnd staff.

The company manages 267 thnd km of overhead and cable power lines, more than 1.5 thnd substations of 35 — 220 kV voltages, about 61 thnd transformer substations of 6 — 10/0.4 kV. Total substations capacity exceeds 41 thnd MVA.

Talks at MRSK South



Meeting at MRSK South (L-R): Alexey Koledin, Pavel Goncharov and Oleg Bakulin

Oleg Bakulin visited Interregional Distribution Grid Company of South in Roston-on-Don.

On MRSK South side the guest was received by:

- Pavel Goncharov, Chief Engineer — Deputy General Director on Technical Issues;
- Alexey Koledin, Deputy Chief Operation Engineer.



MRSK South JSC is an interregional distribution grid company (0.4-110 kV lines operator) that has utility connections to the unified national power grid with dominating share on the transportation and distribution market in four federal subjects: Rostov Region, Astrakhan Region, Volgograd Region and Republic of Kalmykia. MRSK South is a natural monopoly with tariffs regulated by the Federal Tariff Service and regional supervising bodies (Regional Energy Commission).

Cooperation Development with MRSK Ural



Oleg Bakulin at MRSK Ural

Oleg Bakulin visited the Inter-Regional Distribution Grid Company of Ural (MRSK Ural) in Ekaterinburg.

The partners summarized joint activities in 2015 and outlined purchasing plans for 2016. They confirmed long term cooperation strategy.

We would like to thank MRSK Ural JSC for the invitation and a warm welcome.



MRSK Ural JSC is a unified grid operator that transports electric energy via 0.4-220 kV power lines and connects consumers to networks in the Sverdlovsk, Perm and Chelyabinsk regions. MRSK's strategic goal is to consolidate municipal grids with grids to create a united network area in service area.

Business Contacts with EESK



Oleg Bakulin in Ekaterinburg Electric Grid Company

Oleg Bakulin visited Ekaterinburg Electric Grid Company. Ruslan Kolebin, Deputy Chief Maintenance Engineer welcomed Izolyator representative making his acquaintance.

Izolyator set a business contact by introducing its products, technological capabilities and production potential. The sides agreed to cooperate on a regular basis.

We appreciate EESK JSC for the invitation and a warm welcome.



Ekaterinburg Grid Company JSC (EESK JSC) renders power transmission services and connects consumers to grid in the city of Ekaterinburg. The operator manages power grid facilities maintenance including planned and emergency repairs, power system disturbances localization and elimination, modernization of power facilities and new construction – cable and overhead transmission lines, power distribution and transformer stations, 110-220 kV substations.

Attendees of the visiting class for MRSK specialists at the Test Center at Izolyator plant

MRSK Specialists Training

Izolyator plant hosted a visiting class with listeners of President's professional training program for engineering staff "Energy efficiency and power saving for power grid facilities design" on the topic "Modern energy efficient equipment for grid facilities, its application and operation".

The listeners of the program are specialists of MRSK Center JSC and MRSK Center and Volga JSC accompanied by a representative of the Institute of Distance Learning and Additional Education by the National Research University Moscow Power Engineering Institute.

MRSK specialists were introduced to design and modern manufacturing technologies of HV RIP bushings.



Interregional distribution grid companies (MRSK) are the daughter companies of Rosseti JSC, they form the base structure of power distribution in Russia.



**ALEXANDER SAVINOV**

Director on Strategic
Sales at Izolyator

2015 proved rich in events and achievements.

In 2015, Izolyator replaced broken 330 kV imported bushings at MES South and MES North West under the long term contract.

With the kind facilitation from FSK UES, Izolyator passed production audit of Power Grid Corporation of India Limited. The complete cycle of our production — from design development to technical service — was reconfirmed as complying with international standards for 10 years.

Another key achievement of the year is approval of Izolyator as partner to CIGRE — an acknowledgement of Izolyator's expert status in the field of high-voltage equipment operation.

The most important educational objective for us is professional training of FSK UES specialists. Jointly with FSK UES, we organized a Knowledge Day dedicated to RIP bushings and ran two excursions at Izolyator plant for MES Center specialists.

And, in March, Izolyator received visitors from Fortum JSC who expressed a high opinion of our products and technological level of the plant.

In 2016, we face the task to keep and develop our achievements. Our specialists will need to evaluate the wear degree of the bushings in operation at the branches of FSK UES, reserve stock and provide our recommendations.

We will be required to send timely shipments of quality products to our partners and run seminars for technical and commercial teams of generation and distribution companies.

Fortum JSC Representatives' Visit

Representatives of Fortum JSC visited Izolyator.

The guests were welcomed by:

- Alexander Slavinsky, Chairman of the Board of Directors,
- Alexander Savinov, Director on Strategic Sales.

The hosts arranged a plant tour familiarizing the visitors with design and modern production and testing technologies of HV RIP bushings.



Fortum JSC representatives on a tour of Izolyator plant



Fortum JSC is a leading producer of thermal and electric energy in Ural and West Siberia. The company structure includes eight TPPs, five of which are in Chelyabinsk Region, three – in Tyumen Region with Nyagan SDPP (town of Nyagan, Khanty-Mansiisk – Yugra Autonomous District).

Visit to Yuzhnouralskaya SDPP and Yuzhnouralskaya SDPP-2



Alexander Savinov at Yuzhnouralskaya SDPP

Alexander Savinov visited Yuzhnouralskaya SDPP and Yuzhnouralskaya SDPP-2 in Yuzhnouralsk.

He met technical specialists of SDPPs to inform them about new designs of Izolyator products and recent achievements. The sides discussed HV bushings operation features and plans for long term cooperation.

We would like to thank Inter RAO JSC represented by Yuzhnouralskaya SDPP and Yuzhnouralskaya SDPP-2 for the invitation and a warm welcome.



Yuzhnouralskaya SDPP, branch of TGK-3 JSC became one of the first Soviet thermal power plants with 1000 MW capacity. It is located 90 km away from Chelyabinsk and has installed capacity of 882 MW of electric power and 395 Gcal/h of thermal power. The power plant supplies electric power to the cities of the Southern Ural and thermal power to industry and public of Yuzhnouralsk city. The plant has been a branch of TGK-3 JSC since 1 April 2006.

Yuzhnouralskaya SDPP-2 is a thermal power plant, located in Yuzhnouralsk, Chelyabinsk region, Russia. The first generation unit was put in operation on 17 February 2014. The plant's installed electric capacity is 408 MW. The first generation unit operates a Siemens AG gas-turbine and steam-turbine plant and ZiO Podolsk waste heat recovery boiler allowing to reach one of the highest efficiency factors of 54.8% in industry.

Prospective Cooperation with Far-Eastern Generation Company

Alexander Slavinsky, Chairman of the Board of Directors and Konstantin Sipilkin, R&D Director at Izolyator visited Far-Eastern Generation Company in Khabarovsk

On DGC JSC side Izolyator visitors were received by Sergey Strelkov, Deputy Chief Engineer and a group of specialists.

The partners summarized cooperation in 2015 and discussed cooperation development plans for 2016.

We appreciate DGC JSC for invitation and a warm welcome!



Konstantin Sipilkin (L) and Alexander Slavinsky at Far-Eastern Generation Company



Far-Eastern (Dalnevostochnaya) Generation Company (DGC JSC) is a branch of Far-Eastern (Dalnevostochnaya) Energy Company JSC entering RAO Energy Systems of the East holding. Far-Eastern Generation Company produces thermal and electric power and ensures centralized heat supply to consumers in the service areas of the power plants from Yakutia (Sakha) to the Pacific Ocean. DGC JSC also delivers heat to end users. It is the fourth largest generation company in Russia by installed capacity and the largest market player in the Far East. The company's activities occupy 1/10 th of the Russian Federation territory. The installed electric capacity of DGC is 5 846.58 MW, thermal — 12585.1 Gcal/h. The company employs 15 560 people.

Conference Meeting At Far-Eastern Distribution Grid Company



Conference Meeting of Izolyator top managers and Dalnevostochnaya Distribution Grid Company

A meeting between Izolyator top managers and Far-Eastern Distribution Grid Company took place in Blagoveschensk.

The visitors Alexander Slavinsky, Chairman of the Board of Directors and Konstantin Sipilkin, R&D Director at Izolyator took part in the teleconference about application and operation of Izolyator HV bushings with RIP insulation.

The meeting was chaired by Alexander Mikhalev, Chief Engineer at DRSK JSC, Deputy General Director on Technical Issues.

Roman Gomzin, Lead Maintenance Specialist assumed secretarial function.

The meeting attendees also included managers and specialists of the executive office of DRSK JSC and branches representatives from: Amur power mains, Primorye power mains, Khabarovsk power mains, Jewish Autonomous District power mains, South Yakutia power mains.

The sides went into a deep discussion on operation experience and features, testing and diagnostics of Izolyator

35 kV and 110 kV HV RIP bushings. In the result, the meeting attendees agreed to expand information sharing and develop cooperation.

We wish to thank DRSK JSC for their invitation and a warm welcome!



Joint-Stock Company Far-Eastern (Dalnevostochnaya) Distribution Grid Company (DRSK JSC) is Far-Eastern (Dalnevostochnaya) Energy Company JSC subsidiary, which is part of RAO Energy Systems of the East JSC. DRSK JSC is an operator for in transmission and distribution of electric power across the territories between Yakutia and the Pacific Ocean. The company supplies power to large manufacturing, agricultural and transport enterprises as well as socially important facilities connecting new consumers to grid.

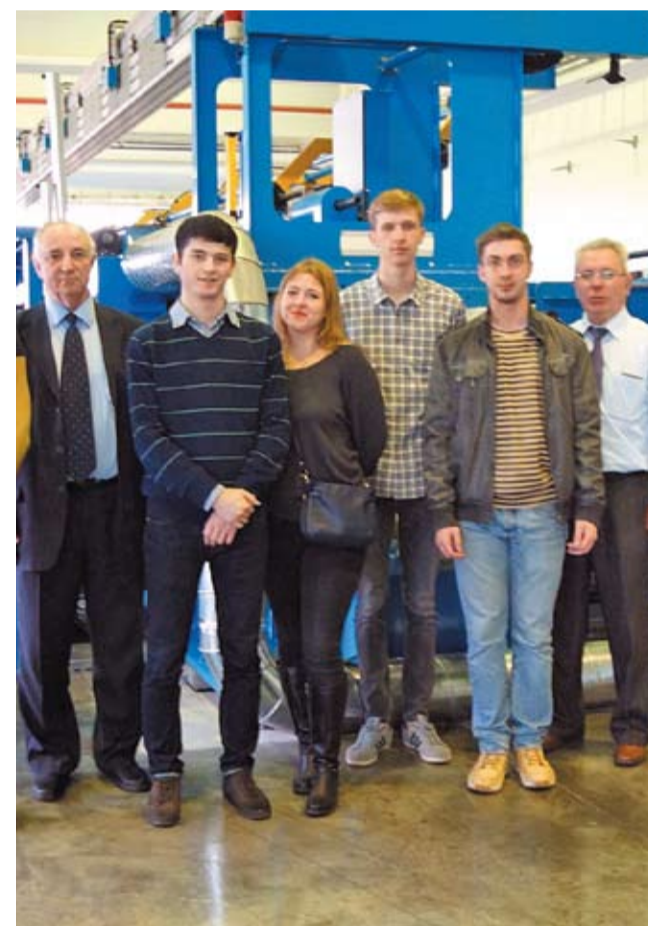
Practical Exercise with MEI Masters Students

Izolyator organized a practical exercise for a group of Masters Course students from Moscow Power Institute. The students were accompanied by Sergey Serebryannikov, the Head of the department of Physics and Electrical Engineering Materials and Components. The students took part in the practical exercise ran by Victor Kiryukhin, Head of Design Bureau at Izolyator. He told the future power industry specialists about modern designs, production and test technologies of high-voltage bushings with RIP insulation.



NIU Moscow Power Institute is one of the largest technical universities in electrical engineering, power energy, electronics and information technology in Russia. The university has prepared engineers and scientists for foreign countries since 1946. Today, students and post graduate students from 68 countries receive education in MEI. The university was awarded two State Orders and six orders of foreign states for the success in engineers and scientists professional training.

MEI Masters Course Students at Izolyator plant



Electric Power. Transmission and Distribution Magazine Representatives' Visit

In January, representatives of Electric Power. Transmission and Distribution Magazine visited Izolyator plant:

- Ekaterina Guseva, Chief Editor;
- Alexander Pavlov, Director on Strategic Projects;
- Lyudmila Yudina, Observer.

Alexander Slavinsky, Chairman of the Board of Directors, welcomed the guests at the plant and told them about its history, people, present day and development prospects.

During the plant tour, the visitors were able to see all production and testing stages of high-voltage bushings manufacture.

Ekaterina Guseva and Alexander Slavinsky discussed a number of issues on the current situation in national economy and electric engineering industry including import substitution, innovative development, standardization, new materials application and innovative technologies. The colleagues also shortlisted topics that would later be covered by the magazine.



Electric Power. Transmission and Distribution Magazine is a specialized edition for professionals of the national power grid aimed at development and promotion of the uniform technological policy. The editorial board of the magazine includes high-ranking representatives of the Federal Assembly of Russian Federation, the Ministry of Energy of Russian Federation, the Ministry of Industry and Trade of Russian Federation, Oil and gas corporation Rosneft, Rossiiskie Seti JSC, Inter RAO Group and other organizations and companies. The main topics that the edition covers are the national power grid strategic development, diagnostics and monitoring, technologies of operation and maintenance, innovations and technical development, etc. The Magazine takes part in more than 150 industry events and exhibitions sponsoring some of them. The Magazine also publishes the Russian language version of Transmission & Distribution World — Transmission & Distribution World. Russian Edition under the license.

At the Test Center at Izolyator plant, (L-R): Alexander Slavinsky, Ekaterina Guseva, Alexander Pavlov and Lyudmila Yudina



Meeting with FSK UES Representatives



In November, Izolyator hosted a meeting with representatives of the Federal Grid Company.

- Andrey Epifanov, Head of Substations Department,
- Roman Zagoskin, Chief Substation Dpt,

Meeting attendees at the Test Center of the plant (L-R): Alexander Slavinsky, Petr Mazur, Alexander Konovalov, Andrey Epifanov, Roman Zagoskin, Alexander Savinov and Konstantin Sipilkin

- Alexander Konovalov, Deputy Head of Substations Department,
- Petr Mazur, Chief Engineer, 1st Deputy General Director at MES North arrived at the plant for the meeting.

On Izolyator side Alexander Slavinsky, Chairman of the Board of Directors, Konstantin Sipilkin, R&D Director and Alexander Savinov, Director on Strategic Sales took part in the meeting.

During the meeting, the hosts arranged a plant tour introducing the guests to modern design and production technologies of RIP-insulated bushings. Dmitry Ivanov, Head of Test Center at Izolyator made a presentation of the equipment and test center capabilities.



Federal Grid Company is the operator and manager of Russia's unified electricity transmission grid system, including high voltage transmission lines, and holds the status of a natural monopoly. The Company's assets include more than 139,000 km of transmission lines and 924 substations with more than 332 GVA of 35–750 kV transformer capacity. Based on the length of transmission lines and installed transformer capacity, Federal Grid is the largest publicly traded electricity transmission company in the world. Federal Grid's business is to provide electricity transmission and technological connection services. It maintains and develops the grid system and supervises grid facilities and infrastructure in 77 Russian regions, covering a territory of 15.1 million square kilometres. Its customers are regional distribution companies, electricity suppliers and large industrial enterprises. The Company is a natural monopoly with 80.13% stake controlled by Russian Grids.

Receiving Expert from MES Ural



Alexander Savinov (L) and Lev Masasin

Lev Masasin, Deputy Chief of Substation Service at MES Ural visited Izolyator.

Alexander Savinov received a representative of FSK UES branch. Lev Masasin familiarized himself with the plant and modern technologies of production and testing of high-voltage bushings with RIP insulation.



Main Power Transmission Lines of Ural (MES Ural) are a branch of FSK UES JSC operating in Ural and Volga federal districts. The service area of the branch counts 7 federal subjects with a population of about 17 million people. MES Ural ensures fault free operation of over 16 thousand km of power lines and 106 substations with total installed transformer capacity of 41.9 GVA. The branch provides electric connection between the unified power grid of Ural and power grids of the central regions of Russia, West Siberia, Mid Volga and Kazakhstan.

Developing Cooperation with MES East

A representative group of Izolyator management visited MES East in Khabarovsk.

Alexander Slavinsky and Konstantin Sipilkin met top management of Main Power Transmission Lines of East. The partners finalized the 2015 cooperation results and outlined plans for 2016 at the meeting with Oleg Grinko, Chief Engineer and Roman Gudim, Chief Substations Dpt and his deputies. The parties agreed to enhance bilateral dialogue and develop cooperation.

Alexander Slavinsky at MES East



Main Power Transmission Lines of East (MES East) is a branch of FSK UES JSC, which operates on the territory of Far Eastern Federal District. There are 5 Federal Subjects in the service area of the branch. MES East ensures fault free operation of more than 15.5 thousand km of power lines and 89 220 – 500 kV substations with total capacity 14, 774 MVA. The branch links the power grid of East to the power network of Siberia enabling power export to China.



A Knowledge Day at FSK UES

Izolyator took part in a Knowledge Day with the topic “Operation and diagnostics of HV RIP bushings” organized by the Federal Grid Company of Unified Energy System as videoconference from the company HQ in Moscow.

Izolyator was represented by:

- Konstantin Sipilkin, R&D Director,
- Alexander Savinov, Director on Strategic Sales,
- Yury Nikitin, Chief Designer,
- Dmitry Mashinistov, Head of SVN-Service.

Andrey Tulakin, Head of Maintenance Substations at FSK UES welcomed Izolyator staff members at the corporate headquarter.

Video conference provided a great opportunity for all FSK UES branches’ representatives to take an active part in the Knowledge Day.

The main goal — additional professional training and development on RIP bushings design, operation features and diagnostics — was achieved. The specialists received comprehensive answers regarding discussed topics.

During the knowledge day, FSK UES representatives showed great interest noting a large practical use of such dialog. The technical management of FSK UES will consider possibility to use this format of training on a regular basis with Izolyator plant involvement.

We would like to thank FSK UES JSC for the invitation and a high level of event organization!



Knowledge Day participants at FSK UES

Excursions for MES Center Staff



Training excursion at Izolyator plant for MES Center specialists

Izolyator plant hosted training excursions for listeners of Staff Training Center Bely Rast, branch of Federal Grid Company of Unified Energy System. Listeners are operators from Main Power Lines of Center branches: Valdaiskoe, Volgo-Donskoe, Moskovskoe, Prikskoe and Chertnozerno.

Dmitry Ivanov, Head of Test Center at Izolyator conducted the excursions.

The listeners had a thorough introduction to designs and modern production and testing technologies of HV RIP bushings and receive detailed answers to all questions.

The excursions came as an important step in professional development of Federal Grid Company specialists.



Main Power Transmission Lines of Center (MES Center) is a branch of FSK UES JSC that operates on the territory of Central, North-Western and Southern Federal Districts. The service area of the branch includes 19 federal subjects with 40 million inhabitants.

MES Center ensures fault free operation of 27.69 thousand km power lines and 194 substations with total transformer capacity 108 500 MVA. The branch provides electric connection between the unified power grid of Center with power networks of the South, North-West, Volga and Ukraine.

D1 Subcommittee at RNC CIGRE Created

D1 Subcommittee at the Russian National Committee of CIGRE called "Materials and new test methods and means of diagnostics development" was created.

The Subcommittee is established on the basis of Izolyator plant by decision #12-23 of the RNC CIGRE technical committee of 11

February 2016. The agreement is valid for 5 years from 11 February 2016 till 10 February 2021.

Alexander Slavinsky elected the Subcommittee Chairman. Izolyator company received status of Leading scientific engineering partner to RNC CIGRE.

The Subcommittee acts based on the model provisions on RNC CIGRE subcommittees approved by the RNC CIGRE panel ruling #3/8 of 25 April 2014.

Izolyator plant is a leading scientific engineering partner to RNC CIGRE and a base enterprise for D1 Subcommittee



International Council on Large Electric Systems – CIGRE (Conseil International des Grands Réseaux Électriques – CIGRE) is the largest international non-profit Association for promoting collaboration with experts from all around the world by sharing knowledge and joining forces to improve electric power systems. Russian National Committee (RNC CIGRE) as a legal entity was established in 2003. At present the Committee counts over 60 collective and over 460 individual members. RNC CIGRE aims to represent the national interests at CIGRE and to assist in exchanging technical knowledge, experience and feedback in various fields of CIGRE activity for all its members.



Complete
range of services
DESIGN
manufacture
TESTING
Warranty and post
warranty service

The First Sitting of D1 RNC CIGRE Subcommittee

The Moscow branch of Izolyator company hosted the first sitting of D1 RNC CIGRE Subcommittee "Materials and new test methods and means of diagnostics development".

Dr. Alexander Slavinsky, Chairman of the Board of Directors at Izolyator chaired the sitting.

The following experts took part at the meeting:

- Victor Pososhkov, Chief Editor Energoexpert Magazine,

- Victor Turkot, P.h.D. Technical Director at Diatrans Ltd
- Leonid Daryan, P.h.D. Deputy Director on Analytics and Methodology at Technical Inspection of UES JSC,
- Vladimir Buzaev, P.h.D. Independent Expert,
- Alexander Panin, P.h.D. Head of Analytics and Material Testing VEI, Deputy Chairman of Standardization Committee Electric Insulating Materials (TK 038) Ros-

- standard of Russia,
- Igor Kulaga, Executive Secretary TK 038,
- Anatoly Cherkasov, P.h.D. Associate Professor, Physics and Electric Engineering Materials and Components, MEI,
- Olga Frolova, Dpty PR/GR Director at FGC UES JSC,
- Vladimir Ustinov, Dpty Quality Director at Izolyator.

The sitting resulted in decisions to take measures of D1 RNC CIGRE activity promo-

tion and popularization among Russia's scientific and professional circles and to create several actual research directions in the nearest future.

In the concluding remarks Alexander Slavinsky thanked the meeting participants for the first organizational kick-off meeting and expressed confidence in significance of the outstanding activity on subcommittee's topics.

The first sitting of D1 RNC CIGRE Subcommittee





The meeting was held in an atmosphere of free and open dialogue

ELECTRIC ENGINEERING INDUSTRY OF RUSSIA AND CIS



MAXIM ZAGREBIN

*Head of OEM Sales
at Izolyator*

Izolyator continues to create reliable, quality and competitive power equipment for the industry. We are also leading in manufacture of custom-made products of individual designs. Our capabilities allow completing such orders in tight deadlines. Combination of those factors helps us retain position of the main supplier of high-voltage bushings to the largest manufacturers of power equipment on the territory of the country.

The course for import substitution chosen by our Government in 2015 brought up interesting new projects and programs that address industrial modernization. Izolyator took part in many of those. One of the key events in 2015 was delivery of 500 kV bushings for the first high-voltage transformers made by Power Machines — Toshiba. High-voltage transformers Ltd for the needs of FSK UES JSC branch MES Ural.

In the last quarter of 2015 and the first quarter of 2016, we held many meetings and a series of already traditional seminars for technical and commercial staff of such partners as SVEL and Power Machines — Toshiba. High-voltage transformers. Our specialists spoke on the design features and operation of high-voltage bushings with RIP insulation, answered questions.

In 2016 we plan to bid in tenders for completing power equipment of the biggest OEMs with our products, organize practical seminars for technical specialists at Izolyator plant.

Power Machines – Toshiba. High-voltage transformers Ltd Visit



*Maxim Zagrebina at Power Machines – Toshiba.
High-voltage transformers Ltd plant*

Pavel Kiryukhin, Deputy Chief Designer and Maxim Zagrebina, Head of OEM Sales visited Power Machines — Toshiba. High-voltage transformers Ltd plant in Saint Petersburg.

After summarizing 2015 results, the sides continued with cooperation discussion and

outlining action plan for 2016.

Later that month, Izolyator trained technical specialists of Power Machines — Toshiba. High-voltage transformers Ltd

in Saint Petersburg.

The training on designs and operation of HV RIP bushings made by Izolyator was delivered by Yuri Nikitin, Chief Designer at Izolyator. Upon completion of the training program, Maxim Zagrebina presented the listeners with personal certificates.

Maxim Zagrebina visited the commercial department of Power Machines — Toshiba. High-voltage transformer to discuss plans for 2016. The partners also discussed projects in progress and evaluated results of completed projects, among which Power Machines — Toshiba-made transformers for the first time completed with 220 and 500 kV Izolyator bushings. Federal Grid Company of Unified Energy System was the ordering customer of the transformers.

The sides also discussed possibilities of joint project realization in transformer supply for the needs of thermal power plant in Vietnam, which is currently being built by Power Machines JSC.

As for the technical side, the meeting was also used to coordinate final designs of HV bushings custom-made for Power Machines — Toshiba. High-voltage transformers' special projects.

We would like to thank Power Machines — Toshiba. High-voltage transformers Ltd for cooperation!



Power Machines — Toshiba. High-voltage transformers Ltd is a joint venture of Power Machines JSC and Toshiba Corporation. The project started in September 2011 with signing of a JV setup agreement and construction of power transformers manufacturing facility in Russia. 50.01% share of the JV's capital is owned by Power Machines and 49.99% share belongs to Toshiba corporation. 110-750 kV power transformers and ATs of 25 MVA capacity including units in three-phase arrangement are the key product of the plant. The production capacity of the facility is more than 10 000 MVA annually. Headcount — about 350 staff members. The overall investment in the project amounted to 5.5 bln rubles.

Seminar for Power Machines – Toshiba. High-voltage transformers Ltd specialists



Power Machines – Toshiba. High-voltage transformers Ltd plant (photo from the website "made in Russia")



SVEL Group Cooperation



Maxim Zagrebin (L) and Danila Safin at SverdlovElectro Group

Maxim Zagrebin, Head of OEM Sales at Izolyator visited SverdlovElectro Group in Ekaterinburg.

Mr. Zagrebin made acquaintance with new employees of the sales department at SVEL Group. The partners discussed progress of current projects and business development plans.

Coming back a few weeks later, Izolyator representative was received by:

- Denis Pevtsov, Sales Director (first contact to have an introduction);
- Anastasia Kuznetsova, Head of Procurement;
- Danila Safin, Purchasing Specialist;
- Alexander Bersenev, Sales Manager;
- Mikhail Makhailin, Sales Manager.

The partners talked on cooperation including prospects both in Russia and the CIS countries. In particular, it was interesting to evaluate business opportunities of equipment delivery for the needs of Kurskaya NPP. Besides, SVEL Group design specialists were able to clarify some issues on RIP bushings design and operation. We would like to thank Group SVEL CJSC for the invitation and a warm welcome.



SverdlovElectro Group CJSC is a leading Russian OEM showing the best growth rates in electrical equipment manufacture development and modernization.

Visit To Uralelectrotyazhmash

Maxim Zagrebin, visited Energomash (Ekaterinburg) – Uralelectrotyazhmash JSC in Ekaterinburg.

The sides discussed cooperation progress and business development plans.

We would like to thank Energomash (Ekaterinburg) – Uralelectrotyazhmash JSC for the invitation and a warm welcome!



JSC «Energomash (Ekaterinburg) — Uralelectrotyazhmash» is a biggest Russian developer and producer of electric power equipment for generation, transmission, distribution and consumption of energy. High-voltage equipment, transformers and reactors, converter equipment and electric machines of UETM brand are world known and have a good reputation.

XXII TRAVEK Conference



Panel working at the XXII conference of the TRAVEK International Association

Izolyator took part in the XXII international scientific engineering and practical conference organized by the International Association TRAVEK "Power Industry and HV equipment development prospects. Switching devices, converter equipment, microprocessor control and protection systems" in Moscow.

Conference went with the support of:

- Russian Academy of Science,
- Academy of Electrical Engineering Sciences of Russian Federation,
- The Ministry of Energy of the Russian Federation,
- The Ministry of Industry and Trade of the Russian Federation,
- Rossiiskie seti JSC,
- FSK UES JSC.

Izolyator was represented at the conference by:

Alexander Slavinsky, Chairman of the Board of Directors at Izolyator, Vice-President at TRAVEK Association, Dr. Eng. Sc. who worked in the panel of the conference;

Yury Nikitin, Chief Designer at Izolyator who made a report "HV bushings technical condition evaluation as criterion of their increased reliability".

The conference attendants documented their observations of the current condition and development prospects of power equipment engineering industry to be delivered to the state organizations, Rossiiskie seti JSC, FSK UES JSC and other interested organizations.

We would like to thank the organizers and Electrozavod JSC for the high level of the event execution!



International Association of 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, to ensure product competitiveness in world markets.

Conference «Monitoring technical condition of the power facilities equipment»



Yury Nikitin speaking at the II scientific practical conference "Monitoring technical condition of the power facilities equipment"

Izolyator took part in the II scientific practical conference «Monitoring technical condition of the power facilities equipment» as part of the XVIII international specialized exhibition «Electrical networks of Russia 2016» agenda.

Organizers:

- UES technical inspection JSC
- Electricity. Transmission and Distribution Magazine
- Saint Petersburg Power Institute of Professional Training by the Ministry of Energy of Russia

The conference was arranged with the support from the Ministry of Energy of the Russian Federation.

The key objectives of the conference:

Experience and opinions exchange about the most prospective technical condition evaluation methods for equipment at power facilities,

Promotion of news initiatives in the Russian legislation related to power industry,

Promotion of a more effective system of state control over the technical condition of the equipment operating at power facilities.

Yury Nikitin, Chief Designer at Izolyator spoke at the conference with the report "HV bushings technical condition evaluation as criterion of a higher reliability".

Our thanks to the organizers for the invitation and high level of event!

Rugrids-Electro 2015

Izolyator representatives visited the Moscow International Power Forum "Rugrids-Electro. Russian power grids. New opportunities." that took place at Expocenter in Moscow.

The Forum's organizers are: Rosseti JSC and CVK Expocenter JSC. The event was arranged under the auspices of the Ministry of Energy of the Russian Federation.

More than 50 events of the Rugrids-Electro 2015 business program and the exhibition space of 20 000 sq. m, received 5000 attendees representing federal and regional legislative and executive authorities, public companies, research institutions, managers of leading grid and generation companies, manufacturers of equipment and technology, Russian and foreign experts in the field of electrical energy.

A great many business contacts between Izolyator and partners were made at the forum. Thus, for instance, Maxim Zagrebin met our key partners at Power Machines – Toshiba. High-voltage transformers Ltd:

- Denis Morozov, Head of Procurement,
- Alexander Yuzhakov, Deputy Chief Designer,
- Alexander Smirnov, Lead Design Engineer.

We would like to thank forum organizers for the invitation and a high level of the event execution!



The Rugrids-Electro Forum seeks to assess external and internal challenges in the Russian power industry, adopt systemic solutions in all important aspects of electrical grid system functioning, and forecast future development and conditions of such development for the industry. The event includes an extensive business program with a large number of discussion panels and interactive events, and a major exhibition that presents scientific and technical potential of Russia in the power industry sector.



At Rugrids-Electro 2015 (L-R): Alexander Smirnov, Maxim Zagrebin and Alexander Yuzhakov

Electric Networks of Russia 2015

Alexander Savinov (L) and Andrey Kanivets at Electric Networks of Russia 2015



Izolyator representatives visited XVIII Specialized International Exhibition Electric Networks of Russia 2015 in Exhibition of National Economy Achievements in Moscow.

Organizers:

- Power Industry Veterans Council and Electric Networks JSC.
- The exhibition went with the support from:
- Energy Committee of the State Duma of Russian Federation,
- Ministry of Energy of Russian Federation,
- Moscow Government

More than 380 companies and organizations, including research, design, construction and operator organizations; power men from CIS countries, foreign companies and joint ventures, equipment and materials manufacturers, power specialists from other industries took part in the exhibition's work.

Izolyator representatives had a lot of useful contacts with partners at the exhibition. Thus, Alexander Savinov, Director on Strategic Sales met a number of key partners including Andrey Kanivets, Chief Designer at Togliatti Transformer, Sergey Lopukhov, Deputy Chief Substation at MES Center and others.

We wish to thank the organizers for the invitation and high level of the event!

120 YEARS
of experience
behind our back, we are the most
experienced manufacturer
of high-voltage bushings in the world
(> 570 000 pcs produced)



Electric Networks of Russia is a specialized international exhibition allowing its participants to develop their projects with support from leading power grids of Russia and enter business and scientific communities in order to obtain industry expertise or present a project to potential investors and customers.

Partner Event on Direct Current Technologies

Izolyator took part in a partner event with the Russian National Committee of CIGRE “Direct current technologies implementation in the Unified power grid of Russia: experience and prospects” as part of the business program at Rugrids-Electro 2015 Power Forum.

International Council for large high-voltage electrical systems (CIGRE – Conseil International des Grands Reseaux Electriques) recognizes HVDC technologies as the most prospective scientific research direction in the global electric power industry in the nearest decades.

Up until 1980ies, Russia was a leading research and development driver of direct current technology for various voltages. Lev Travin, Chief of Department at the All-Russian Electrical Engineering Institute and Secretary PC 22F at the International Electrical Engineering Commission, CIGRE B4 (Direct Current high-voltage systems and power electronics) Working Group Member made a presentation on the history of direct current networks development in the USSR and Russia.

The partner event was organized with the goal to seek solutions for technical policy elaboration by the Russian power industry players in regard to high-voltage direct current technologies implementation.



Panel of the partner event (photo: Rugrids-Electro official webpage)

Among the topics covered were:

- scientific technical opportunities and technological demands that bring forward the necessity to widely use direct current technologies in the Unified power network of Russia;
- application areas for DC technology in the Unified power system in Russia;
- advantages of DC power lines, DC links and other power equipment using DC technology, their operation features in Russian power industry;
- Russian electrical engineering industry capabilities to support DC programs realization over the next 5-10 year;
- cases of relevant experience in power lines transition from AC to DC, DC links installation and converter equipment implementation, etc.

Alexander Slavinsky, Chairman of the

Board of Directors represented Izolyator at the panel discussion. Yury Nikitin, Chief Designer, made a report “HV bushings for DC systems: design, manufacture, testing”.

We would like to thank the organizers for the invitation and a high level of the event execution!

Import Substitution Is a Priority



Round table “Import Substitution in Power grids” within Rugrids-Electro 2015

Within the business program of the Moscow Power Forum Rugrids-Electro 2015, Izolyator took part in the work of the round table “Import substitution in power grids”.

Import substitution is a priority with Russia’s industrial policy and one of the hottest topics of 2015. The key issues pending are selection of adequate line of import substitution, definition of long term approaches and meeting economic and human resources challenges.

The round table called for discussion on:

- import substitution potential in power grid system,
- comparative effectiveness of full cycle production, key components localization and

semi knocked down assembly,

- staffing, infrastructure and production challenges of import substitution.

Nikolay Shvetz, Deputy Chairman of the Board of Directors at FSK UES JSC took part in the round table work.

Alexander Slavinsky, Chairman of the Board of Directors represented Izolyator.

The round table generated suggestions that will be used for import substitution program elaboration by Rosseti JSC, according to Valery Gordienko, Deputy General Director on Technical Supervision and Oleg Bindar, Director of OEM Department at Rosseti.



“Import Substitution: borders of energy security” Round table panel within the agenda of Electric Networks of Russia 2015

Izolyator took part in the round table work «Import Substitution: Borders of Energy Security» within the XVIII Specialized International Exhibition Electric Networks of Russia 2015.

Organizers:

- - FSK UES JSC
 - - Expert section on Import Substitution by the Energy Committee of the State Duma of the Federal Assembly of the Russian Federation
 - - Russian National Committee of the International Council on Large Electric Systems High Voltage (RNC CIGRE)
 - - International Institute of energy policy and diplomacy MGIMO (University) of the MFA of Russia
 - - The Scientific department of the problems of infrastructure development of the Academy of Military Sciences
- Nikolay Shvetz, Deputy Chairman of the Board of Directors at FSK UES JSC moderated the round table.

Top managers of Russia’s largest OEMs, infrastructure companies, public organizations, scientific and educational institutions worked in the round table.

Alexander Slavinsky, Chairman of the Board of Directors represented Izolyator, he made a report on the topic of the round table and presented some suggestions.

The audience discussed key issues of equipment manufacturing facilities development in Russia, supplies diversification to the power industry customers, also support mechanisms for Russian enterprises and domestic demand, incentives for transparent state regulation, legislative base perfection for a more effective administration of domestic suppliers and largest consumers cooperation, innovative infrastructure and human resources potential development, improvement of competitive ability of Russian made equipment on global markets, foreign investment attraction

All relevant suggestions and comments sounded in discussions and reports will be used for development of the round table recommendations.

We appreciate the organizers for the invitation and the high level of the event execution!

POWER SECTOR AND INDUSTRY OF CIS COUNTRIES



MAXIM OSIPOV

Head of CIS Sales

The main tendency of the past year became strengthening Izolyator's positions in the CIS countries, which was marked by practical steps taken by our partners. Traditionally friendly relations between our countries and a long history of power industries creation in the past facilitate this work: about 80% of high-voltage bushings in the national power systems of generation, transmission and distribution are made by Izolyator and supplied in various historical periods.

During the year we successfully worked with power companies from Kazakhstan, Belarus, Tajikistan, Georgia, Uzbekistan. We made a good progress in relations development with TOO ASAsnab, Alatau Zharyk Kompaniyasy, Alageum Electric, KEGOC. In 2015 Izolyator made a routine replacement of 100 kV, 220 kV, 330 kV and 500 kV bushings at Nurek HPP with kind facilitation from representatives of Barki Tochik and Tajikenergosnab. We carried on our activities with Uzbekenergo JSC and Chirchik transformer plant, Georgian state power grid, Telasi JSC, EnergoPro Georgia and our old partners in Belarus and Ukraine.

In 2016 we plan to expand contacts with power companies from neighboring countries and will apply our best effort to furnish power facilities with reliable high-voltage bushings.

I would like to express gratitude for all our partners on behalf of Izolyator for their interest and unfailing hospitality.

Izolyator's Partner in Kazakhstan Visited the Plant



At the materials and completing parts warehouse of Izolyator, left to right: Murat Botabaev, Vladimir Romanov, Victor Kiryukhin and Maxim Osipov

Murat Botabaev, our Representative in Kazakhstan, visited Izolyator plant.

On Izolyator side the guest was welcomed by:

- Vladimir Romanov, Head of Purchasing;
- Victor Kiryukhin, Head of Design Bureau;
- Maxim Osipov, Head of CIS Sales.

The hosts arranged a tour of the plant introducing the guest to the modern technologies of production and testing of RIP-insulated high-voltage bushings.



Kazakhstan possesses large deposits of natural resources (oil, gas, coal, uranium) entering the pool of nations rich with energy resources.

The key industry in the country is the power industry with total installed generation capacity of 18, 992.7 MW. About 70% of electric power is produced by coal burning plants, 14.6% - hydro power plants, 10.6% - gas power plants, 4.9% - oil power plants, 0.4% - renewable energy. Availability of water resources, with 170 bln kW/h annual potential capacity, makes it possible to cover 10% of the entire demand in power.

Alageum Electric Representatives at Izolyator



At the assembly shop at Izolyator (L-R): Maxim Zagrebin, Izetulla Kozhabaev, Victor Kiryukhin, Erkebulan Ilyasov, Yaroslav Sedov, Alexander Slavinsky. R - Maxim Osipov

Izolyator received representatives of Kazakh Alageum Electric holding: Erkebulan Ilyasov, Chairman of the Board of Directors and Izetulla Kozhabaev, Procurement and Logistics Director with a visit.

On Izolyator side the guests were welcomed by:

- Alexander Slavinsky, Chairman of the Board of Directors,
- Dmitry Ivanov, Head of Test Center,
- Victor Kiryukhin Head of Design Bureau,
- Maxim Zagrebin, Head of OEM Sales,
- Maxim Osipov, Head of CIS Sales,
- Yaroslav Sedov, Business Development Manager.

The hosts made a tour of the plant where the visitors were introduced to the modern technologies of manufacture and testing of high-voltage bushings.

More than
15 YEAR
EXPERIENCE
of RIP bushings
manufacture



«Alageum Electric» is the largest electrical company in Kazakhstan, which includes more than 30 large enterprises and factories, successfully operating in the electric power sector, electrical engineering and construction. These enterprises include Kentau Transformer Works, and specialized company Electromontazh JSC, which performs electrical fitting works of any complexity, with extensive experience, and 10 specialized construction directorates, including Electrical Products Plant, the only company in Kazakhstan to produce cable track systems. The holding has its own extensive network across the country of more than a dozen branches and representative offices.

Tajikistan Partner's Visit

Fazliddin Kholov, Izolyator's partner in Tajikistan visited the plant in spring 2016.

- The guest was welcomed by:
- Victor Kiryukhin Head of Design Bureau,
- Maxim Zagrebin, Head of OEM Sales,
- Dmitry Karasev, Sales Manager.

The sides discussed a wide range of issues regarding partnership and the nearest promotion plans in the power market of Tajikistan. The hosts arranged a tour of the plant where the visitor was introduced to the modern technologies of manufacture and testing of high-voltage bushings.



Power Industry of the Republic of Tajikistan – total installed capacity of the power system of the Republic of Tajikistan is 5070 MW with TPPs share accounting for 318 MW (6.3%). The power is mainly generated by hydropower plants. Tajikistan holds one of the leading positions in the world for water-power potential and ranks the 8th by absolute measures. Should the country be able to tap its water-power potential it could be the largest electric power exporter in the region.



Assembly shop of 10 – 150 kV bushings at Izolyator plant (L-R): Dmitry Karasev, Victor Kiryukhin, Fazliddin Kholov. (R) Maxim Osipov

Visit to Substations of Barki Tochik JSC

Victor Kiryukhin and Maxim Osipov visited Barki Tochik JSC's substations in Tajikistan. They were received by Kamoliddin Sharipov, Head of Operation and Maintenance 110/220/500 kV Substations at the Department Transmission

power lines at Barki Tochik JSC and Umarali Sultanov, Deputy Chief of Power Engineering Equipment Department at Tajikenergосnab.

The delegation visited two substations operating Izolyator 110 kV and 220 kV RIP-



Kamoliddin Sharipov (L) and Victor Kiryukhin at Ordzhonikidzeabad-2



Izolyator representatives visiting Uzlovaya substation

insulated bushings on autotransformers: Uzlovaya, Istaravshanskie power mains in Istaravshan and Ordzhonikidzeabad-2, Central power mains in Dushanbe. At the end of the year, Izolyator and Barki Tochik signed an agreement for delivery of 500 kV RIP-insulated bushings.

We would like to thank Barki Tochik JSC, Istaravshanskie and Central power mains for cooperation, seminar organization and an all-time warm welcome.



Barki Tochik JSC is a state-owned national electric power company of the Republic of Tajikistan based in the republic's capital – Dushanbe. The company and its assets are a property of the Republic of Tajikistan. The company's mission is to produce, transport, transmit, distribute and sell electricity and heat primarily on local market of Tajikistan.

Meeting with Uzbekistan Partner

Meeting with Uzbekistan Partner

Armen Bunyatyan, Izolyator's partner in Uzbekistan visited the plant.

Maxim Osipov and other Izolyator colleagues received the visitor.

The partners indulged into a thorough discussion of cooperation prospects expressing intention to actively develop beneficial business relations with leading Uzbek power industry companies and OEMs.



The Power Industry of Uzbekistan is a base industry of the national economy of the republic. With its solid production and scientific engineering potential, it has a substantial impact on development of the country economy.



Armen Bunyatyan (R) and Maxim Osipov (3d L) at Izolyator talks

Georgian State Electrosystem



Photo from official website of Georgian State Electrosystem

Maxim Osipov and Tamaz Sharikadze, Izolyator Partner in Georgia visited Georgian State company Georgian State Electrosystem in Tbilisi.

On Georgian State Electrosystem side the guest were received by:

- Nodar Gavasheli, Head of Transformer Repair Service

- Lasha Shengelia, Procurement Manager. The sides discussed prospects and efficient forms of cooperation development on a long term basis.

We would like to thank Georgian State Electrosystem for the invitation and a warm welcome!



JSC Georgian State Electrosystem (GSE) is a 100% state-owned joint stock company providing transmission and exclusive dispatch services to about 50 eligible companies in Georgia. Based on the transmission and dispatch tariffs established by the independent regulator (GNERC-Georgian National Energy and Water Regulatory Commission) GSE carries out technical control over the entire power system to ensure the availability of the system for uninterrupted and reliable power supply; and transfers, without the right of purchase or sale, the electricity imported or generated in Georgia to distribution companies, direct customers or the power systems of neighboring countries. Georgia's transmission network operates at 500 kV, 400 kV, 330 kV, 220 kV, 110 kV, 35 kV, 10 kV, 6 kV voltages. The National Control (Dispatch) Centre, or NCC, of Georgia is located at GSE headquarters, in the center of Tbilisi.

Talks in Telasi

Maxim Osipov and Tamaz Sharikadze visited Telasi JSC in Tbilisi. Vakhtang Kikladze, Technical Director at Telasi JSC received the guests. The sides discuss prospects and efficient forms of long term cooperation development.

We would like to thank Telasi JSC for the invitation and a warm welcome!



Telasi JSC is one of the major network companies of Georgia carrying out distribution and sale of electric power in Tbilisi. At present the company employs more than 2300 persons. The main kinds of activity: purchase and sale of electric power; operation and maintenance of power grids; services for electric power transit; administration of integrated and coordinated system of power supply, water supply and wastes management in Tbilisi.

Tamaz Sharikadze at Telasi JSC



Maxim Osipov at Telasi JSC

Visit to Energo-Pro Georgia



Maxim Osipov, Head of CIS Sales at Izolyator and the company's partner in Georgia Tamaz Sharikadze visited Energo-Pro in Tbilisi.

Lia Lezhava, Senior Specialist Procurement Division at Energo-Pro welcomed the visitors.

The sides discuss prospects and efficient forms of long term cooperation development.

We would like to thank Energo-Pro for the invitation and a warm welcome!

Energo-Pro Georgia JSC is wholly owned by the Energo-Pro a.s., a Czech based company. The company entered Georgian energy market on June 29, 2007. Measured in number of customers served, sales and service territory, Energo-Pro Georgia JSC represents one of the biggest energy companies in the region. Energo-Pro Georgia JSC is the member of Energo-Pro Group, which unites energy utilities in Czech Republic, Bulgaria, Turkey and Armenia. At present Energo-Pro Georgia JSC manages and maintains 15 medium and small size hydro power plants with total capacity of 469,25 MW. Apart from abundant generation facilities, Energo-Pro Georgia JSC is the largest private owner of distribution assets.

Visit of Izolyator's Partner in Belarus



Ali Churaev (L) and Maxim Osipov at the Test Center at Izolyator plant

Ali Churaev, Izolyator's partner in Belarus visited the plant. The guest was welcomed by Maxim Osipov. He arranged for a tour of the plant introducing the visitor to the design and modern manufacturing and test-

ing technologies of modern HV RIP bushings.



Power Industry is a key sector in the national economy of Belarus. There are a number of programs defining its strategy ensuring development in accordance with the government strategy priorities. The main Government Body for energy policy formulation and realization in Belarus is the Ministry of Energy.

EnergyExpo 2015

Maxim Zagrebin visited XX specialized international exhibition Power Industry. Ecology. Energy-saving. Electro (EnergyExpo 2015) held in the framework of the XX Belarusian Energy and Ecology Forum in Minsk.

Business meetings with Izolyator partners in Belarus and Ukraine took place. From Belarus, Sergey Lagun, Igor Fedorovich and Alexander Votyakov, from Ukraine, Boris Trembovetsky attended the meeting with Izolyator representative.

We wish to thank the hosts of the event for the high level of EnergyExpo 2015 organization! Our thanks to the Belarusian partners for the invitation to the exhibition!

EnergyExpo 2015 (L-R): Igor Fedorovich, Maxim Osipov, Alexander Votyakov and Boris Trembovetsky



ENERGY EXP

The Specialized Power Industry. Ecology. Energy-saving. Electro Exhibition is part of the Belarusian Energy and Ecology Forum organized by the Ministry of Energy of Belarus. Traditionally, the exhibition has attracted leading Belarusian and international OEMs, technologies and materials suppliers to power industry, ecology, energy-saving and electrical engineering since 1995 being one of the largest in the CIS and Baltics.



YAROSLAV SEDOV

Business Development Manager at Izolyator

The groundwork of our successful operation on the territory of European Union was laid in 2014 when we enhanced our marketing activities and defined our priorities on the market.

In 2015 we set a target to begin an active promotion of RIP technology as the most advanced compared to high-voltage bushings with oil-in-paper insulation. We spoke about its reliability, ecological properties and ease of operation at all business meetings that we had with such companies of European Union as Enel and Elia, Getra S.p.A., Tamini Transformatori S.r.L., Tironi Power Transformers. Delegations from Alstom Grid AG, Getra, Elia visited Izolyator facility to witness the conditions of bushings manufacture and high-voltage testing.

Our efforts brought results. Thus, Izolyator delivered under two trial contracts for the Grid Company Elia and was selected the first in history of Belgian Power Industry supplier of high-voltage bushings with RIP insulation. A true breakthrough happened last year with Alstom Grid AG, Switzerland. Our company passed qualification audit and received A class high-voltage bushings supplier status with Alstom Grid AG valid for 10 years. The first order we received comprised a lot of 110 kV bushings for SF6 substation at Yakutskaya SDPP. In 2015 Izolyator sent the first shipment of 172 kV line bushings with RIP insulation to KOLEKTOR which supplied finished transformer to Norwegian Andritz Hydro, the largest manufacturer of electromechanical equipment.

In 2016 we will be required to do a massive workload regarding systematization of partners' inquiries, set up system of information exchange in accordance with EU standards. We will continue to develop partner relations with European companies, perfect logistics for products delivery. We also plan to facilitate technical coordination between our partner FGC UES and European Association of System Operators. We are prepared to assist dialogue between any market players of Europe and Russia Power Industry.

The First Delivery to Belgium

Photo from official website of Elia



Izolyator made the first RIP bushings delivery to Elia, the state Belgian grid company sending RIP HV bushings to complete

CG Power Systems Belgium NV made transformers.

The state Belgian grid company Elia be-

came the first in Europe to start transition from OIP technology to RIP making Izolyator the first supplier of this product to Europe!



Elia is not just Belgium's transmission system operator — it is also a key player at European level. Elia is Belgium's high-voltage transmission system operator (30 kV to 380 kV), operating over 8000 km of lines and underground cables throughout Belgium. Elia plays a crucial role in the community by transmitting electricity from generators to distribution systems, which in turn deliver it to the consumer. Elia also plays an essential part in the economy, as our system supplies power directly to major companies connected to the grid. Boasting a pivotal location in Europe, Elia is also a key player in the energy market and the interconnected electricity system.

Izolyator Bushings Tests Inspection by CG Power Systems Belgium NV

CG Power Systems Belgium NV inspected Izolyator bushings tests.

Izolyator executed acceptance tests of 100 kV (IVUE.686351.607-01) and 172 kV (IVUE.686352.608-01).

- Rudy Van den Bosch, Quality Manager arrived at the plant to inspect the testing.
- Izolyator's Alexander Novikov, Quality Director,
- Vladimir Ustinov, Deputy Quality Director,
- Natalia Mazova, International BDM, oversaw the testing process.
- Dmitry Ivanov, Head of Test Center managed the tests.

All bushings tests were successful.



Tests are progressing well. Rudy Van den Bosch (L) and Vladimir Ustinov

Company
and products
RECOGNIZED
worldwide



At the Test Center of Izolyator plant, (L-R): Dmitry Ivanov, Rudy Van den Bosch, Vladimir Ustinov and Natalia Mazova



CG Power Systems Belgium NV (formerly Pauwels Trafo Belgium NV) is a developer of innovative, high-quality, reliable products and turnkey solutions for a wide range of power applications with manufacturing units in Belgium, Ireland, USA, Canada and Indonesia. CG Power Systems Belgium NV Business Units: transformers, switchgear, systems, automation, services. The CG strategy is based on creating solutions for its customers, combining state-of-the-art technology and manufacturing with international systems and aftersales services, making sure that project needs are met, anywhere in the world.



Rudy Van den Bosch (center) inspecting bushings tests

Meeting at Terna S.p.A.

Izolyator representatives visited power grid company Terna S.p.A. in Rome, Italy

Izolyator team:

- Ivan Panfilov, Commercial Director;
- Natalia Mazova, International Business Development Manager;
- Yaroslav Sedov, Business Development Manager;
- Giuliano Bertolazzi, Izolyator Partner in Europe.

On Terna side the guests were received by:

Andrea Valant, Substation Technology Development Manager Technologies and Specialist Support;

Stefano Zunino, Technologies development Substation Engineering.

The sides discussed possibilities of RIP technology application at grid facilities in Italy expressing readiness for practical steps in cooperation development.

We wish to thank Terna S.p.A. for the invitation, openness to cooperation and a warm welcome!



Meeting at Terna S.p.A.



The Terna Group (Terna S.p.A.) is the first grid operator for electricity transmission in Europe. Through Terna Rete Italia the Group safely manages the National Transmission Grid with over 72,000 km of HV lines. Terna Rete Italia is the company belonging to the Terna Group that deals with the national electricity grid's operation, maintenance and development fully respecting the environment and communities.

Terna S.p.A. Representative's Visit and Getra S.p.A. Audit



Qualification audit of Izolyator plant by the industrial group Getra S.p.A. in presence of Terna S.p.A. representative

Izolyator plant successfully passed qualification audit from Italian industrial group Getra S.p.A. in presence of power grid Terna S.p.A. representative.

Anna Maria Fabretto represented Terna S.p.A.

On behalf of Getra S.p.A. industrial group three auditors arrived:

- Giuseppe Lucci, Head of Procurement,
- Fabrizio Ferrari, Quality Manager,
- Angelo Vitiello, Engineer.

On Izolyator side the guests were received and attended by:

- Alexander Novikov, Quality Director,
- Vladimir Ustinov, Deputy Quality Director,
- Dmitry Ivanov, Head of Test Center,
- Natalia Mazova, International BDM,
- Yaroslav Sedov, BDM.

The auditor received full access to all production cycle technologies: from early stages of design to finished goods shipment. All relevant technical documentation was provided immediately upon request. The auditors received full and complete replies and explanations on all issues of interest.

In the result, the audit ended with a successful result with Italian specialists stating unconditional conformity of the plant to the best world's standards.

We wish to thank Terna S.p.A. and Getra S.p.A. for their high opinion on Izolyator plant as a result of the audit.



Getra is an Italian Group leader in design, manufacture and supply of power transformers, distribution transformers and grid solutions. It was established in 1949 and nowadays it has a track record of 250.000 Transformers Supplied in Europe, America, Asia and Africa. With five companies (Getra Power S.p.A., Getra Distribution S.r.l., Getra Service S.r.l., Getra Engineering & Consulting S.r.l. and Getra Ecopower), two plants featured with the most advanced technologies for production & testing, two branches in Africa and Middle East, Getra Group covers and meets the needs of an increasingly dynamic and developing global market with a complete range of tailor made, efficient and high quality solutions.

Izolyator is An Official Supplier to Getra S.p.A.

GETRA
GETRA POWER SpA
Power Transformers
Marcianise, 31/03/2016

"To whom it may concerns"

Object: Qualification Process

We hereby confirms to have successfully completed the Qualification Process relating to the evaluation of IZOLYATOR COMPANY (MASSA LLC).

"Izolyator Company" was included in the GETRA's Qualified Suppliers List (Ref. doc. RSF 02-16) and it's authorized to provide RIP and OIP type Bushings.

Best Regards

f. Ferrari

(Quality and Environment Manager GETRA S.p.A.)

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Partita IVA/C.F./Registro
Imprese Napoli: 06284691216
R.E.A. NAPOLI 805634
Direzione e Coordinamento di
GETRA S.p.A.

Certificate of conformity
ISO 9001 SGS n. IT 05/0429
ISO 14001 SGS n. IT 06/0554
www.getra.it
getrapower@getra.it

Official confirmation letter on the successful result of the qualification audit of Izolyator plant and listing confirmation among Getra S.p.A. qualified suppliers

On 31 March 2016, Izolyator became an official supplier to Getra S.p.A. industrial group as result of successful qualification procedures

that took place on 25 February 2016. We wish to thank Getra S.p.A. for their high opinion on Izolyator plant and the quality of its products!



GIULLIANO BERTOLAZZI

*Izolyator Partner
in European Union*

In 2015 I visited the plant of Izolyator company that I am in partner relations with. The staff of the plant gave a thorough introduction to the facility, high-voltage bushings with RIP insulation manufacturing and test technologies, their design and operational features.

The process lines of the plant are fitted-out with the latest equipment enabling the plant to produce 12,000 bushings of world recognized quality annually. The products reliability is guarantee by the unique history of the plant and 15-year track record of RIP insulation manufacture and field operation, proprietary patented technologies, personnel of highest qualification. All products meet international and Russian standards and are ready for successful operation in any part of the world.

The technical level of Izolyator bushings, experience and ability to foresee customers' requirements are a solid basis for mutually beneficial and long term cooperation with leading power equipment manufacturers in Europe. In 2015 I was in the group of Izolyator representatives who visited a number of European companies and developed partnerships elaborating plans of practical cooperation.

In 2016 I see real prospects of successful cooperation development with European companies. I am confident in the success of joint projects and will do my best to make them happen.

I wish to thank our European colleagues for a partnership, interest and intention to develop international cooperation.

Visiting Tamini Trasformatori S.r.l.

Izolyator representatives visited transformer manufacturer Tamini Trasformatori S.r.l. in Milan, Italy.

Izolyator representatives:

- Natalia Mazova, International Business Development Manager;
- Yaroslav Sedov, Business Development Manager;
- Giuliano Bertolazzi, Izolyator Partner in Europe.

Tamini representatives:

- Roberto Sacco, Head of Quality;
- Marco Giussani, Electromagnetic Design, Engineering;
- Igor Fedorenko, Technical Proposal Engineer, Project Governance;
- Stefano Badini, Head of Engineering;
- Marco Mariani, Electromagnetic Design, Engineering;
- Mauro Olchini, Electromagnetic Design Manager, Engineering.

The visitors gave Izolyator corporate presentation and a technical seminar detailing design and operation features of RIP technology and advantages over conventional technologies. In the result of the talks, Tamini Trasformatori S.r.l. expressed intention to use RIP bushings in future. In its turn, Izolyator confirmed readiness to supply all necessary technical specifications and support based on the substantial RIP bushings design, testing and production experience.

We wish to thank Tamini Trasformatori S.r.l. and all meeting attendees for the opportunity to visit Italia's leading transformer maker and discuss cooperation!

Izolyator representatives at Tamini Trasformatori S.r.l. (L-R): Natalia Mazova, Yaroslav Sedov and Giuliano Bertolazzi



Tamini is the leading Italian company in the world for the design and production of industrial, power and special transformers. Founded in 1916 in Milan, it supplies its products to the most important industrial sectors (i.e. steel, aluminum, mining, oil & gas, chemical and transportation) and the most highly qualified operators in the electrical energy sector (production, distribution and transmission). With a century of experience in the market and world records in the field, Tamini combines the quality of its products, designed and hand manufactured with the unmatched expertise of the Made in Italy. More than 9,000 Tamini transformers have been manufactured and installed for customers in more than 90 countries around the world. Since 2014 Tamini has been part of the Terna Group, the Italian Electricity Transmission Grid Operator.



Elettromeccanica Tironi S. r. l. Visit

Izolyator representatives visited transformer manufacturer Elettromeccanica Tironi S. r. l. in Modena, Italy.

Izolyator representatives:

- Natalia Mazova, Yaroslav Sedov, Giuliano Bertolazzi.

Tironi representatives:

- Ms. Anita Trombini, Purchasing Department;
- Ing. Marco Tironi, Purchasing Manager.

The sides established business contacts and outlined plans of cooperation development.

We would like to thank Elettromeccanica Tironi S. r. l. for the invitation and a warm welcome!

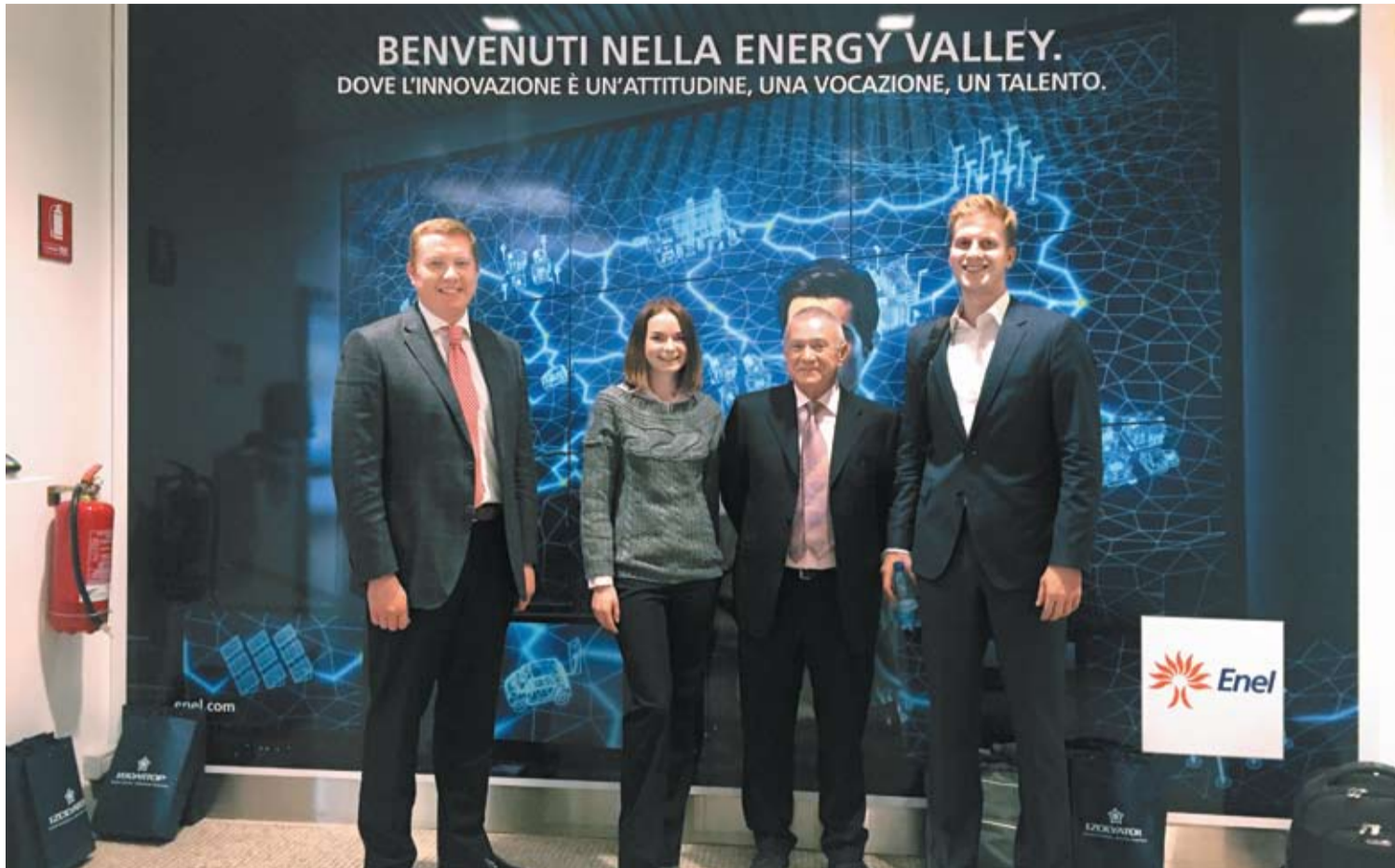


Officially founded in 1960 by Carmelo and Luciano Tironi, Elettromeccanica Tironi's experience in electromechanical sector was born in the 30s, when the two founders, respectively grandfather and father of the current President, were already responsible at a high level in other important companies of the same sector. Elettromeccanica Tironi is one of the first European manufacturers of autotransformers and power and distribution transformers, manufactured in accordance with client specifications. Throughout its history the company has steadily expanded its products' applications and developed considerable experience. From late 2010, with the completion of ongoing investment, the range of power transformers will be up to 500 MVA/ 420 kV.

Meeting at Elettromeccanica Tironi S. r. l. (L-R): Anita Trombini, Marco Tironi, Yaroslav Sedov, Natalia Mazova and Giuliano Bertolazzi



ENEL S.p.A. Talks



At Enel S.p.A. (L-R): Ivan Panfilov, Natalia Mazova, Giuliano Bertolazzi and Yaroslav Sedov

Supply
reference
ALL AROUND
the world



Enel is a multinational power company and a leading integrated player in the world's power and gas markets, with a particular focus on Europe and Latin America. The Group operates in over 30 countries across 4 continents, producing energy through a net installed capacity of more than 89 GW and distributing electricity and gas through a network spanning around 1.9 million km. Enel, with its 61 million end users worldwide, has the largest customer base among European competitors and Europe's leading power in terms of installed capacity and reported EBITDA.

Talks at Enel S.p.A.

Izolyator representatives visited power company Enel S.p.A. in Rome, Italy

- Izolyator representatives:
- Ivan Panfilov, Commercial Director;
- Natalia Mazova, International Business Development Manager;
- Yaroslav Sedov, Business Development Manager;
- Giuliano Bertolazzi, Izolyator Partner in Europe.

Enel representatives:

- Flavio Mauri, Network Technologies, Infrastructure and Networks Italy;
- Angelo De Simone;
- Francesco Poli.

The sides discussed possibilities of RIP technology application at grid facilities in Italy expressing readiness for practical steps in cooperation development.

We wish to thank Enel S.p.A. for the invitation, openness to cooperation and a warm welcome!



Delivery to Latvenergo

Izolyator effected HV RIP bushings delivery in the address of Latvenergo JSC in Latvia. The contract was received in the result of a tender announced by Latvenergo JSC with the purpose of obsolete bushings replacement on its power facilities. Izolyator products fully met customer requirements and appeared the most competitive.

We appreciate Latvenergo JSC for selecting our product!



Latvenergo AS is the leading Latvian environmentally-friendly producer of electricity and thermal energy — its power plants provide approximately 90% of all electricity generated in the country, satisfying more than a half of the electricity demand in Latvia. Latvenergo Group is a vertically integrated power supply utility operating in electricity and thermal energy generation and supply, electricity distribution services and transmission system asset management. Latvenergo Group comprises the parent company Latvenergo AS and six subsidiaries. All shares of Latvenergo AS are owned by the State and they are held by the Ministry of Economics of the Republic of Latvia. Installed electrical capacity is 2519 MW, thermal capacity — 1829 MW. Market share in the Baltics is 33%.

The First Delivery to Norway

Izolyator made the first delivery to the customer from Norway – Eidsfoss Power Plant.

We would like to thank our partner – Kolektor Etra d.o.o., Slovenia – for their trust and an opportunity to take part in an important for Norwegian generation

project. The trust shown by our European colleagues confirms the high quality of Izolyator products.



Andritz Hydro AS is located at Bergermoen in Jevnaker. Overall, we are 160 employees and have a workshop area of around 5,000 m². Supplying hydroelectric equipment and power plants for power generation make up 95 % of Andritz Hydro's annual turnover, the remaining 5 % are made from the industry. The main market of the company is Norway.

Photo from official website of Andritz Hydro AS





ANDREY SHORNIKOV

International Business Development Manager at Izolyator

2015 can be called a year of great achievements! The biggest one was winning in the tender for supply of 500 kV, 220 kV and 110 kV RIP bushings as components of Crompton Greaves transformers delivered to the biggest national power operator Power Grid Corporation of India Limited. Transformers with our bushings were successfully installed at Bamnauli 400 kV substation of Delhi Transco Limited in Delhi. Izolyator became the first supplier of HV bushings with hard insulation to India. The second key achievement of the year was winning in the tender for supply of large lot of 245 kV bushings for the needs of Power Grid Corporation of India Limited. In the fall after the type tests of our products Izolyator was recognized an official supplier to PowerGrid.

In 2015 we had a series of technical seminars for clients where we told representatives of commercial and technical teams about production, installation and operation of bushings with hard insulation and their undeniable advantages to oil-in-paper bushings.

In 2016 we plan to continue strengthening business ties on mutually beneficial basis with existing and new partners in India. We will keep sharing experience in production and operation of electrical equipment with PowerGrid, major HV transformer manufacturers and power generation enterprises. Our Indian colleagues confirmed their readiness to cooperate with Izolyator and FGC UES in that area.

PowerGrid Confirmed Tests Results

Power Grid Corporation of India Limited officially confirmed type tests results for Izolyator HV bushings.

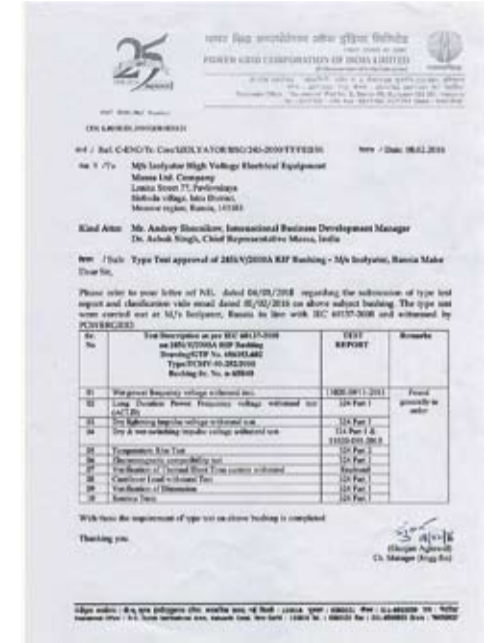
PowerGrid's engineers were invited to see all stages of the tests.

The following custom made RIP bushings were tested:

- 52 kV / 3150 A
- 252 kV / 2000 A
- 420 kV / 1250 A (seismic tests to be completed by end of Q2 2016)

This is yet another important result and stage in close cooperation between PowerGrid and Izolyator that has been actively

developing since 2014. We wish to thank Power Grid Corporation of India Limited for cooperation and a high appreciation of our products quality.



Power Grid Corporation of India Limited (PowerGrid) is an India-based company engaged in construction, operation and maintenance of interstate transmission system (ISTS). The company's

core business is transmission of bulk power across different States of India. The company also renders telecom and consultancy services. The telecom business is part of PowerGrid's transmission infrastructure across the country. As regards consultancy services business unit, it includes all projects in engineering, procurement and construction within and outside India: electrical

power transmission and distribution by state-owned and private utilities, energy efficiency, smart grid and training. The Company owns and operates transmission network of about 106.804 Ckm of Extra High Voltage (EHV) transmission lines, 184 EHVAC & High Voltage Direct Current (HVDC) Sub-stations and 205 923 MVA transformer capacity.

Business Meeting and Conference at PowerGrid



Izolyator representatives in Gurgaon (L-R): Andrey Shornikov, Dr.Ashok Kumar Singh and Ivan Panfilov

Izolyator had a meeting and a conference at the State Power Grid Company Power Grid Corporation of India Limited in Gurgaon.

Izolyator was represented by:

- Ivan Panfilov, Commercial Director;
- Andrey Shornikov, International Business Development Manager;

- Dr. Ashok Kumar Singh, Partner in India. The visitors were received by:
 - Prem Kumar Gupta, General Manager (CMG);
 - Kailash Rathore, General Manager;
 - Anurag Srivastava, Dy. Manager (Material Department).
- Besides, meetings with HV bushings

operators and representatives of legal and operations departments of PowerGrid took place.

The sides discussed possibilities of RIP bushings of new designs and classes development and production in required quantities for operation at PowerGrid facilities. The partners discussed all aspects of cur-



Izolyator's conference attendees at PowerGrid



Presenting documents with confirmation of Izolyator bushings tests' success



At the talks at PowerGrid

rent cooperation and prospects of business development

On 18 February, our colleagues gave a conference "Key Facts about Izolyator company. Summary of activities, plans and suggestions". PowerGrid's staff responsible for OEMs cooperation took part in its work.

The conference went in the atmosphere of mutual interest and involved a broad discussion of the offered topics with Ivan Panfilov giving detailed answers to the questions from the audience. Izolyator representatives received official certificates with confirmation of successful type tests of HV bushings.



Strengthening business ties

Interests
and success
OF THE PARTNERS
our main goal!

**ASHOK SINGH**

*Izolyator Partner
in India*

Izolyator today is a manufacturer of reliable, quality and competitive equipment. The company's undeniable advantage is an ability to produce custom-made products on individual orders from our partners. The combination of those factors gives together with competent marketing activities gives us competitive edge both on Russian and international markets.

There are facts to prove that: successful fulfillment of bushings delivery terms for Power Grid Corporation in assembly with Crompton Greaves transformers. The HV equipment was made for Bamnauli 400 kV substation of Delhi Transco Limited in Delhi. The specialists of the company paid a careful attention to this project – they took part in installation and oversaw the process.

The seminars for technical and commercial specialists of Indian companies were organized on the high level. This work sparked interest from large companies of India in transition to hard RIP bushing technology during power equipment modernization.

The power market of my country has high investment attractiveness therefore I see real prospects to retain existing and develop new business ties with the Indian partners. I believe in Izolyator's success and I will be honored to make a contribution in achieving it.

Business Meeting and Seminar at TTDI



TTDI meeting participants

Izolyator held a meeting and a seminar at Toshiba Transmission & Distribution Systems (India) Pvt. Ltd in Hyderabad.

Izolyator was represented by:

- Ivan Panfilov, Commercial Director,
- Andrey Shornikov, International BDM,
- Dr. Ashok Kumar Singh, Partner in India.

The guests were received by:

- Dr. Katsutoshi Toda, Chairman & Managing Director,
- Kolla Sharat Chandra, General Manager (Power Transformers Division);
- Atmaram Shinde, Procurement Strategy (Corporate and Power Transformers);
- K. V. Ramakrishna, Manager — Quality (Power Transformers Division).

Specialists from TTDI's commercial and technical divisions also attended.

The visitors made acquaintance with Stefano Punte, Project Engineer (Engineering Dpt) at Toshiba Transmission & Distribution Europe S.p.A.

The sides discussed possibilities of HV bushings development according to TTDI technical requirements, nearest prospective projects that Izolyator can be considered by TTDI as a potential supplier.

TTDI has experience of transformers with Izolyator 220 kV bushings delivery.

TOSHIBA
Leading Innovation >>>

Toshiba Transmission & Distribution Systems (India) Pvt. Ltd. (TTDI) produces transformers. The company was incorporated in 2013 and is based in Medak, India. Toshiba Transmission & Distribution Systems (India) Pvt. Ltd. operates as a subsidiary of Toshiba Corporation. Toshiba Transmission & Distribution Systems group is a world leader in the supply of integrated solutions for energy Transmission & Distribution.

Izolyator's seminar at TTDI



Izolyator seminar participants at TTDI



BHEL Talks

Izolyator representatives visited Bharat Heavy Electricals Ltd in New Delhi.

- Izolyator side:
- Ivan Panfilov,
- Andrey Shornikov,
- Dr. Ashok Kumar Singh.
- The receiving side:
- Akhil Joshi, Executive Director (TL & JV and M&A);
- Shakil Kumar Manocha, General Manager (Technology Licensing & Joint Ventures);
- Ravi Joshi, Senior Manager (Technology Licensing & Joint Ventures);
- Shivang Bhushan, Sr. Engineer (TL & JV);
- Ritesh Yadav, Sr. Manager (Technology Licensing & Joint Ventures).

The sides discussed directions and forms of cooperation development and steps to optimize practical coordination.



Bharat Heavy Electricals Ltd. (BHEL) designs, manufactures, tests, installs and services a product mix of more than 180 articles for such key industries as power, oil and gas, defense and railway transportation, etc. It is an industrial leader in India with presence in 76 countries.



Business meeting at BHEL (L-R): Andrey Shornikov, Dr. Ashok Kumar Singh, Akhil Joshi, Ravi Joshi, Shakil Kumar Manocha, V.K. Bassi and Ritesh Yadav



BHEL specialists at the meeting with Izolyator representatives



Izolyator representatives at the meeting at BHEL

Bangalore Exhibition



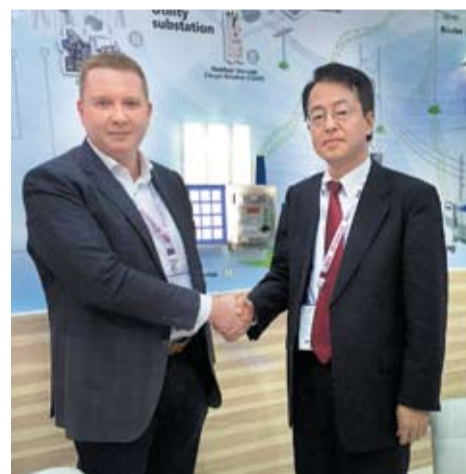
The exhibition provided vast opportunities for business networking

Izolyator representatives visited Elecrama 2016 exhibition in Bangalore, India.

- Izolyator representatives:
- Ivan Panfilov;
- Andrey Shornikov;
- Dr. Ashok Kumar Singh.

At the exhibition, the Izolyator representatives made a number of business contacts with exponents.

We would like to thank the exhibition organizers for the opportunity of business networking and the high level of event execution!



Strengthening business contacts is a beginning of a future success



The biggest showcase of the world of electricity, Elecrama brings together the complete spectrum of solutions that powers the planet. Featuring not just equipment & technology, but peerless thought leadership platforms for everything electric — from technical conferences to industry summits. Elecrama since its inception in 1990 has been growing at a steady pace of 40 % to become the exhibition of choice for the global electrical equipment industry. Consistently delivering value, fulfilling expectations and partnering with numbers stories of growth and expansion, Elecrama today stands at the threshold of being the true comprehensive global electricity forum.



Meeting at an exponent's booth at Elecrama 2016



NATALIA MAZOVA

International Business Development Manager at Izolyator

At the beginning of 2015 Izolyator management inspired by successful progress of Indian projects made a decision to expand our brand presence in the Asian region. Throughout the whole year we actively worked with the largest generation, grid companies and transformer manufacturers in the Republic of Vietnam. Our main objective was to acquaint new partners with RIP insulation advantages and prove that they are a worthy alternative to bushings of other designs.

In the result, Izolyator won a tender for supply of 220 kV bushings to HoaBinh HPP. RIP bushings were manufactured, passed through tests and put into operation as components of a Dong Anh Electrical Equipment Corporation transformer. In the process of the project realization the companies signed an Agreement for cooperation.

Special attention should be given to the meeting with the officials from the Ministry of Industry and Trade of Vietnam who expressed interest in development of dialogue between the state grid company Vietnam Electricity EVN and Russia's Federal Grid Company. Vietnamese colleagues confirmed their readiness to cooperate with Izolyator and FGC UES in the area of sharing knowledge on operation of power networks, new generation bushings, innovations implementation.

The main Izolyator's priority remains presence expansion in the Asia Pacific region. In 2016 in accordance with the strategic plan, Izolyator will continue to strengthen partner relations with the key generation, power grid companies and transformer plants of Vietnam, such as HoaBinh HPP, EVN, TPS Falai and EEMC represented by the transformer plant Dong Anh Electrical Equipment Corporation.

Izolyator management sincerely thanks our Representatives Mac Thi Vinh Phu and Le Anh Hien for their help in realization of business projects, meetings organization and warm welcome. We look forward to cooperate in future.

EEMC Cooperation



EEMC meeting, (L-R): Mac Thi Vinh Phu, Natalia Mazova, Ivan Panfilov and Le Van Diem

Izolyator representatives visited Dong Anh Electrical Equipment Corporation (EEMC) transformer plant in Hanoi, Vietnam.

- Izolyator representatives:
- Ivan Panfilov, Commercial Director,

- Natalia Mazova, International Business Development Manager,
- Mac Thi Vinh Phu, Izolyator partner in Vietnam,
- Le Anh Hien, Izolyator partner in Vietnam.

On behalf of the receiving side the visitors were welcomed by Mr. Le Van Diem, Deputy General Director and Mr. Nguyen Viet Anh, Head of Purchasing. In the result of the meeting:

Memorandum on Cooperation Signing



- EEMC confirmed its interest and 100% determination to develop long term cooperation with Izolyator: a directive from the Board of Directors addressed to the entire staff to support cooperation with Izolyator as a Russian manufacturer of high-voltage bushings,
- the partners signed a Memorandum on Cooperation on the territories of Viet-

- nam and Russia,
- the partners signed a contract for supply of the trial lot of 220 kV bushings for HoaBinh HPP



Dong Anh Electrical Equipment Corporation JSC (EEMC) was founded in 1971 on the basis of Dong Anh electrical equipment repair plant and manufacturing company Dong Anh. Today, EEMC is a leading power equipment OEM in Vietnam is South-Eastern Asia.

At the talks at EEMC



Certificate of Cooperation between EEMC and Izolyator

Our Companies Have a Lot in Common



This year our company celebrates 45 years since foundation. During these years we have accumulated a unique experience in design, manufacture, supply and maintenance of power equipment. We cooperate with the largest power grids, industrial companies that produce steel and cement. In the past years we worked for improved security of our country, perfecting production, and made a contribution to the processes of industrialization and modernization of the Republic of Vietnam.

Today Dong Anh Electrical Equipment Corporation JSC (EEMC) is one of the leading manufacturers of power equipment in Vietnam and South East Asia and the only Vietnam's OEM to produce 220 – 500 kV transformers which makes our country one out of ten nations in the world capable of successfully design and produce 500 kV transformers.

When we met Izolyator history we realized that our companies have a lot in common as we all strive to use our vast experience for the good of our countries and clients. Cooperation with Russian partners went in a constructive manner. Izolyator representatives provide us with detailed information on bushings with hard insulation and proved that they can compete with the OIP bushings. We are prepared to develop and strengthen business ties with Izolyator.

Le Van Diem,
Deputy General Director
Dong Anh Electrical Equipment Corporation JSC (EEMC)



Meeting at the Ministry of Industry and Trade of Vietnam



Meeting participants at the Ministry of Industry and Trade of Vietnam

At the end of 2015, Izolyator representatives visited the Ministry of Industry and Trade of Vietnam.

Our colleagues were honored to meet Mr. Le Tuan Phong, the Deputy General Director of Ministry of Industry and Trade General Directorate for Power Industry.

- the Ministry of Industry and Trade of Vietnam confirmed its interest to develop cooperation between Vietnam's grid EVN and Russia's FSK UES,
- the Ministry of Industry and Trade of Vietnam showed interest to commence a dialog with the state and federal authorities of Russian Federation and requested Izolyator's assistance in framing commu-

- nication between EVN and FSK UES, the Ministry of Industry and Trade of Vietnam also supported Izolyator's initiative to distribute information on company and its product advantages across power facilities of Vietnam,
- the Ministry of Industry and Trade of Vietnam emphasized importance and value of successful history of business relations between Izolyator and FSK UES, generation companies and power transformer OEMs in Russia and other countries,
- the Ministry of Industry and Trade of Vietnam agreed to provide assistance in setting up dialog between Izolyator and Vietnam's power industry players in gen-

eration, transmission and distribution, and transformer producers.

In the result of the talks, the Ministry of Industry and Trade of Vietnam and EVN company confirmed interest to commence a dialog between EVN and FSK UES and requested Izolyator's assistance in framing communication.

Both sides not only marked the friendly tone of the dialog and sincere openness to cooperation development but also emphasized confidence in the necessity and successful prospects of such cooperation.

We would like to thank Mr. Le Tuan Phong, Deputy General Director of the Power Industry Directorate of the Ministry

of Industry and Trade of Vietnam and his colleagues for a warm welcome!



Ministry of Industry and Trade (MOIT) is the government ministry in Vietnam responsible for the advancement, promotion, governance, regulation, management and growth of industry and trade in the following sectors of economy: machine building, metallurgy, power, renewable energy, oil and gas, chemical, industrial explosives, mining and mineral processing, FMCG, food industry, etc.

Talks at the Ministry of Industry and Trade of Vietnam

The Ministry of Industry and Trade of Vietnam Staff at the meeting with Izolyator representatives



HoaBinh HPP Visit

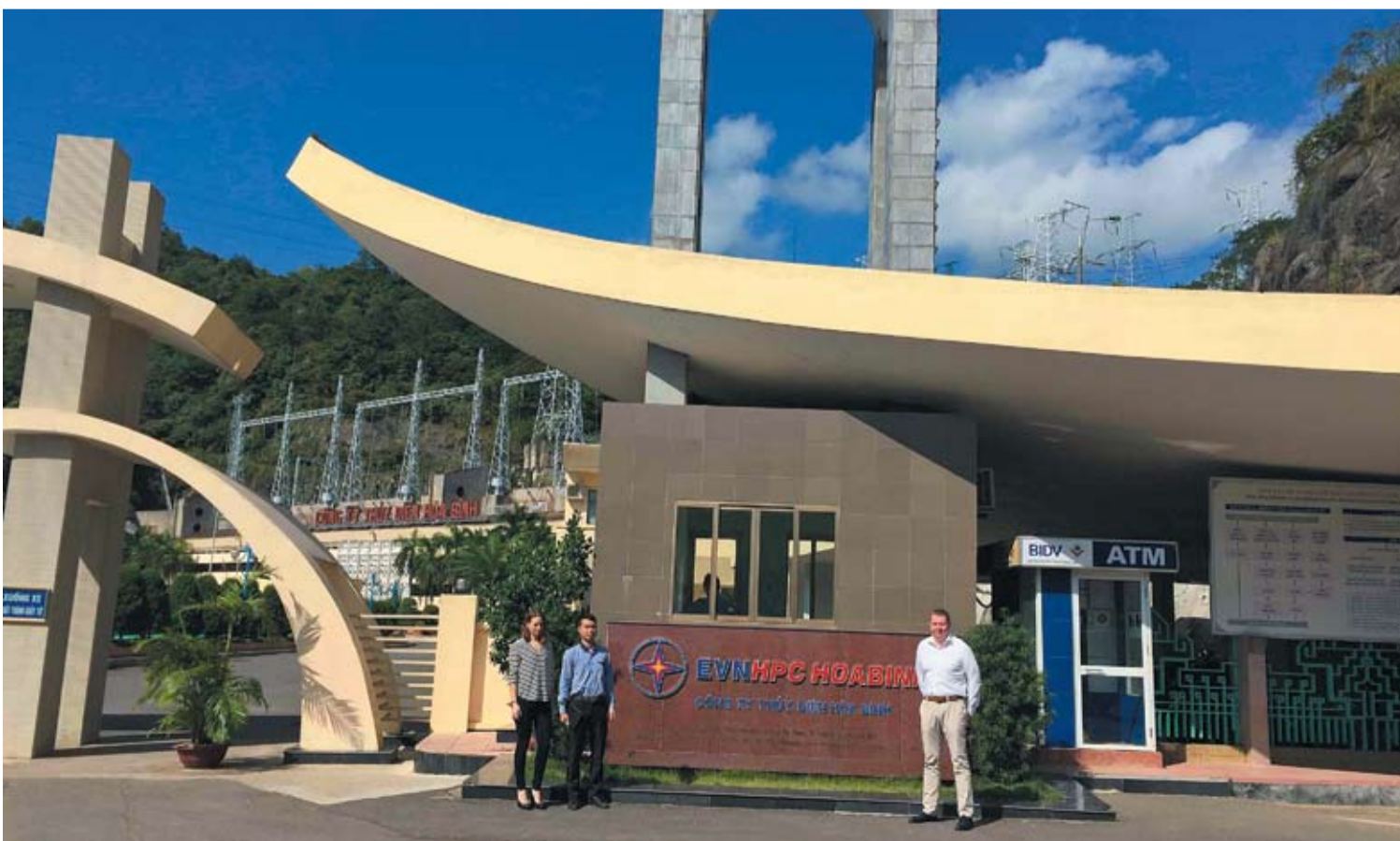


Meeting participants at HoaBinh HPP



HoaBinh Management at the meeting with Izolyator representatives

HoaBinh HPP visit



Izolyator representatives visited HPP Hoa Binh in Vietnam.

Izolyator representatives:
Ivan Panfilov, Natalia Mazova, Mac Thi Vinh Phu, Le Anh Hien.

On Hoa Binh side, the guests were welcomed by Nguyen Van Minh, Director and his colleagues.

Izolyator's OIP bushings have successfully operated at Hoa Binh HPP for over 25 years uninterruptedly, which was confirmed by the plant representatives at the meeting.

- Hoa Binh management agreed to provide technical information for operating bushings technical condition evaluation,
- Izolyator in turn would submit results of the data evaluation and diagnostics with modernization recommendations.



The Hoa Binh is owned by Vietnam Electricity corporation and produces up to 8160 GWh of electric power annually. The construction was financed and managed with the invitation of Russian investment and specialists; today the hydro station generates 27% of total electricity production in Vietnam.

Power Week in Shanghai

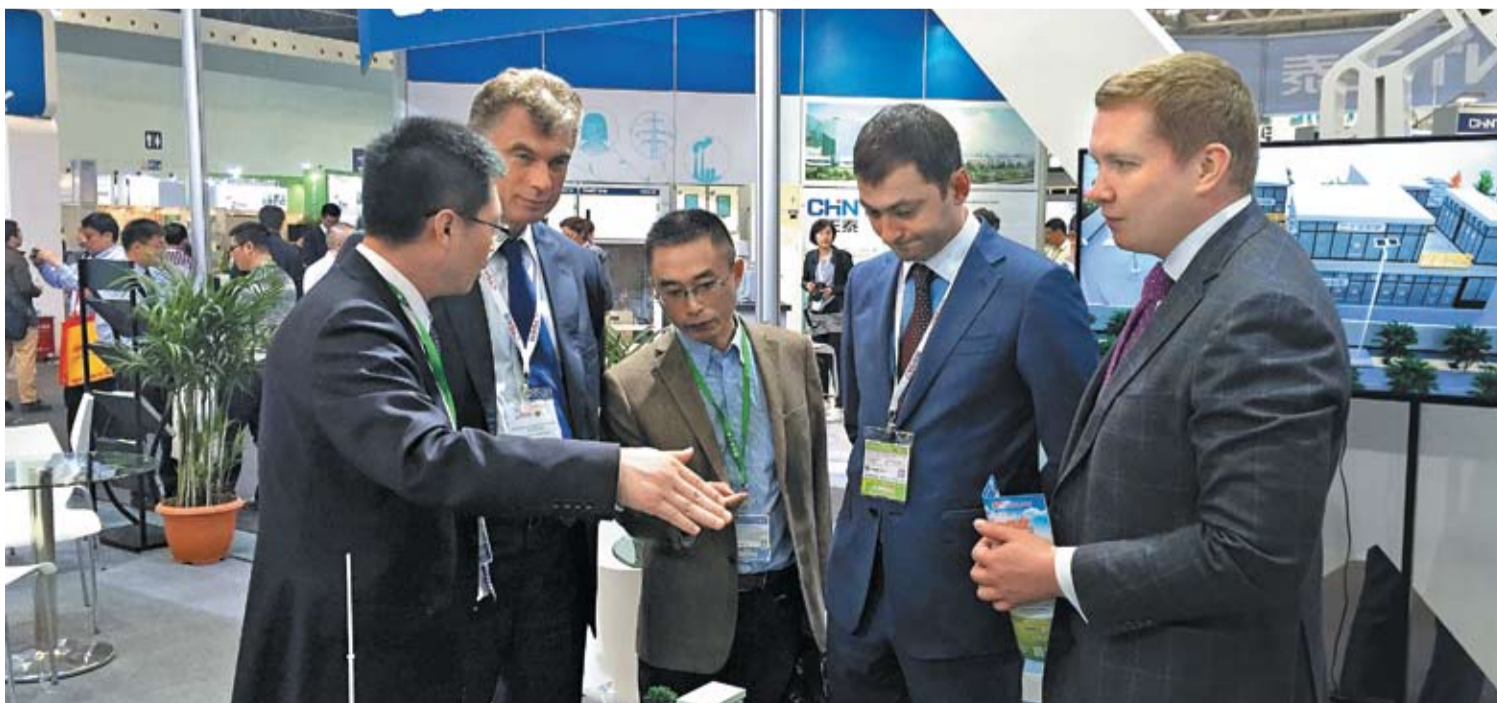


Russian delegation at EP Shanghai 2015



EP Shanghai 2015 Exposition

Meeting at an exponent's booth at EP Shanghai 2015



Izolator took part in Russia — China Power Week in Shanghai organized in order to strengthen positions on the global power markets and promote cooperation between Russia and China in the power industry, with the support from the Ministry of Industry and Trade of the Russian Federation.

The Russian delegation included representatives of all power industry segments: generation, transmission, distribution and original power equipment manufacture.

Ivan Panfilov, Commercial Director represented Izolator.

The central activity of the agenda of the Russia — China Power Week was a visit to Shanghai International Congress and Exhibition Center which hosted several specialized International power exhibitions on 14 — 16 October:

- EP Shanghai 2015 (the 10th International Power Exhibition of Equipment and Technologies),
- Electrical Shanghai 2015 (the 9th International Exhibition of Electrical Equipment) and three contributory international expositions:
 - EPA 2015 (International Exhibition of Automation Equipment and Technologies),
 - ECEP 2015 (Power Saving and Environmental Equipment and Technologies),
 - EPTMM 2015 (International Exhibition of Control and Instrumentation Technologies and Equipment).

EP Shanghai 2015 reconfirmed its leading status having occupied 35 000 square m with 900 stands of global exponents.

Among exhibitors are Chinese and foreign power companies, grid corporations, power plants, engineering companies, manufacturers of materials and equipment for power sector, design and research institutes, industrial end users from construction, railway, metallurgy and marine.

More than 30 conferences, symposia and presentations of business projects in electric power industry took place.

The list of guests of honor at the opening ceremony included representatives of the National Power Industry Administration, State Power Industry Supervision Bureau by the State Commission for Power Industry Regulation. Representatives of power grid companies, electrical engineering companies, industry associations, media, national envoys also attended the ceremony.

The exhibition attendance exceeded 35 000 specialists from all around the world. A special notice should be given to an active and professional work of the Russian delegation at the exhibition.

The business trip proved a success by the large amount of meetings with key companies, representatives of state bodies and technical visits to power equipment OEMs' facilities and enterprises.

In connection with development of bilateral relations with China that are building on aggravating political and economic ties between Russia and the West, and with the joint effort of the two countries' leaders, the Russian — Chinese cooperation reached the highest level in history.

Presently, China has entered a new stage of development which is characterized by all-round modern technique equipping and progressive technologies introduction.

The Russia — China Power Week is a unique event which helped achieve progress in a number of important strategic directions:

- development of Russian-Chinese cooperation,
- creation of optimal conditions for professional exchanges,



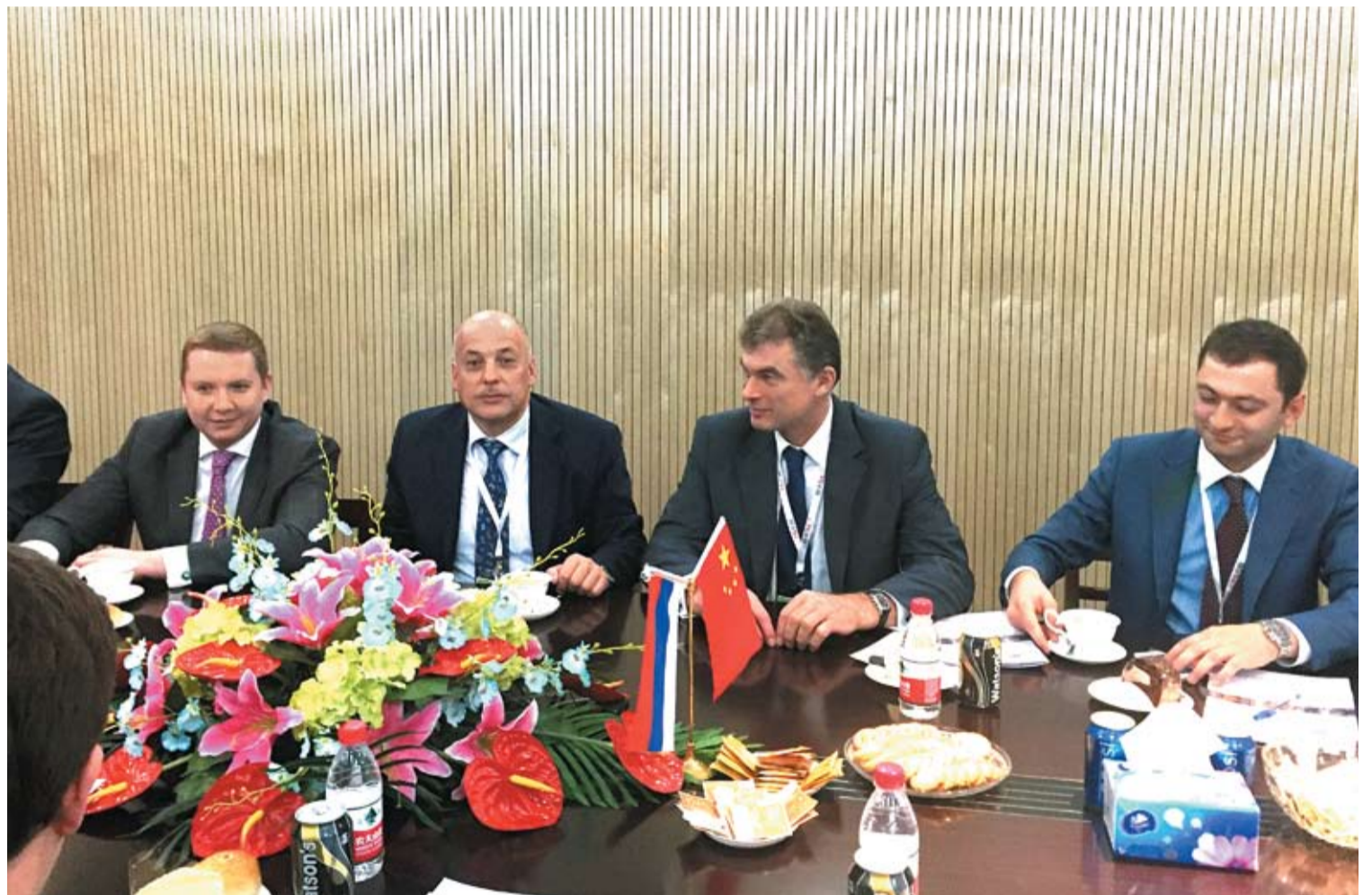
Visit to Shanghai Huaming Power Equipment Co., Ltd



EP Shanghai is an international power equipment and technology exhibition with leading position in Asia. It opens in turns in Beijing and Shanghai starting from 1986. EP Shanghai is one of the widely known exhibitions in China, with its exposition including the complete range of technologies, equipment and materials used in production and transmission of electric power. EP Shanghai opens on an annual basis.

- business ties set up and prospecting new contacts,
- identification of equipment and materials suppliers,
- sharing experience with colleagues from other countries in the fields of electric power and equipment manufacture,
- study of the Russian and foreign power industries,
- facilitation of foreign investment and innovations invitation to Russian industry
- efficient technologies and equipment introduction to the Russian market,
- Russian Power Industry branding on the global market.

We would like to thank the organizers of Russia — China Power Week in Shanghai for a highly topical program and opportunities for business talks with foreign partners! We appreciate very much the high level of the event organization!



Meeting with Chinese partners



Delegation under the auspices of the Ministry of Energy of the Russian Federation in Shanghai



Visit to a Chinese plant



DMITRY ABBAKUMOV

*Deputy Commercial Director
at Izolyator*

In 2015 Izolyator fulfilled several important and large volume orders with the peak coming in Q3. To meet the procurement deadlines we maintained regular contacts with our old partners: Polish maker of technical porcelain Zapel, leading manufacturer of flat gaskets and adjustment plates TT Gaskets, Finnish ENPAY.

I would like to thank all Izolyator suppliers for timely shipments, commercial flexibility and technical support in 2015, and readiness to continue beneficial cooperation in future.

Following the import substitution course set by the Russian Government we began search of suppliers of cast and depressed articles, non-ferrous mill products among domestic manufacturers. In 2015 we met with our old partner Uralizolyator, leading Russian producer of electric porcelain.

In the new year, due to expansion of Izolyator on global markets and order volume increase we will continue to perfect materials and parts procurement system, negotiate terms with our supplies. With that done we can ensure timely supply of high quality Izolyator products to our clients and partners.

In the first quarter of 2016, Izolyator had a series of talks with our suppliers' representatives:

Meeting with Alfa-Metall, aluminum pipes supplier and KraMZ Ltd on aluminum pipes quality issues;

Huntsman (epoxy resin and isomethyl): meeting and talks with Konstantin Ilyichevsky, Sales manager;

OLIN (Germany) became a global leader in epoxy products after acquiring Epoxy business from DOW Chemical in 2015. We held a meeting with OLIN distributor in Russia — NEO Chemical jointly with OLIN representative Dmitry Beloborodov. On NEO Chemical side, Alexey Naduev, Commercial Director and Julia Tashkinova, Head of Composite Materials Group attended;

Visit to DMZ n.a. Fedorov JSC, supplier of depressed articles;

Uralizolyator General Director, Alexey Tumakov's visit to our plant to discuss cooperation program in 2016 in regard to porcelain products.

We received a shipment of sealing gaskets made of TD material, supplier — TT Gaskets, Finland, a shipment of brown porcelain insulators made by ELIZ Ltd, Perm, Russia.

Elektroporcelan Louny a.s. Visit

Izolyator representatives met old partners in Elektroporcelan Louny a.s. in Prague
Dmitry Abbakumov, Deputy Commercial

Director and Vladimir Romanov, Head of Purchasing at Izolyator visited Elektroporcelan Louny a.s. in Czech Republic.

Irzi Blaga, Commercial Director and Anna Trubetskaya, Sales Specialist welcomed the visitors.

Izolyator representatives visited production facilities of Elektroporcelan Louny a.s. in Louny and Merklin. The sides agreed shipment schedule till the end of 2015 and discussed production of porcelain insulators for Izolyator's HV bushings of new types.

We would like to thank Elektroporcelan Louny a.s. for invitation and warm welcome.



*Dmitry Abbakumov (L) and Irzi Blaga
at Elektroporcelan Louny a.s.*



The Louny plant opened in 1950. Presently the plant produces reinforced and non-reinforced insulators of low and middle voltage classes. The Merklin plant was founded in 1880. Today porcelain knobs for ultra-high voltage are the main product in Merklin. The plant is fit to produce insulators up to 500 kV voltage class and 5 000 mm tall.

Expanding Cooperation with Uralizolyator

Alexey Tumakov, General Director at Kamyshlov plant Uralizolyator Ltd. visited Izolyator plant.

On Izolyator side, the guest was received by:

- Alexander Slavinsky, Chairman of the Board of Directors;
- Dmitry Abbakumov, Vladimir Romanov.

The hosts arranged for a plant tour. The sides discussed production and commercial issues of cooperation, setting joint objectives and 2016 agreeing to develop their traditional and successful cooperation further.

*At the Test Center of Izolyator plant (L-R) Dmitry Abbakumov,
Alexey Tumakov and Vladimir Romanov*



Kamyshlov Plant Uralizolyator Ltd. enters the industrial arm of Yava managing company. Kamyshlov Plant Uralizolyator is one of the largest Russian manufacturers of electric porcelain supplying its products to the the leading HV OEMs delivering equipment to transmission and distribution facilities of the Federal Grid Company, Russian Railways and the CIS countries. The key product of Kamyshlov Plant Uralizolyator is electric porcelain: cemented and non-cemented, high and low voltage, as well as heat resistant insulators for various applications. Cordierite insulation of Uralizolyator production is supplied for the needs of the nuclear power industry.



Dmitry Abbakumov and Vladimir Romanov visited Uralizolyator Ltd in Kamyshlov.

They were received by Alexey Tumanov, General Director and his deputies.

The partners discussed Izolyator's orders' progress, financial and commercial issues. They agreed to expand the product range of porcelain knobs for Izolyator high-voltage bushings.

Soon Uralizolyator paid a return visit by sending Alexey Churkin, Chief Engineer, Irina Kuvaeva, Chief Process Engineer and Larisa Buldakova, Head of Technical Control Department to Izolyator.

On Izolyator side, the visitors were received by Vladimir Romanov and Ekaterina Kupkina, Lead specialist on porcelain who acquainted the guests with HV bushings manufacture with the porcelain external insulation.

Design
and develop
innovative
PRODUCTS



At the assembly shop of Izolyator plant (L-R): Irina Kuvaeva, Ekaterina Kupkina, Alexey Churkin and Larisa Buldakova

Photo from official website of Kamyshlov Plant Uralizolyator Ltd



Weidmann Electrical Technology AG Meeting

Werner Handelsmann, Vice President Sales/ Marketing and SCM EA and Mikhail Boyarshin, Head of Representative office in CIS visited Izolyator plant.

On Izolyator side, the guests were received by

WEIDMANN

Weidmann is known as the global leader in electrical insulation for transformer manufacturers and companies operating transformers. Weidmann's core competence is the development and production of tailor-made solutions for cellulose based insulation systems. We also offer expertise and products for high-temperature applications like locomotive and wind turbine transformers. Weidmann's Research & Development has always been a key driver for our leading position of Board, Component and Paper manufacturing. Weidmann's deep and broad know-how concerning material properties, application needs, processing methods and failure analysis allows us to develop best-fit Weidmann solutions for enhanced transformer performance and reduced total cost of ownership.



At the Test Center at Izolyator plant, left to right: Werner Handelsmann, Dmitry Abbakumov and Ivan Boyarshin

- Alexander Slavinsky, Chairman of the Board of Directors,
- Ivan Panfilov, Commercial Director welcomed the visitors,
- Dmitry Abbakumov, Deputy Commercial Director.

The hosts offered a tour of the plant to acquaint the guests with the modern technologies of production of high-voltage RIP bushings. The partners discussed commercial issues and cooperation plan for 2016.

STRIVE
FOR CONSTANT
product
improvement

Wacker Chemie AG Representative's Visit

Mikhail Spirin, CIS Key Account Manager at Wacker Chemie AG visited Izolyator plant.

On Izolyator side the visitor was received by Dmitry Abbakumov, Deputy Commercial Director and Vladimir Romanov, Head of Procurement.

The sides summarized results from year to date and spoke on the plans of future cooperation development.

WACKER

WACKER is an independent and globally active company. We are a leader in our core fields, which include semiconductors, polysilicon, polymers, silicones and specialty chemicals. Established in Burghausen in 1914, the company has 25 production sites and generates over 87 percent of sales outside Germany with the Group total sales of €5,3 billion in 2015.

110 kV Izolyator bushings with RIP insulation



Composite Expo 2016



Dmitry Abbakumov at Composite-Expo 2016

Dmitry Abbakumov, Deputy Commercial Director at Izolyator visited the 9th Specialized International Exhibition Composite Expo 2016 in Crocus Expo Exhibition Center in Moscow. 123 companies from 19 countries took part in the exhibition that attracted 9000 visitors.

During the work at the exhibition, Izolyator representative made a number of interesting contacts with manufacturers and suppliers identifying new business prospects, such as for instance:

- Huntsman International LLC: Konstantin Ilyichevsky, Sales Representative;
- OLIN Corporation: Dmitry Beloborodov, Representative;

- NEO Chemical, OLIN Corp. distributor: Alexey Naduev, Commercial Director,
- Julia Tashkinova, Composite Materials Group Head.

We appreciate Composite-Expo 2016 organizers for the high level of the event execution!



Composite-Expo is a unique exhibition event in Russia and is a platform for development and introduction of composite technologies and materials in different branches of industry.

Promsvyazbank – Our Strategic Partner

Corporate sales representatives of Promsvyazbank visited Izolyator plant:

- Olga Chebaevskaya, Director, Corporate Sales,
- Andrey Toropov, Deputy Director, Corporate Sales, Head of Department
- Alexey Sidelnikov, Corporate Sales Group Leader.
- The visitors were received by Mikhail Kagan, CFO and his deputy Tatyana Kravets.

The sides shared information on the Russian economy development and corporate banking services discussing nearest and long term plans of cooperation development with focus on banking support with power markets of India, South East Asia, Middle East and other regions entrance.

Victor Kiryukhin, Head of Design Bureau, organized a tour of the production facility for the guests who marked an innovative character of the enterprise's products and a high level of technological infrastructure meeting the best world's standards.

Promsvyazbank is one of strategic partners to Izolyator. We highly appreciate our cooperation and intend to develop it on a long term basis.

ПИС At the Test Center of Izolyator (L-R): Mikhail Kagan, Olga Chebaevskaya, Alexey Sidelnikov, Tatyana Kravets, Andrey Toropov and Victor Kiryukhin



Promsvyazbank (PSB) is a top-3 private bank in Russia and is a universal commercial bank, whose history totals 20 years. The Banker Magazine includes Promsvyazbank in 500 largest banks of the world by the size of own capital. PSB total assets exceed 1.2 trillion rubles. The bank was recognized one of 10 critically important financial institutions by the Central Bank of Russia.



At the Test Center of Izolyator (L-R): Mikhail Kagan, Olga Chebaevskaya, Alexey Sidelnikov, Tatyana Kravets, Andrey Toropov and Victor Kiryukhin

Visit of President of Commercial Indo Bank

Mr. Bhatti, President at Commercial Indo Bank LLC visited Izolyator.

The guest was received by Mikhail Kagan, CFO and Andrey Shornikov, International BDM.

The sides discussed the market of banking services and cooperation opportunities.

The hosts arranged for a tour of the plant upon completion of which S.L. Bhatti highly appreciated the innovative, technological and production potential of the plant as pertains a leading global manufacturer.

Full range
OF HV BUSHINGS
12–1200 kV
available



Commercial Indo Bank LLC was founded in 2003 under the name Commercial Bank of India. In 2013, the bank was renamed as Commercial Indo Bank LLC. The bank's stakeholders are State Bank of India (60%) and Canara Bank (40%). Commercial Indo Bank is part of the banking group of the State Bank of India.



At the test center at Izolyator: S.L. Bhatti (R), Mikhail Kagan (2nd R), Andrey Shornikov (L)

Annual Address Of The Moscow Region Governor To Residents



Annual Address Of The Moscow Region Governor To Residents

Andrey Vorobyov speaking from the rostrum at The House of The Government of The Moscow Region (photo from the website of the Moscow Region Government)

Sergey Moiseev, General Director at Izolyator attended a meeting with the Governor of the Moscow Region delivering an Annual Address to the public, on Istra municipal district delegation.

The Moscow Region Government House venue gathered a representative audience of the Moscow Region Government members, Parliament members, representatives of local government bodies, law-enforcement bodies, denomination leaders, The Public Chamber of the Moscow Region leaders, local municipal public chambers representatives, people of art and cultural workers, entrepreneurs and mass media.

Andrey Dunaev, Head of Administration of Istra Municipal District headed the delegation that also included Olga Popova, General Director at Istra Chamber of Commerce and Industry Union and Sergey Popov, General Director at Mansurovskoe Quarry CJSC.



Istra Municipal District delegation (L-R): Sergey Moiseev, Sergey Popov, Olga Popova and Andrey Dunaev

Izolyator Is Member of the Union of CCI of Istra Municipal District and CCI RF

On 30 November 2015 Izolyator was admitted as a member of the Union of Chamber of Commerce and Industry of Istra Municipal District of Moscow Region and Chamber of Commerce and Industry of the Russian Federation.



Chamber of Commerce and Industry of Russian Federation is a non-state non-profit organization uniting its members for the purposes and objectives as defined by the law On Chambers of Commerce and Industry in Russian Federation. Chamber of Commerce and Industry of Russian Federation represents interests of small, medium and large business in all sectors of entrepreneurial activity: industry, trade, agriculture, finance, services. Chamber of Commerce and Industry of Russian Federation promotes economy of Russian Federation, its integration into global system, achievement of favorable conditions for development of all kinds of entrepreneurial activity.



Istra Chamber of Commerce and Industry Sitting

Izolyator received a visiting session of Istra Chamber of Commerce and Industry (Union of Istra Municipal District).

Izolyator is a member company of the Union of Istra Chamber of Commerce and Industry.

The following visitors attended the meeting:

- Andrey Dunaev, Head of Istra Municipal District Administration,
- Georgy Savchenko, Head of Pavlo-Slobodskoe Settlement Administration,
- Alexander Lunkin, President at Istra Chamber of Commerce and Industry Union,
- Olga Popova, General Director at Istra Chamber of Commerce and Industry Union,

Top managers of the union member companies operating on the territory of Istra municipal district.

Alexander Slavinsky, Chairman of the Board of Directors and Sergey Moiseev, General Director represented Izolyator in the sitting.



Istra Chamber of Commerce and Industry Union Sitting (L-R): Alexander Slavinsky, Andrey Dunaev, Georgy Savchenko, Alexander Lunkin and Olga Popova



Attendees of the visiting session of the "Istra Chamber of Commerce and Industry" Union at the Test Center of Izolyator plant

The hosts arranged for a plant tour familiarizing the guests with the manufacture and testing of high-voltage bushings. The visitors marked a high technological level and production scale of the facility.

One of the agenda's key issues was election of delegates to the Chamber of Industry and Trade of Russian Federation.



Training Program for Izolyator Staff

From 28 September till 16 November 2015, Izolyator organized and successfully completed personnel training on the program "Professional training for managers and specialists in power industry". The purpose of the training is professional development of the team members.

The training was done both by invited highly qualified instructors and professors from Moscow Power Institute and by leading specialists of Izolyator. The program included theoretical part: electrical engineering, electric power industry basics, power equipment, insulation materials, high-voltage bushings.

The program included an excursion to Pavlo-Slobodkoy department of Istra region of Western electric mains of Moscow United Power Grid Company (MOESK JSC).

At the end of the program the trainees took examination with receipt of a personal certificate. Alexander Slavinsky chaired the examination board.

We would like to thank National Research University Moscow Power Institute for assistance in training organization of our colleagues!

Alexander Slavinsky is receiving exam



Excursion to Pavlo-Slobodskoy department of MOESK



Commercial Division Reports

Izolyator's sales team made an annual report dedicated to the 2015 sales plan achievement and 2016 targets.

Sales managers presented revenue figures and activities reports and set 2016 targets to the top management in presence of Alexander Slavinsky, Chairman of the Board of Directors.

This meeting provides the basis for consistent and systematic work to strengthen and develop long term cooperation with all Izolyator partner companies.

Natalia Mazova, International Business Development Manager making a report



We
are a professional
team



The audience won't miss anything important



The top management seems satisfied. At the foreground (L-R): Ivan Panfilov, Dmitry Abbakumov and Alexander Shornikov



Our eyes are fixed on the future prospects



Optimism is a characteristic of our team, (L-R): Oleg Bakulin, Alexander Savinov and Maxim Osipov

SALES DEPARTMENT OF IZOLYATOR COMPANY

Our mission is to create basis for stable and sustainable power supply. We can achieve this goal only with common effort in close cooperation, joint creation and development. That is why we value dialog with you so highly as it is a starting point towards success in our common goal.



IVAN PANFILOV

*Commercial Director
1st Deputy General Director*



OLEG BAKULIN

*Director on
Partner Relations*

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RIP insulated bushings advantages

Internal hard RIP insulation

(quick info)

Resin impregnated paper — paper saturated with resin — is the main construction element of a HV bushing. It is a core which is formed by insulating crepe paper winding on the central tube with subsequent thermal vacuum dryout and a special epoxide compound saturation.

After drying out under pressure, any occluded gas is ousted from insulation. In the winding process, condenser plates are used to level electric field.

■ **Reliability**

■ **Security**

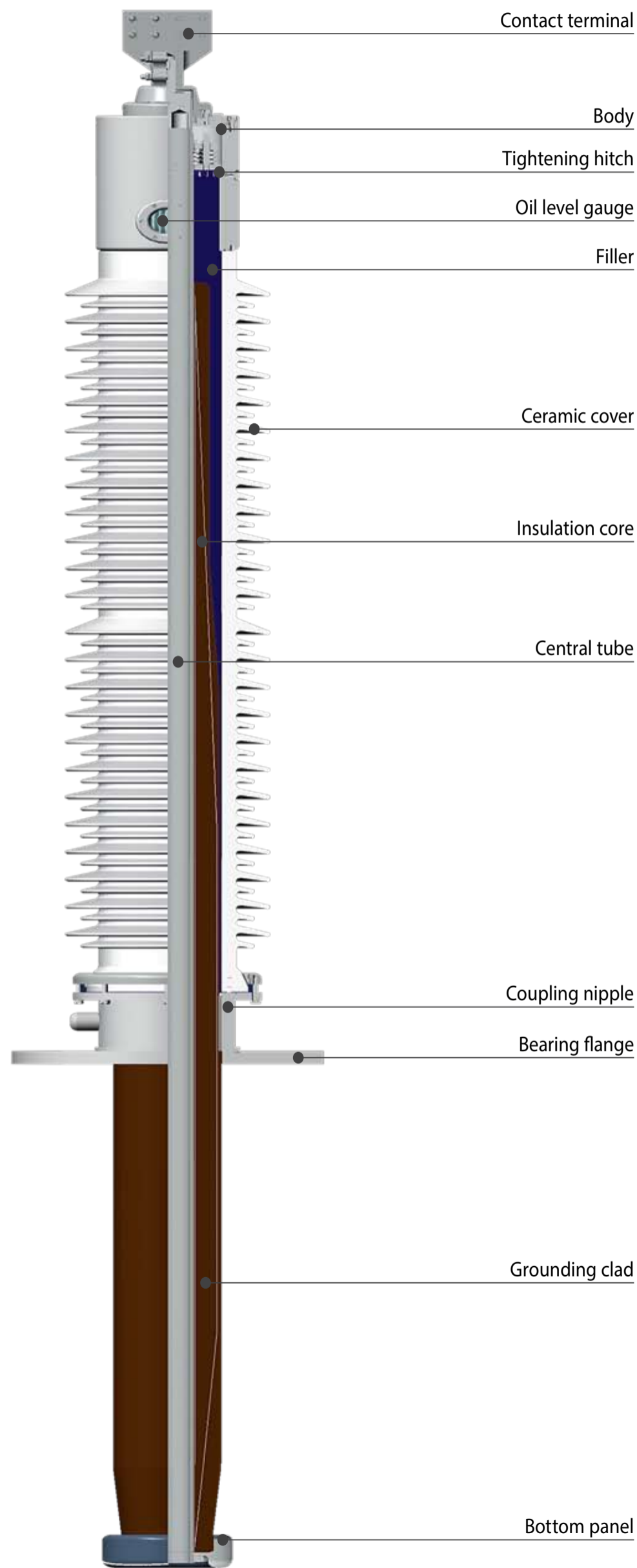
■ **Advanced design**

■ **Durability**

■ **Ecologically friendly**

■ **Service free**

■ **Ease of operation**



RIP insulated bushing in section