WE CREATE THE FOUNDATION FOR A SUSTAINABLE POWER SUPPLY OF SOCIETY AND EVERY MAN

IZOLYATOR

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

Corporate Edition Izolyator

www.mosizolyator.com

Special Edition No. 2

June 2015

INDIA – RUSSIA: FIRST RESULTS OF COOPERATION

President Vladimir Putin and Prime Minister Narendra Modi, New Deli, December 2014

Izolyator is the first supplier of RIP insulated bushings to India p.2

FGC UES: Together with PowerGrid we work for the perspective! p.18

2015: way to success p.4

Izolyator is the first supplier of

Delhi Transco Ltd. site at Bamnoli, Delhi: Standing from left: Mr. Andrey Shornikov/Area sales Manager/Izolyator Company, Dr. Ashok Singh/Chief Representative of Izolyator Company in India, Mr. Ivan Panfilov/Commercial Director of Izolyator Comapny & Mr. Mashinistov Dmitrii/Chief of Customer care Services, Izolyator Company

RIP insulated bushings for voltage classes 25, 252 and 420 kV have been installed on 500 MVA Crompton Greaves transformer. 400 kV Bumnauli substation of Delhi Transco Limited company part of PowerGrid Corporation of India Ltd. Delhi, India.

RIP insulated bushings to India

From Left Standing: Mr. Dmitrii Mashinistov/Chief of Customer care Services, Izolyator Company; Mr. Ajay Kumar Vaish/General Manager, CMG/ Power Grid of India; Mr. Ivan Panfilov/ Commercial Director of Izolyator Comapny; Mr. I.S. Jha/Director of Projects/Power Grid of India; Mr. Andrey Shornikov/Area sales Manager/Izolyator Company; Dr. Ashok Singh/Chief Representative of Izolyator Company in India

Standing from left: Mr.Ajay Kumar Vaish/General Manager, CMG, PGCIL, Mr. I.S. Jha/Director of Projects/Power Grid of India; Mr. Ivan Panfilov/ Commercial Director of Izolyator Comapny. and Mr. Andrey Shornikov/Area sales Manager/ Izolyator Company

Standing from left : Mr. Ivan Panfilov/ Commercial Director of Izolyator Comapny. Mr. Anil Jain/Executive Director/Corporate Monitoring/PGCIL; Dr. Ashok Singh/Chief Representative of Izolyator Company in India; Mr. Andrey Shornikov/Area sales Manager/Izolyator Company and Mr. Mashinistov Dmitrii/ Chief of Customer care Services, Izolyator Company

Picture of Delhi Transco Ltd. 420 kV substation , Bamnoli, Delhi

Standing from Left: Dr. Ashok Singh/Chief Representative of Izolyator Company in India; Mr. Andrey Shornikov/Area sales Manager/Izolyator Company, Mr. Adeeb Alam Khan/Crompton Greaves Ltd. & Mr. Pavel V. Kiryukhin/Deputy Chief of Designer/ Izolyator Company

Standing from Left: Dr. Ashok Singh/Chief Representative of Izolyator Company in India & Mr. Pavel V. Kiryukhin/Deputy Chief of Designer/Izolyator Company

Izolyator would like to thank everyone who participated in preparation and commissioning of HV bushings. Our special thanks to Mr I. S. Jha, Projects Director of PowerGrid, Mr Ajai Kumar Vaish, General Manager (CMG), Mr Anil Jain, Executive Director (Corporate Monitoring).

2015: way to success

The first half of 2015 for Izolyator was marked by reaping what was seeded in 2014: Izolyator was named winner in the tender for supply of HV RIP insulated bushings for a new Crompton Greaves transformer ordered by PowerGrid Corporation of India Ltd.

The transformer will be installed in the capital of India, Delhi and put into operation in June 2015. In November 2014, PowerGrid made a decision to switch to RIP-insulated bushings on all power facilities, transformers, ETLs. Such decision on usage of modern and highly reliable equipment reconfirms PowerGrid's intention to develop an advanced and highly reliable system of power transmission and distribution in India.

Ivan Panfilov
Commercial Director, 1st Deputy General Director, Izolyator

Power Grid Corporation of India Ltd

(quick info)

The State company in transmission and distribution of electric power in India - Power Grid Corporation of India Ltd (PowerGrid) – is one of the largest Grid corporations in the world structurally related to the Energy Ministry of India. The company plays a key role in power supply to all regions in the country and development of power sector in India by participating in the most important state programs.

At PowerGrid, left to right: Ivan Panfilov, Commercial Director of Izolyator, Andrey Shornikov, Area Sales Manager of Izolyator, Dr. Ashok Singh, Official Izolyator Representative in India

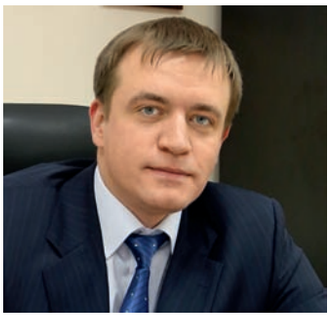
Standing from left: Mr.Ajay Kumar Vaish/General Manager, CMG, PowerGrid, Mr. I.S. Jha/Director of Projects/Power Grid of India; Mr. Ivan Panfilov/ Commercial Director of Izolyator Comapny. and Mr. Andrey Shornikov/Area sales Manager/Izolyator Company

INDIA — RUSSIA: THE FIRST RESULTS OF COOPERATION

From Left Standing: Mr. Dmitrii Mashinistov/Chief of Customer care Services, Izolyator Company; Mr. Ajay Kumar Vaish/General Manager, CMG/ Power Grid of India; Mr. Ivan Panfilov/ Commercial Director of Izolyator Comapny; Mr. I.S. Jha/Director of Projects/Power Grid of India; Mr. Andrey Shornikov/Area sales Manager/Izolyator Company; Dr. Ashok Singh/Chief Representative of Izolyator Company in India

Seating from Left: Mr. Richik Manas Das/Senior Design Engineer/Engg.-SS/PowerGrid, Ms. Dixit Anagha/General Manager/Emco; Mr. Ivan Panfilov/ Commercial Director of Izolyator Comapny and Mr. Andrey Shornikov/Area sales Manager/Izolyator Company

INDIA — RUSSIA: THE FIRST RESULTS OF COOPERATION



In 2014, Izolyator has completed a large amount of work in regard to exchanging experience with PowerGrid and major HV transformer manufacturers in India.

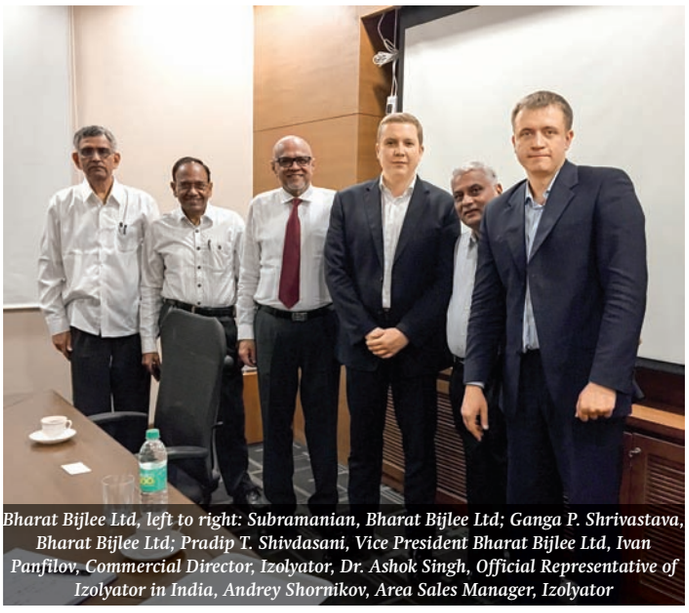
At present, HV bushings with RIP insulation are already the main product to be normally consumed by generation, transmission and distribution facilities. Izolyator together with FSK UES stepped forward to initiate transition to this technology and today we can announce that Russia is one of the few countries that implemented RIP technology and received experience of hard insulation bushings application on all types of power facilities.

Russia and India's experience in power transmission and distribution and also transitional experience of RIP insulated bushings application were discussed at the headquarter of PowerGrid in Delhi during FSK UES delegation visit in December 2014 (please refer to edition #2/2014 for details at http://www. mosizolyator.ru/press-centre/ newspaper/)

Andrey Shornikov
Area Sales Manager at Izolyator

Crompton Greaves, left to right: Pravin Dongarwar, Crompton Greaves, Ivan Panfilov, Commercial Director, Izolyator, Andrey Shornikov, Area Sales Manager, Izolyator, Dr. Ashok Singh, Official Representative of Izolyator in India, Lakshmi Narayana Jarugula, Crompton Greaves

EMCO, left to right: Dr. Ashok Singh, Official Representative of Izolyator in India, Anagha Dixit, EMCO, Andrey Shornikov, Area Sales Manager, Izolyator, Ivan Panfilov, Commercial Director, Izolyator, Eknath Badgujar



Bharat Bijlee Ltd, left to right: Subramanian, Bharat Bijlee Ltd; Ganga P. Shrivastava, Bharat Bijlee Ltd; Pradip T. Shivdasani, Vice President Bharat Bijlee Ltd, Ivan Panfilov, Commercial Director, Izolyator, Dr. Ashok Singh, Official Representative of Izolyator in India, Andrey Shornikov, Area Sales Manager, Izolyator

Crompton Greaves
(quick info)

Crompton Greaves is a conglomerate of engineering companies with a 2 bln USD turnover offering an impressive product range, solutions and services: from powerful industrial equipment to consumer goods and household appliances targeted at satisfaction of a vast specter of needs.

EMCO Limited
(quick info)

Founded in 1964, EMCO became one of the leading Indian suppliers of solutions and equipment in the 765 kV/±800 kV range for enterprises in generation, transmission, distribution of electric power and heavy industry. With a network of 15 office and 5 modern plants, the company supplies its solutions and equipment to the clients among which there are power and utility companies, industrial sector and more than 50 countries in the world.

Bharat Bijlee Limited
(quick info)

Bharat Bijlee is a major manufacturer of power equipment in India. This company with its diversified product range and developed organizational structure is represented by such types of equipment as transformers, electric motors, elevator systems, drives and automation. The plant, located in Airoli (Navi Mumbai), occupies the area of 193 000 sq m with 50 000 given for the main production.

Siemens

(quick info)

Siemens is a global powerhouse focusing on the areas of electrification, automation and digitalization. One of the world's largest producers of energy-efficient, resource-saving technologies, Siemens is a leading supplier of systems for power generation and transmission as well as medical diagnosis. In infrastructure and industry solutions the company plays a pioneering role.

Siemens, left to right: Ramit Kumar, Siemens, Gurgaon; Dr. Ashok Singh, Official Representative of Izolyator in India; Saurav Gaba, Siemens, Gurgaon; Ivan Panfilov, Commercial Director, Izolyator, Andrey Shornikov, Area Sales Manager, Izolyator

Bharat Heavy Electricals Ltd. (BHEL)

(quick info)

The company designs, makes, tests, commissions and services a wide range of equipment for power industry, oil and gas, defense industry, rail transport and other key industries. Offering more than 180 articles of equipment, BHEL is one of the largest players in its segment in India with global presence in 76 countries.

BHEL, left to right: Mahendra Kurre, Deputy General Director, BHEL; Andrey Shornikov, Area Sales Manager, Izolyator, Ivan Panfilov, Commercial Director, Izolyator; Dipankar Guin, General Director, ROD/BHEL; Tez Prakash, General Manager, BHEL; V.K. Bassi/Addl., Assistant General Director, BHEL; Dr. Ashok Singh, Official Representative of Izolyator in India

Standing from Left: Mr. Dipankar Guin/General Manager , Incharge ROD/BHEL; Mr. Andrey Shornikov/Area sales Manager/ Izolyator Company, Mr. V.K. Bassi/Addl. General Manager/BHEL,Mr. Pavel V. Kiryukhin/Deputy Chief of Designer/Izolyator Company and Dr. Ashok Singh/Chief Representative of Izolyator Company in India

The 5th international exhibition and conference GridTech 2015

There exists a clear understanding in Izolyator about the importance of making a transition to RIP technology, so the company will apply utmost effort to share its experience and support PowerGrid and all transformer makers in India just as any consumers of HV bushings.

In April 2014, Izolyator delegation including Ivan Panfilov, Commercial Director of Izolyator, Andrey Shornikov, Area Sales Manager of Izolyator and Dr. Ashok Singh, Official Izolyator Representative in India visited Mumbai and Delhi in order to discuss working issues with PowerGrid and local transformer OEMs. The visitors also participated in GridTech 2015, organized with the support of PowerGrid. At the exhibition, the sides discussed current projects, RIP insulated bushings application, operation and maintenance, their technological advantages and practical difference in the processes of installation and operation of OIP and RIP bushings.

A particularly important topic at PowerGrid meeting was raised in discussion on opportunity of Izolyator's RIP bushings application on Crompton Greaves transformer in Delhi.

Dr. Ashok Singh,
Official Izolyator Representative in India

Standing from Left: Mr. Ivan Panfilov/Commercial Director of Izolyator Comapny; Mr. Andrey Shornikov/Area sales Manager/ Izolyator Company and Dr. Ashok Singh/Chief Representative of Izolyator Company in India

Standing from Left:Mr. Ivan Panfilov/ Commercial Director of Izolyator Comapny, Dr. Ashok Singh/Chief Representative of Izolyator Company in India, Mr.V. G Rao/Deputy General Manager/Kolar/PowerGrid; Mr. Andrey Shornikov/Area sales Manager/Izolyator Company and Mr.John Yesuraj/General Manager,R&D/Crompton Greaves Ltd.

INDIA — RUSSIA: THE FIRST RESULTS OF COOPERATION

Standing fromLeft : Mr. Andrey Shornikov/Area sales Manager/Izolyator Company; Mr. Saxena Pradeep/Q&A/PowerGrid; Mr. Ivan Panfilov/ Commercial Director of Izolyator Comapny and Dr. Ashok Singh/Chief Representative of Izolyator Company in India

Standing fromLeft: Mr. Andrey Shornikov/Area sales Manager/Izolyator Company; Mr. Kumar Shiv Shankar/Aditya Birla and Mr. Ivan Panfilov/ Commercial Director of Izolyator Comapny

At GridTech 2015, left to right: Andrey Shornikov, Area Sales Manager of Izolyator; Mr. Purushotham C. N. / BHEL Bangalore / Ceramic Business Unit / Senior Dy. General Manager; Ivan Panfilov, Commercial Director of Izolyator; Dr. Ashok Singh, Official Izolyator Representative in India

At GridTech 2015, left to right: Dr. Ashok Singh, Official Izolyator Representative in India; Andrey Shornikov, Area Sales Manager of Izolyator; Mr. Purushotham C. N. / BHEL Bangalore / Ceramic Business Unit / Senior Dy. General Manager

At GridTech 2015: meeting with Toshiba Representative

At GridTech 2015, left to right: Dr. Ashok Singh, Official Izolyator Representative in India; Hyosung Representative; Andrey Shornikov, Area Sales Manager of Izolyator

Meetengs with Indian State representatives

From left to right: Dr. Ashok Singh; Mr. Andrey Shornikov; Mr. P. N. Singh / Member of Parliament, Lok Sabha; Mr. Ivan Panfilov

From left to right: Mr. Shahzad Navi / Advisor Relliance; Dr. Ashok Singh / Chief of the representative in India of Izolyator company; Mr. Ratan Shankar / Advisor Corporate affairs; Mr. Ivan Panfilov / CEO & commercial Director of Izolyator company; Mr. Andrey Shornikov / International BUsiness Development Manager of Izolyator company; Dr. Amrendra Kumar Singh / Advocate supreme court of India

Hand shaking Mr. Ivan Panfilov with Mr. P. N. Singh / Member of Parliament, Lok Sabha

Hand shaking Mr. Andrey Shornikov with Mr. P. N. Singh / Member of Parliament, Lok Sabha

Visit to Mittal Tea House

Museum and store Mittal Tea House (8-a Main Market, Lodhi Coloni, New Delhi (www.mittalteahouse.com).
From left to right: Dr. Ashok Singh, Mr. Andrey Shornikov & Mr. Kesha Kant Mittal

Museum and store Mittal Tea House (8-a Main Market, Lodhi Coloni, New Delhi (www.mittalteahouse.com).
From left to right: Mr. Dmitry Mashinistov, Mr. Ivan Panfilov, Mr. Kesha Kant Mittal & Mr. Andrey Shornikov

PowerGrid inspection at Izolyator

In May 2015, PowerGrid made a decision to send a specialist to Izolyator plant to control basic tests and shipment of the trial bunch of HV bushings for Crompton Greaves. Quality Dpt inspector Pradeep Dixit visited the plant on 6-9 May and was present at the test according to MQP plan. Mr Pradeep Dixit joined Izolyator team for three days and took an active part in all test processes.

A.N. Novikov
Quality Director of Izolyator

Routine testing Lab of Izolyator Company, left to right: Andrey Shornikov, Area Sales Manager of Izolyator; Pradeep Dixit, Quality Inspector; Ivan Panfilov, Commercial Director of Izolyator; A. Novikov, Director of Quality Control of Izolyator; Natalia Mazova, Area Sales Manager of Izolyator

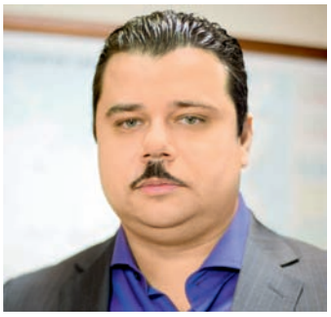
Setting test parameters on 252–1200 kV station

At the test station 252–1200 kV, left to right: A. Novikov, Dr. Ashok Singh and Pradeep Dixit

Control of test parameters on 252–1200 kV station

At the test station 12–172 kV

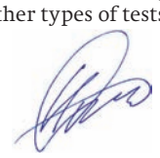
INDIA — RUSSIA: THE FIRST RESULTS OF COOPERATION



The Test Center of HV equipment at Izolyator is certified by the Federal Agency on Technical Regulation and Metrology for technical competence and compliance with GOST R ISO / IEC 17025-2006 (ISO / IEC 17025:2005). The Test Center runs tests of AC/DC 20-1150 kV bushings for compliance with requirements of Russian and international standards. Test program also includes current and voltage transformers, ceramic covers compliance checks.

The main types of tests are:

- testing under alternating voltage of industrial frequencies 50 Hz up to 1200 kV
- testing under direct current up to ±1600 kV
- testing under complete and chopped lightning impulse 1.2/50 ms
- testing under switching impulse 250/2500 ms • Testing under nominal current up to 8 kA
- main electric characteristics testing (capacitance, dielectric loss tangent, partial discharge level, resistance values, etc.)
- heat resistance
- humidity resistance
- air-tightness
- mechanical testing
- other types of tests



Head of Test Center of Izolyator
D.V. Ivanov

Control of test parameters on 12–172 kV station

In expectation of result

Testing is successful

INDIA — RUSSIA: THE FIRST RESULTS OF COOPERATION

At the assembly shop of Izolyator

All tests and Izolyator plant inspection went successfully, thus on 10 May 2015, the first lot of RIP insulated bushings made by Izolyator left the territory of Russia with destination for India. Izolyator would like to thank Mr Pradeep Dixit for his visit and PowerGrid company for their trust. We are also ready to provide our partners with a complete range of quality control options in regard to our products!

Seminar in PowerGrid

In May 2015, Izolyator conducted a series of seminars for technical specialists of PowerGrid and Crompton Greaves companies. The specialists learned about technical features and design of RIP insulated bushings. The main focus in training was made on issues of transportation, installation, diagnostics, operation and maintenance of Izolyator-made bushings. The seminars went in friendly atmosphere offering opportunities for open discussions with mutual interest forming a solid platform for developing a long term cooperation.

We wish to thank PowerGrid and Crompton Greaves colleagues for seminars organization and warm welcome.

We hope that such events will become a regular routine considering their practical value and importance.

Deputy Chief Designer at Izolyator
P.V. Kiryukhin

Standing from Left: Mr. Ajay Kumar Vaish/General Manager, CMG, PowerGrid; Mr. Andrey Shornikov/Area sales Manager/ Izolyator Company and Mr. Pavel V. Kiryukhin/Deputy Chief of Designer/Izolyator Company

Seminar about operation & maintenence, Errection and commissioning of RIP Bushing at PowerGrid Office in Gurgaon

Seminar about operation & maintenence, Errection and commissioning of RIP Bushing at PowerGrid Office in Gurgaon

Seminar in Crompton Greaves

Participants in Izolyator seminar in Crompton Greaves

Izolyator seminar in Crompton Greaves

Lakshminarayana Jarugula, Executive — Materials, Power Transformers Division (T1), Cromton Greaves Limited (left) and Andrey Shornikov, Area Sales Manager at Izolyator

Lakshminarayana Jarugula, Executive — Materials, Power Transformers Division (T1), Cromton Greaves Limited (left) and Pavel Kiryukhin, Deputy Chief Designer at Izolyator

It is worth mentioning that power industry in India is rapidly developing. The progress in economy, industry and electricity consumption growth in India are a fact that requires coordination with power generation, transmission and distribution. Izolyator wishes to thank all Indian partners especially PowerGrid staff and the teams of transformer OEMs on the territory of India. Izolyator will continue to apply maximal efforts to assist successful development of power sector in India ensuring sustainable power supply to all consumers and people of the country.

Commissioning Izolyator bushings in Delhi

In June 2015, Massa Ltd – Izolyator plant representatives visited 400 kV substation Bamnoli, operated by Delhi Transco Limited, New Delhi, India in order to provide technical consultancy during installation of nine HV bushings. Our representatives took part in the installation of three 52 kV bushings, three 252 kV bushings and three 420 kV bushings and witnessed a high technical level of local specialists including technical readiness for executing works of this complexity.

The installation works were done on time with due quality proving a high qualification of the staff.

We thank our partners for productive work and a high level of readiness of the technical team.

We hope to see successful development of our partnership in future.

Head of SVN Service in Izolyator
D.V. Mashinistov

IZOLYATOR

Izolyator is an official supplier of high-voltage power equipment for the needs of PowerGrid

(based on the audit results in 2014)

FGC UES: together with PowerGrid we work for the perspective!

President Vladimir Putin and Prime Minister Narendra Modi, New Deli, December 2014

In December 2014, President of Russian Federation Vladimir Putin paid an official visit to India where he met with the Prime Minister Narendra Modi and President Pranab Kumar Mukherjee, and the representatives of business circles. In June 2014, a trilateral meeting between PowerGrid, FGC UES and Izolyator took place at FGC UES Headquarter. PowerGrid representatives then visited three FGC UES's facilities that operate Izolyator bushings of 500–750 kV voltage classes.

During Izolyator's business trip timed to coincide with President Putin's official visit to India in December 2014 a united Russian delegation of FGC UES and Izolyator visited PowerGrid in its Headquarter.

The joint delegation of FGC UES and Izolyator also visited several power facilities and transformer plants. The meeting with major players of Indian power market opens good prospects not only for continued cooperation on top management level of FGC UES and leading Indian companies in generation, transmission and distribution but also for continued talks on the government level on topics of energy sector and in general.

Head of Production Technology Development of Electric Engineering equipment of FGC UES JSC
K.A. Lunin

Power Grid Corporation of India Limited

(quick info)

Power Grid Corporation of India Limited (PowerGrid) is one of the largest power grid companies in the world, structurally related to the Ministry of Energy of India. The company plays the key role in power supply to all regions of the country and power sector development in India with participation in the most prominent governmental programs.

FGC UES JSC

(quick info)

Open Joint Stock Company Federal Grid Company of United Energy System (FGC UES JSC) was created in accordance with the reform in the Russian power industry as a managing company in charge of United National (all-Russian) Electric Network with the purpose of its preservation and development.
By the Russian Government Decree of 11 July 2001 #526 "On reform of the Power Industry of Russian Federation" United National Power System of Russia is recognized "national possession and guarantee of the national energy security.

Representatives of PowerGrid and Izolyator in FGC UES HQ

Trilateral meeting of PowerGrid, FGC UES and Izolyator in Moscow

PowerGrid presentation at FGC UES

Kiril Lunin, FGC UES

In the foreground – representatives of PowerGrid

FGC UES representatives

PowerGrid representatives at Metallurgicheskaya substation of MES Center

PowerGrid representatives at Stary Oskol substation of MES Center

Trilateral meeting of PowerGrid, FGC UES and Izolyator in Delhi

Standing from Left: Mr. Ivan Panfilov/ Commercial Director of Izolyator Comapny; Mr Lunin K.A/Head of production technology & Development of engg. Equipment/Federal Grid of Russia.; Mr. Zhukov Andrey Nikolaevich/Federal Grid of Russia & Dr. Ashok Singh/Chief Representative of Izolyator in India

From Left Standing: Mr. Kiril Lunin, Federal Grid of Russia; Mr. I. S. Jha, Director of Projects/Power Grid of India; Mr. Andrey Zhukov, Federal Grid of Russia & Mr. Ivan Panfilov

A presentation time about the Federal Grid of Russia in PowerGrid/Gurgaon

FGC UES and Izolyator visiting power facilities in India

Meeting in Gurgaon office of Transformers & Rectifiers (India) Ltd CMD & Delegation of Federal Grid of Russia

Meeting in New Delhi BHEL office with the high level team of Mr. Dipankar Guin & Delegation of Federal Grid of Russia

Seating from left: Mr. A.K. Jha/Director Technical/NTPC Ltd.,Mr. Ivan Panfilov/ Commercial Director of Izolyator Comapny; Mr Lunin K.A/Head of production technology & Development of engg. Equipment/Federal Grid of Russia.; Mr. Zhukov Andrey Nikolaevich/Federal Grid of Russia ; Dr. Ashok Singh/Chief Representative of Izolyator in India and Dr.Amrendra Kumar Singh/Advocate, Supreme Court of India

Visit of a Modern Construction factory in NCR and meeting with its CEO/Mr. Ram Kumar & the Delegation of Federal grid of Russia

FGC UES reference letter on high-voltage bushings by Izolyator

On 3 July 2015, FGC UES JSC sent a reference letter to Indian PowerGrid Corporation of India Limited concerning Izolyator 550 and 800 kV RIP-insulated bushings that are operated in regional grids, branches of FGC UES. In the document, FGC UES confirms a high quality of Izolyator products and recommends the company as a reliable strategic partner.

Федеральная Сетевая Компания — Единой Энергетической Системы

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телефон: 8 800 200 1881, факс: 495 710 9655
e-mail: info@fsk-ees.ru, www.fsk-ees.ru

03.07.2015 № 1975

Att. of
Power Grid Corporation of India Ltd., Saudamini, Plot No.-2, Sector-29, Gurgaon-122001, Haryana, India
Tel. +91-124-2571700-19 (Extn. 2348/3325);
Fax.: +91-124-2571831

TO WHOM IT MAY CONCERN

Dear Gentlemen!

In the course of many decades, from the moment of appearance of Electrical Power Sector in Russian Federation and up to the present day **Massa LLC – IZOLYATOR factory** remains our regular supplier of high-voltage bushings for the needs of our Company. Below herewith we are kindly informing You on the list of HV bushings, rated **500kV/315A, 500kV/1600A, 500kV/2500A, 800kV/315A,** with internal solid resin impregnated paper (RIP) insulation **which have been developed, designed, manufactured, type tested, supplied , installed by Massa LLC** at the facilities of subdivision companies of **JSC Federal Grid Company of Unified Energy System (JSC FGC UES): MES of Northwest, MES of Urals, MES of East, MES of Center, MES of Volga, MES of Siberia, MES of West Siberia, MES of South.**

Type of Bushing	Factory drawing	Year of commissioning	Factory Serial No.	Q-ty, pcs.	Total Q-ty
500kV/315A (for reactors)	ИВУЕ.686355.129	2009	П-21771 П-21881 П-19941 П-20497 П-21234 П-21273	6	
		2010	П-26489 П-26834 П-27972 П-25751 П-21928	5	
		2011	П-32977 П-33077 П-34093 П-34178 П-23848 П-24355 П-25186 П-31691	8	
		2012	П-35175,П-42418	2	
		2013	П-34038, П-49089, П-53515 П-53516, П-54083, П-50548 П-50547, П-53439, П-49051 П-49050, П-49799	11	
500kV/1600A (transformer)	ИВУЕ.686355.173	2011	П-39608 П-39738	4	
		2012	П-45051, П-46608,П-46654 П-44984,П-48212,П-43386 П-40566	7	
		2013	П-40271	1	
500kV /2500A (transformer)	ИВЕЮ.686354.001 ИВЕЮ.686354.002 ИВУЕ.686355.172 ИВУЕ.686355.146-01	1999	Ч-48461	1	
		2005	Ч-89899	1	
		2008	П-06227 П-10840 П-12457 П-13488 П-15598 П-16544 П-08181 П-13764 П-12832 П-12741	10	
		2009	П-19736 П-19098 П-19461	3	
		2010	П-24454 П-26803 П-22900	3	
		2011	П-13380 П-39932 П-40061 П-40647 П-22158 П-22850 П-24228	7	
		2012	П-42246, П-40667, П-40514, П-41067, П-41215, П-40933, П-41427, П-39607, П-42008 П-41368, П-41639	11	
		2013	П-54603, П-50428, П-54432 П-54433, П-51960, П-49090 П-52074, П-52210, П-48863 П-43036, П-52018, П-50281	12	
800kV/315A (for reactors)	ИВУЕ.686356.165	2013	П-52993, П-52372	2	
		2014	П-46179	1	95

We confirm hereby the high quality of the supplied products by **Massa LLC**, as well as a complete compliance with the requirements of **IEC 60137 standard, GOST 10693 standard** and normative documents. All high-voltage bushings mentioned above have passed successfully all type and routine tests and are successfully operating up to the present time since their commissioning. There have not been occurred any problem with installation, commissioning and maintenance.

A successful experience in development of the partnership relations between **Massa LLC and JCS FGC UES** allows to recommend **Massa LLC - Izolyator factory** as a reliable partner for manufacturing and supplies of the bushings for high (110, 220, 330) and extra-high voltage levels (420, 550, 800 etc.).

JSC FGC UES confirms herewith that **Massa LLC - Izolyator factory** is a strategical partner, wishing You prosperity and further innovative development of Energy Transmission and Distribution in Russia and Worldwide!

Your sincerely,

Deputy Chairman of the Board – chief engineer — V.P. Dikoy

RIP insulated bushings advantages

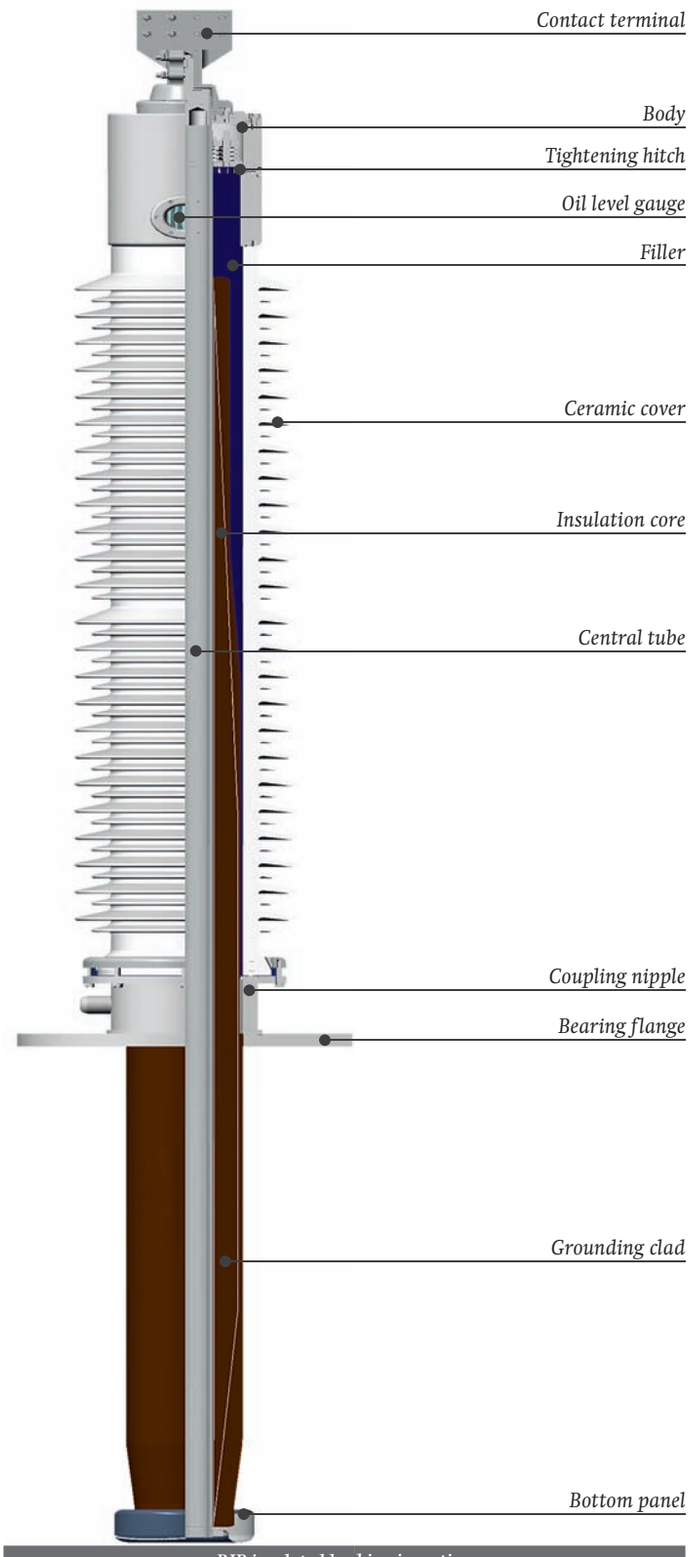
Internal hard RIP insulation

(quick info)

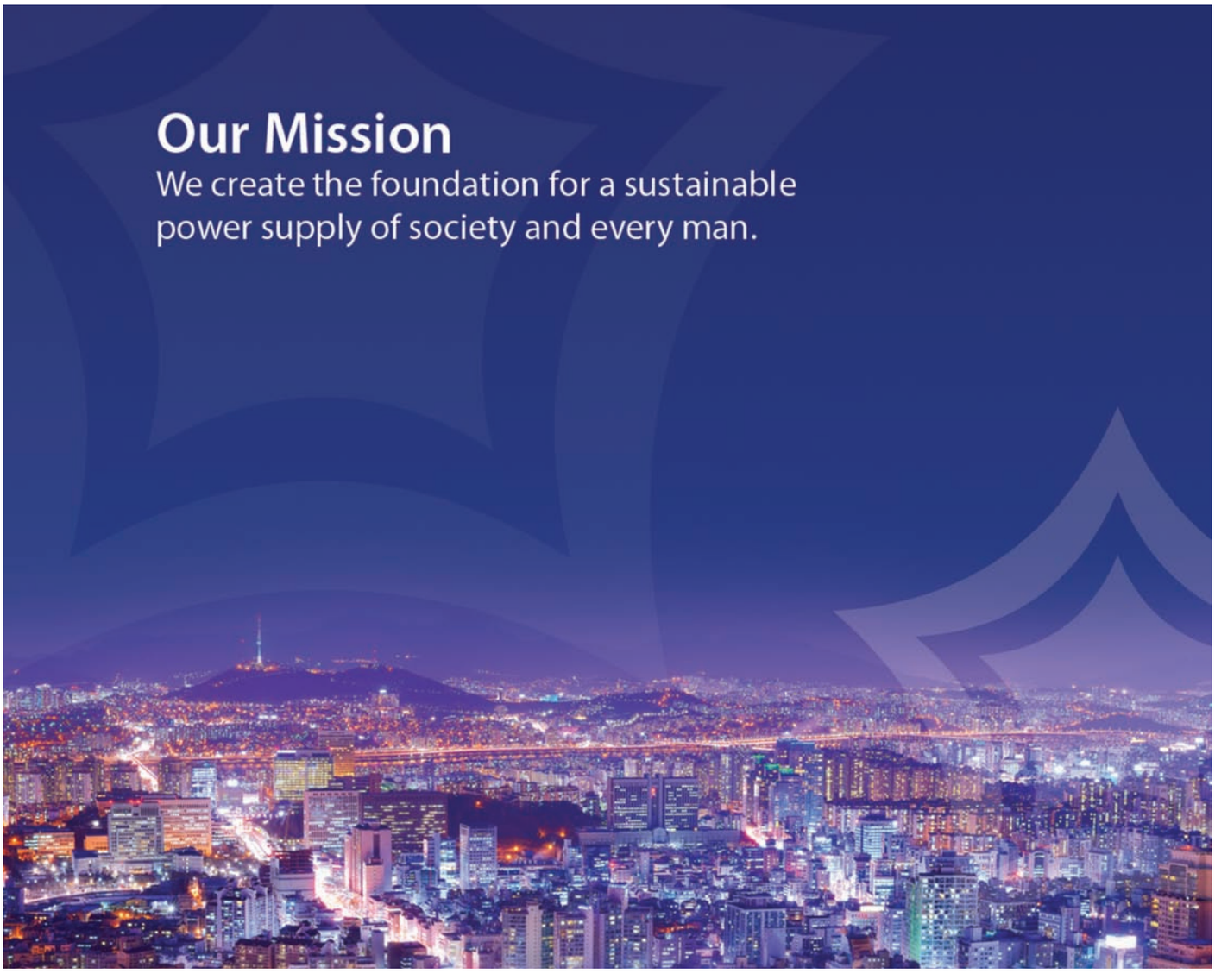
Resin impregnated paper — paper saturated with resin – is the main construction element of a HV bushing. It is a core which is formed by insulating crepe paper winding on the central tube with subsequent thermal vacuum dryout and a special epoxide compound saturation.

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

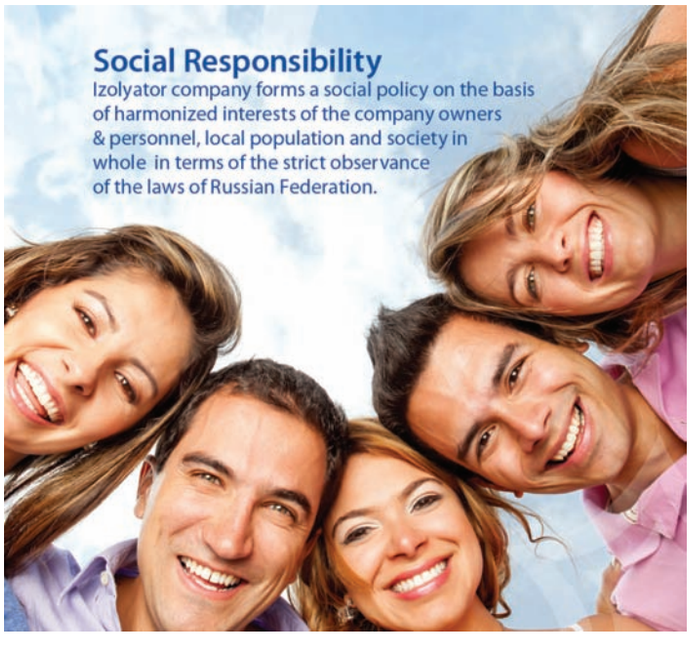
- **Reliability**
- **Security**
- **Advanced design**
- **Durability**
- **Ecologically friendly**
- **Service free**
- **Ease of operation**



RIP insulated bushing in section


Our Mission
We create the foundation for a sustainable power supply of society and every man.

Our Vision
We are aimed to be a world leader in design, production and introduction of current technologies into the power sector.


Social Responsibility
Izolyator company forms a social policy on the basis of harmonized interests of the company owners & personnel, local population and society in whole in terms of the strict observance of the laws of Russian Federation.

IZOLYATOR

1896
Established in

from 200
from 500
employees

plant area
24 000 sq m

USD
62 mln
Annual
sales

70-80%
market share
in Russia and CIS

20%
Export share
in sales volume

Izolyator Advantages

- 118 years of experience behind our back, we are the most experienced manufacturer of high-voltage bushings in the world (> 500 000 pcs produced)
- Full range of HV bushings 12 - 1150 kV available
- More than 15 year experience of RIP bushings manufacture
- Design and develop innovative products
- Strive for constant product improvement
- Supply reference all around the world
- Company and products recognized worldwide
- Clients' interests are the main goal in our work
- We are always open to cooperation
- We stand by modern approaches to partnership and cooperation
- We are a professional team
- We render a complete services range:
  - Design
  - Production
  - Testing
  - Warranty and post warranty service

IZOLYATOR: FACTS AND ACHIEVEMENTS

118 years of bushings production experience

Sole bushings manufacturer in **12–1200 kV** range in Russia and CIS

550 000 bushings made – an equivalent of **90 000** transformers with 80 MVA capacity

500 000 OIP

50 000 RIP

40 000 bushings installed in FSK UES facilities

Exports to more than **30** countries worldwide

20 000 bushings with fault free operation exceeding 35 years

IZOLYATOR
Published by Izolyator company (Massa Ltd. Company)
A quarterly edition

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