

IZOLYATOR PLANT. CENTURY-LONG EXPERIENCE AND INNOVATIVE TECHNOLOGIES FOR POWER INDUSTRY

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MILESTONES IN THE COMPANY HISTORY

The history of Izolyator plant is inseparably associated with origin and development of high-voltage bushings into a self-sufficient sector in power equipment production in Russia.

In 2016 the biggest Russian maker of high-voltage bushings Izolyator plant celebrates its 120th anniversary. During this period of time, the company has

acquired unique experience in development, manufacture and operation of high-voltage bushings of various voltages and applications.

The plant was founded on 6 June 1896 in Vsehsviatskoe village on the outskirts of Moscow, and, in 1905, the products that it made won a gold medal at the Brussels International Exhibition.

The revolution nationalized the plant making it one of the leaders in GOELRO plan fulfillment for bushings and insulating materials production.

The plant faced a challenging objective to start porcelain bushings production for high-voltage transmission lines. In 1922-1924, the design bureau of the plant introduced the first 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.



Izolyator Plant is a leading scientific and technical partner of RNC CIGRE and base organization of subcommittee D1 RNC CIGRE

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

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

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

Those milestones are only a small part of achievements that mark the bright history of the company. Nowadays the plant keeps the glorious traditions of the past with unstopping growth and development.

PROGRAMMING THE PROGRESS

Today, Izolyator is a modern advanced technology enterprise, fitted-out with the latest equipment, able to design, manufacture and test bushings of alternating and direct current in the 12–1200 kV range.

The manufacturing facility allows making of 12,000 high-voltage bushings a year.

The plant facilities constantly see new machinery added, existing equipment upgraded, the level of process automation raised. At least 10% of the plant’s annual turnover is directed to R&D funding and new materials procurement. The plant

FOR THE GOOD OF THE POWER INDUSTRY OF THE WHOLE WORLD



Chairman of the Board of Directors of Massa Ltd – Izolyator plant, D1 Subcommittee RNC CIGRE Chairman, Doctor of Engineering Science Alexander Slavinsky.

— One of the most important events of the previous years for Izolyator plant was receipt of status of the leading scientific and technical partner to the Russian National Committee of the International Council on Large Electric Systems (Conseil International des Grands Réseaux Électriques — CIGRE). This is the biggest international nongovernmental and nonprofit organization in the electric power industry.

Today the D1 Subcommittee “Materials and development of new test methods and means of diagnostics” in the RNC CIGRE is being formed at Izolyator plant serving as research base company. Individual and society members of RNC CIGRE with relevant research track record are expected to join it.

The Subcommittee plans organization of expert groups in the following fields: “Insulating liquids in dielectric systems”, “Solid dielectrics”, “Insulating systems diagnostics”, “Insulators, high-voltage bushings”. In the nearest future the Subcommittee will organize all-round information activities and start scientific and technical works on its topics for the power industry professional community and manufacturers of power equipment.

Cooperation with RNC CIGRE would allow Izolyator taking its work to a whole new level in the interest of all market participants and development of Russian power industry altogether.



Participants of the 420 kV RIP bushings tests at CESI (Italy)

expands its product range at all times by developing new designs of high-voltage bushings and modernizing product designs and production.

All implemented innovations adhere to the general policy that the equip-

ment and technologies must comply with the highest world standards and quality requirements.

In 2002–2004, Izolyator created an original RIP-insulation technology in cooperation with the leading Russian scientific centers and applied

it in mass production. Before that time, RIP-insulated bushings were assembled with imported insulation cores.

Mass produced RIP-insulated high-voltage bushings are highly reliable and have a long operation life.



Electric tests of a 1150 kV bushing at Izolyator

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 750 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.

Thus, thanks to an active and consistent technical policy of Izolyator, Russia can be proud to possess the largest operational experience of high-voltage bushings with RIP technology of various applications.

INTERNATIONAL COOPERATION

Over the years of reliable work, Izolyator has won trust from consumers both in Russia and abroad. Products of the plant are exported to more than 30 countries of the world.

In 2015 Izolyator became the first in the world supplier of high-voltage RIP bushings to Power Grid Corporation of India Limited (PowerGrid).

The power markets of India and China are particularly attractive for Russian manufacturers of electrical engineering products as those countries are very similar to Russia in terms of power grids 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 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. And here we can see clear cooperation prospects, for today, Izolyator is an official supplier to the leading global power OEMs: Siemens, Alstom, Crompton Greaves, Zaporozhtransformator. In June 2016, on the occasion of the 120th anniversary of the plant, Izolyator organized an international conference in Italy where representatives of the leading global grid operators and power engineering companies shared unique experience of design, production, operation and maintenance of high-voltage RIP bushings and discussed issues of present interest in power generation, transmission and distribution.

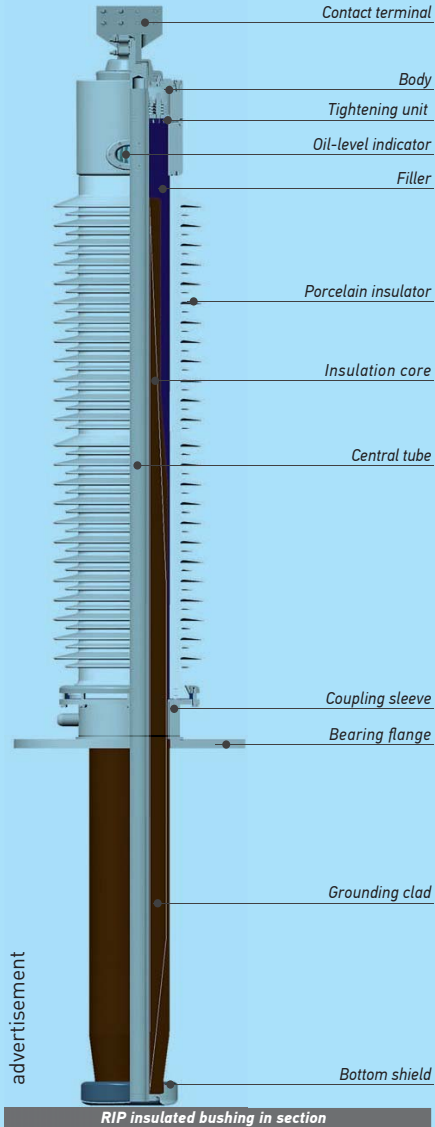
Within the framework of the conference, Izolyator carried out a series of successful seismic tests of 420 kV high-voltage RIP bushings designed and manufactured under the order from the Indian company PowerGrid. The 5-day tests were done at one of the world's leading electrical engineering test centers CESI in Italy. Experts from the state power grid companies of India and Italy and representatives of the leading power equipment OEMs of France, Germany and Italy took part in the tests.

Izolyator's key priority for 2016 and coming years remains expansion on European and Asian markets and the strive to be a global leader in development, manufacture and implementation of modern technologies in power industry.

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