

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

IZOLYATOR

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

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Global Cooperation - Continued

This year is marked with Energy business ties development between Russia and India. Since early 2014 Izolyator has taken contacts with the state-owned Power Grid Corporation of India (PowerGrid) to a new level. Our team initiated a series of exchanges with Indian HV equipment OEMs and partners eventually bringing Russia's FSK UES and PowerGrid face-to-face in a number of technical and commercial panel discussions.

The most important results of those activities are detailed in the article while you can refer p.7 (History) on the details of early contacts.



From left to right: Mr. Prem Pankaj/Legal Consultant, Dr. Ashok Singh., Mr. Andrey Zhukov, Mr. Shailesh Mandal/Member of Parliament, Lok Sabha/Bhagalpur.; Mr. Kiril Lunin, Mr. Amarjeet Singh/Delco Director, Mr. Ivan Panfilov/1st CEO Commercial Director and Dr. Amrendra Singh/Legal Advisor/Supreme Court of India

RUSSIAN BUSINESS VISITING INDIA IN DECEMBER 2014

As a natural outcome of intense contacts during the year and a continued progress in state-to-state relations between India and Russia a joint FSK UES and Izolyator visit was agreed with top management of Indian partners.

Andrey Murov, Chairman of the Board FSK UES JSC, detailed the trip agenda: prospecting cooperation areas through sharing experience of electric power transmission and distribution involving Indian generating capacities. PowerGrid confirmed the dates of the visit – December 11-13 – when President Putin's official visit was to take place.

The members of joint delegation

FSK UES JSC:

Kirill Lunin, Head Technology R&D for Electrotechnical Equipment

Andrey Zhukov, Chief Engineer on Production Assets Management

Izolyator JSC:

Ivan Panfilov, Sales Director, Member of the Board of Directors

The agenda of the visit included high level meetings at PowerGrid, generating company NTPC Limited, HV OEMs Transformers & Rectifiers (India) Ltd and Bharat Heavy Electricals Ltd (BHEL), and construction company Amrapali Group.

PowerGrid Company



From left to right: Mr. Ivan Panfilov, Mr. Kiril Lunin, Mr. Andrey Zhukov, Dr. Ashok Singh

PowerGrid is one of the largest grid companies of the world structurally incorporated with The Ministry of Energy of India. The company plays the key role in electricity supply across all regions in the country and prospective growth of power economy through the biggest state programs.

Russian delegates met PowerGrid Executives at the Headquarter on the 11th of December 2014 – their first day in India.

FSK UES and PowerGrid delivered informative and detailed presentations that lead to an open exchange of opinions and mapping priorities for future cooperation, among those:



From left to right: Dr. Ashok Singh, Mr. S.B.R Rao/Chief Manager/PGCIL, Mr. B.N. De Bhowmick/General Manager/technology Development, Mr. R.K. Arora/AGM, Mr. R.K. Tyagi/Additional General Manager/Operation Services/PGCIL, Mr. Kiril Lunin and Mr. Andrey Zhukov

- development of transmission and distribution networks above 220kV in Russia and India
- immediate tasks scope and approaches
- goals for transmission and distribution development with 15 year planning horizon
- principal approaches to operation, management and maintenance of entire range of power equipment used in the transmitting and distributing networks
- regulations for equipment qualification and order placement/processing with the HV equipment manufacturing plants
- equipment testing and certification systems and real practice; supplying plants homologation for the networks
- breakdowns and failures and work algorithms for emergency situations, preventive measures aimed at decreasing and managing risks
- details on operational experience with innovative equipment in the transmission and distribution networks and Russia and India's demand in such prototypes with the ultimate purpose of efficiency and cost optimization
- organizational structures of FSK UES and PowerGrid, decision making and distribution of areas of authority and reporting lines

Both sides witnessed that the electric power transmission and distribution systems in India and Russia bear a lot in common. Since each country possesses a unique methodology and expertise the sides found it imperative that a continued dialogue and knowledge share were to take place on a regular basis.

The talks helped formulate strategic arrangements to be discussed in the near future while another important outcome that

the sides agreed on was the next top management meeting with Mr. I. S. Jha, Projects Director of PowerGrid.

Following up the Russian delegation visit, PowerGrid company forwarded a thank you letter addressed to Andrey Murov, Chairman of the Board, that expressed interest to continue dialogue and intention to sign a frame document on interchange of experience between the two sides.



From left to right: Mr. Kiril Lunin, Mr.I.S. Jha/Director Projects/PGCIL, Mr. Andrey Zhukov and Mr. Ivan Panfilov

Meeting at Transformers & Rectifiers (India) Ltd plant



From left to right: Mr. Ivan Panfilov, Mr. Vinod Masson/Director Strategy/T&R, Dr. Ashok Singh, Mr. Kiril Lunin, Mr. Andrey Zhukov and Mr. Jitendra Mamtora/Chairman/Transformer & rectifiers India Ltd

The plant was represented by:

Jitendra Mamtora, Chairman
Vinod Masson, Director on Strategy
Ashwani Sharma, Chief Executive Officer

The three sides covered a number of issues at the discussion:

- FSK UES JSC corporate presentation and an overview of power transmission and distribution systems in Russia
 - demand for high-voltage equipment in the 15 year prospective
 - areas of strategic growth for power transmission and distribution
 - work system development to manage equipment suppliers and strategic goals up to the end of 2030
 - successful track record of high-voltage bushings with RIP insulation application in the transmission and distribution systems in Russia
 - Transformers & Rectifiers (India) Ltd presentation and product range introduction
 - the history of the plant development
 - application possibility of Indian equipment in the transmission and distribution system of Russia
- Corresponding records of the meeting and follow-up letters were sent to FSK UES JSC.

Transformers & Rectifiers (India) Ltd founded in 1994 is an electric equipment manufacturer of a broad range of transformers both for domestic and international markets.

BHEL plant



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.

BHEL representatives at the meeting:

Rajeev Kumar Gupta, COO for International Operations

Tej Prakash, CEO

S.Raj Sabapathy, MD Ceramic Business Unit

Purushotham C.N., 1st Deputy MD (CBU0Marketing & Planning)

Sanjay Saha, Deputy COO for International Operations

Dinpankar Guin, Responsible COO (Regional Operations Division)

The sides discussed demands in high-voltage equipment in the next years and strategic development



From left to right: Mr. Andrey Zhukov, Mr. Kiril Lunin, Mr. Amarjeet Singh/Delco Director, Mr. Dipankar Guin/General Manager Incharge/BHEL, Mr. Ivan Panfilov, Dr. Ashok Singh, Mr. Bassi V.K./Additional General Manager/BHEL, Mr. Tej Prakash/General Manager/BHEL, and Mr. Purushotham/Sr. Deputy General Manager/CBU-Marketing & Planning./BHEL

of transmission and distribution systems.

Besides, in the course of discussion the representatives of three companies covered:

- development of work system with equipment suppliers and

strategic goals till the end of 2030

- BHEL experience in production and operation of full specter of high-voltage equipment
- BHEL experience in design and organization of systems of

electric power generation and distribution on the territory of India and other countries

An agreement was reached to continue cooperation and submit a list of suitable for BHEL needs equipment.

Generating company NTPC Limited



NTPC Limited is the largest state-owned energy company established in 1975 with a purpose of accelerating development of power economy in India. Overall installed capacity of the power plants including joint ventures corresponds to 43128 MW. The company set a target of 128000 MW of total installed capacity by 2032 which will come from diverse sources of energy: 56% - coal, 16% - natural gas, 11% - nuclear energy, 17% - renewable energy.



From left to right: Mr. A.K. Jha/Technical Director/NTPC, Mr. Ivan Panfilov, Mr. Andrey Zhukov, Mr. Kiril Lunin, Dr. Ashok Singh and Dr. Amrendra Singh/Legal consultant/Supreme court of India

NTPC Limited was represented by Mr. A.K. Jha, Technical Director, at the meeting with Russian visitors.

The sides started with organizational structure of the Indian company with 86% shares owned by the State. In the course of discussion the Russian delegates

learned about the decision making system and operation principles in NTPC Limited and total generation figures in the country.

For instance, today electric power generation distributes into the following groups by type

- coal stations
- stations running on gas and

fuel oil

- water power projects (under construction)
- renewable sources of energy

The sides also discussed cooperation of Indian and Russian companies in transmission and distribution of electric power in grids above 220 kV.

An active exchange came up when the sides shared experience and opinions on related sectors development and cooperation aspects between companies of Russia and India. Russian delegation used Izolyator's experience as an example for objects with power generation of various types.

Amrapali Group is one of the largest construction businesses in India managing over 50 projects in industrial and residential development, healthcare, education, trade, hospitality and other sectors.

Construction company Amrapali Group



Meeting Amrapali Group representatives

RESULTS OF VISIT TO INDIA

Indian trip outcomes brought certainty with FFSK UES and Izolyator that the combined experience in generation, transmission, distribution and consumption of electric power in Russia and India provides an immense potential for joining efforts in realization of current projects within the power industry.

Meeting major players on the domestic market in India not only shows good prospects for cooperation on business level meaning direct management contacts between FKS UES and leading Indian state corporations but also on government level in general.

The topics covered during Amrapali Group visit included current demands and issues of power supply to residential and industrial facilities, design and construction of medium and high-voltage grids. Besides, an important issue of coordination between designers of medium, high-voltage equipment and grid companies as well as relevant projects implementation was raised at the meeting.

International Cooperation

Izolyator prospected a number of strategic destinations for international business development. Our analysis shows that India has intensified communications with new partners and traditional, Russia being among them. The reason to that are the highest growth rates that the Indian economy is experiencing.

Taking into account the broad scope of today's contacts between India and Russia, Izolyator sees the following drivers for deeper integration into global economy:

- headlong pace of Indian economy and power industry
- friendly ties between countries since 1950ies
- openness to dialogue and intention to deepen business ties including joint power projects
- Izolyator's century-long experience of world class products design that meet and surpass expectations
- deployed sales and service structures providing foothold in international markets

Indian start

Delco Infrastructure Projects Limited (DELCO) was established in 1988 in Delhi. The core business relates to construction of electric substations and various civil facilities.

As of today, it has completed about 25 projects in India alone.

Chairman cum Managing Director - Mr. Hare Ram Singh. The company has been recognized by such giants as PowerGrid, Siemens, BHEL, KBC. Turnover – 5158.84 (lacs).

Capital – 2001.16 (lacs).

DELCO partners with many majors in Russia including JSC HC Electrozavod.

Dr. Ashok Kumar Singh

In 1984-1988 he studied in Moscow at The Institute for Machine Science n.a. A.A.Blagonravov affiliated to The Russian Academy of Sciences.

Mr. Singh, PhD in Technical Science (Engineering), has more than 25 years of experience in commerce, engineering and project management.



Meeting with Indian partners. The 2nd person on the left — Dr.Ashok Singh

With the positive perception of the energy market conditions in India Izolyator management planned a visit to the state-owned PowerGrid Corporation of India Ltd (PowerGrid). The purpose of the visit was an introduction to PowerGrid management to discuss cooperation prospects

in development of India's power industry. Izolyator turned to Dr. Ashok Singh for help in organizing

a high level visit and received all necessary support in required format.

PowerGrid is one of the largest grid companies of the world structurally incorporated with The Ministry of Energy of India. The company plays the key role in electricity supply across all regions in the country and prospective growth of power economy through the biggest state programs.

Making Contact

The visit to India, organized with active brokerage of DELCO, took place in March 2014. Izolyator's 1st Deputy CEO Ivan Panfilov, brought the following agenda to

India: corporate presentation and product range and a wide specter of technical, commercial and organizational issues of mutual interest.

In order to make the talks a success Izolyator's reputation was to be adequately presented: the company takes pride in decades of design and manufacture of

reliable and durable equipment, track record with the world's largest energy companies, flexibility to adapt to any technical requirements and modes of equipment operation and unlimited capability to develop high-voltage bushings of all working voltage and current intensity types.

The meeting at PowerGrid went in a friendly atmosphere and the sides agreed that a solid foundation was laid for moving forward towards efficient and fruitful cooperation:

- Personal meeting allowed PowerGrid to receive full information and understanding on Izolyator's business strategy and objectives, technical capabilities and world class engineering level
- The parties discussed tender conditions PowerGrid addresses to OEMs and suppliers for the purposes of Izolyator participation in future
- The sides identified starting points for further detailing cooperation topics



Ivan Panfilov and Dr. Ashok Singh, March 2014

PowerGrid's Invitation

PowerGrid management preferred to avoid delays in shaping cooperation and invited Izolyator representatives for a better coverage of outlined at the first meeting topics. The visit as always facilitated with kind help of Dr. Ashok Singh (DELCO) took place in June 2014 and brought a more representative delegation under the diamond-bright sun of India, consisting of:

Ivan Panfilov, Sales Director and First Deputy CEO and **Andrey Shornikov**, Area Sales Manager.

During the talks the sides went into details with terms and conditions of Izolyator's future tender bids for the supply of high-voltage bushings for PowerGrid's needs. The starting condition requires a comprehensive audit of Izolyator Company including production, finance and legal aspects of its operation to be followed by site visits. A natural condition that had to be observed was inclusion of power facilities that would have had operational track record with Izolyator made high-voltage bushings for over 5 years. The Indian side expressed intention not only to inspect the power facilities and have an open dialogue with the operating companies but also to conduct a

thorough audit of all tests ever done - to check the stability of high-voltage bushings characteristics over the entire operation period.

Bearing in mind the political importance of the auditing visit initiative - as paving the way for a wider Russia-India dialogue in the energy sector - Izolyator proposed

to arrange PowerGrid's meeting with the Russian grid operator FSK UES, the largest client for Izolyator products. The suggestion was highly appreciated and met with enthusiasm as it offered an enhanced opportunity of business ties development on long term basis between our countries.

At the end of discussion the parties agreed to commence preparations for PowerGrid representatives' visit to audit Izolyator. The program of visit and audit procedure thoroughly detailed and agreed were documented and signed by the parties.



Left to right: Ivan Panfilov, Dr. Ashok Singh, Andrey Shornikov, June 2014

Inviting FSK UES

As arranged with the Indian partners, Izolyator requested an opportunity to visit facilities with JSC FFSK UES so that PowerGrid not only visited all agreed sites but was also able to join FSK UES representatives in an open panel discussion for sharing operational experience.

Izolyator is an authorized supplier of high-voltage bushings for the needs of FSK UES. The long history of business relationship

between the two companies concerning all long-distance main grids – branches of FSK UES - has resulted in accumulating extensive positive operational experience of Izolyator-made high-voltage bushings.

Based on the above, FSK UES granted access to its facilities for inspection by PowerGrid representatives and confirmed interest in sharing experience of purchasing, operation and

maintenance of Izolyator-made high-voltage bushings.

Additionally some time was scheduled for talks on new grid construction and development in Russia and India.

PowerGrid visitors received an invitation to the following grid facilities within the Grid “Center”:

- 750kV Bely Rast substation;
- 500kV Pakhra substation;
- 500kV Stary Oskol substation;

- 750kV Metallurgicheskaya substation;
- 750kV Vladimirskaya substation.

The facilities are situated in the Moscow, Vladimir and Belgorod regions of the Russian Federation.

Izolyator Company would like to express sincere gratitude to FSK UES for the open dialogue and support of the Russian manufacturer's integration into international market.



Audit of documentation

Company Audit

On the 17th of June the PowerGrid auditor team arrived at the plant. It consisted of:

Mr. Velicherla Govinda Rao, Deputy General Manager;

Mr. Mahavir Prasad Rathore, Chief Manager (F & A);

Mrs. Sruti Mishra, Chief Manager (Contract Services).

The auditors were accompanied by Dr. Ashok Singh of DELCO.

An in-depth audit of the entire production process and testing cycle of high-voltage bushings lasted several days. The auditing specialists visited all workshops of the enterprise noting their modern technological infrastructure and impeccable production practices

according to the most stringent international standards.

Specific design features and operation of bushings with OIP and RIP insulation were discussed in the course of audit with the Izolyator experts, all visitors' questions received detailed coverage.

The auditors thoroughly inspected the company's

financial reports, all constituent and title documents as well as reports and conclusions from the past audits.

Any documentation on any sphere of the company's activity without exception was made available to the auditors on first demand in the “question – answer” mode.

Meeting Between FSK UES, PowerGrid and Izolyator



Trilateral talks hosted at FSK UES HQ: PowerGrid, FSK UES and Izolyator



Representatives of FSK UES at the trilateral meeting

The trilateral meeting between PowerGrid, FSK UES and Izolyator took place at the FSK UES Head Quarter on the 18th of June.

The sides discussed high-voltage bushings operation at transformer substations owned by FSK UES and

interaction aspects with Russian manufacturers of electrical equipment. PowerGrid representatives emphasized the need for improving India's existing power transmission infrastructure and expressed their interest in acquiring

advanced technologies from other countries including Russia.

In their turn, Izolyator representatives confirmed that the company was fit and ready to supply HV bushings on time and in full volume according to the requirements specified by FSK

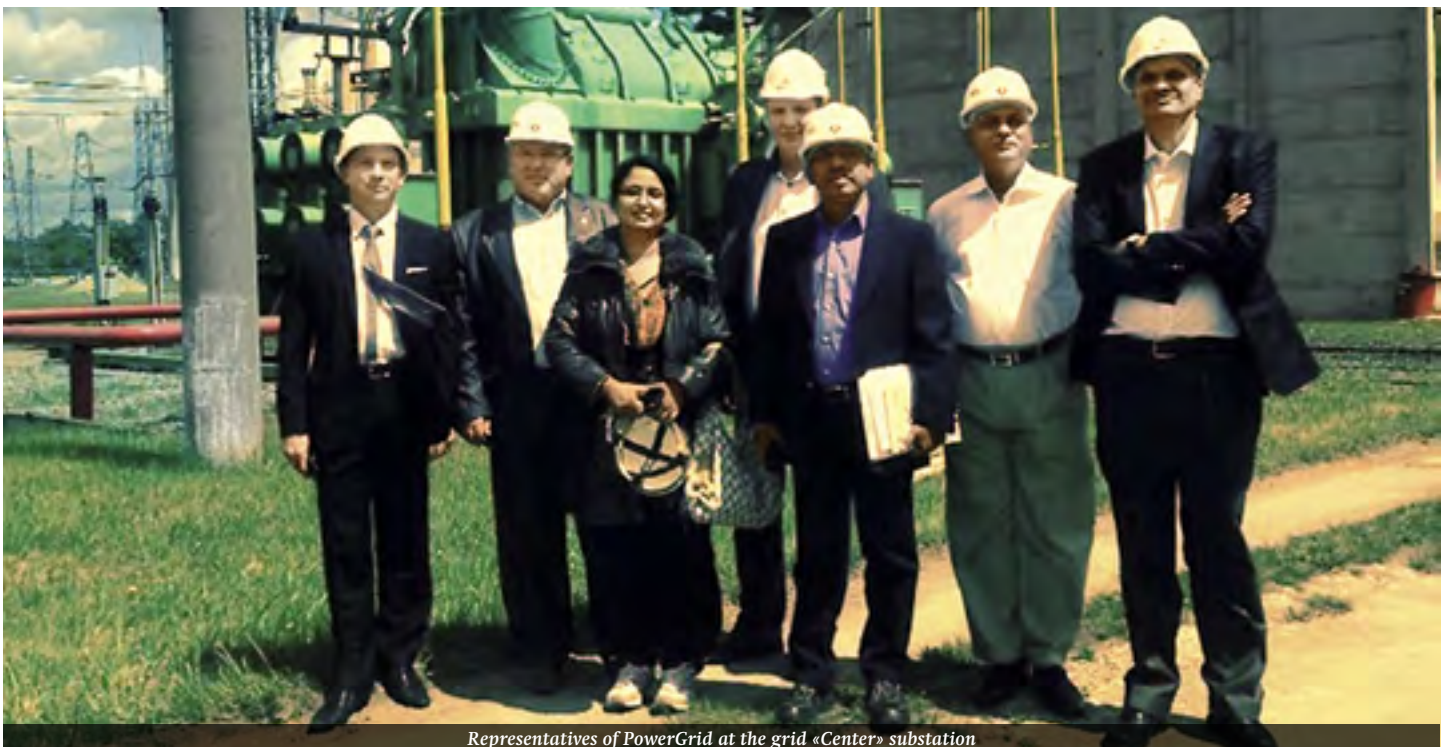
UES and PowerGrid for delivery and technical support.

FSK UES provided PowerGrid with official references on all types of Izolyator-made high-voltage bushings with RIP and OIP insulation installed at FSK UES facilities in the last 30 years.

Visiting FSK UES Facilities

PowerGrid auditing team visited three FSK UES facilities that operate Izolyator-made 500-750 kV HV bushings. The 7 year span of operation with good statistical figures received a high appraisal from the auditors and served a convincing evidence of high quality and reliability of Izolyator products.

Izolyator would like to thank operators for their time, warm reception and answers to the questions from the Indian delegates. Izolyator would also like to express gratitude to all employees who arranged those visits to FSK UES power facilities.



Representatives of PowerGrid at the grid «Center» substation

Our Appreciation to All Participants of the Meetings

The talks ended a success with all sides agreeing that cooperation would continue. Our colleagues expressed their willingness to expand interchange and share experience of innovative technologies development for construction of power transmission and distribution systems between Russian Federation and India.

Izolyator Company is grateful to:

PowerGrid:
Mr. Velicherla Govinda Rao, Deputy General Manager;
Mr. Mahavir Prasad Rathore, Chief Manager (F & A);
Mrs. Sruti Mishra, Chief Manager (Contract Services).
JSC FGC UES:
N.N.Shvets, Deputy Chairman of the Board;
V.P.Dikoy, Deputy Chairman of

the Board – Chief Engineer;
A.M.Yepifanov, Deputy Chief Engineer for Operation of Process Equipment;
K.A.Lunin, Head of Department for Development of Production Technologies for Power Engineering Equipment;
I.L.Arkipov, Acting Head of Department for Innovative Development;
A.A.Konovalov, Head of Substations Department;
A.N.Ivashkin, Section Manager, Department for Development of Production Technologies for Power Engineering Equipment;
V.I.Sitnikov, Chief Expert, Department for Development of Production Technologies for Power Engineering Equipment.
Main Power Grid of the Center Branch:
S.A.Demin, Director;

Y.V.Lyapunov, First Deputy Managing Director – Chief Engineer;
A.V.Gorbunov, Director of Operation of Process Equipment;
S.B.Lopukhov, Head of Equipment Servicing and Diagnostics;
S.V.Smekalov, Deputy Head of Substation Equipment Servicing and Diagnostics.
Bely Rast Substation:
A.V.Dydykin, Manager of Bely Rast district of the Main Power Grid of the Center's Moscow enterprise.
The Black Earth Enterprise of the Main Power Grid of the Center:
A.N.Tselysh, Director;
S.V.Guschansky, First Deputy Managing Director – Chief Engineer;
V.A.Metelev, Deputy Chief

Engineer for Operation of Process Equipment.
Metallurgicheskaya Substation:
V.V.Karnishin, Substation Manager.
Stary Oskol Substation:
A.P.Timoshev, Substation Manager.
Izolyator Company:
A.Z.Slavinsky, Chairman of the Board of Directors;
I.D.Panfilov, Commercial Director and First Deputy CEO;
A.A.Savinov, Director for Strategic Sales;
A.A.Shornikov, Department Manager, Sales;
N.E.Mazova, Strategy & Business Development Leader.
DELCO:
Dr. Ahok Kumar Singh, representative of Izolyator Company in India.

Results of the Audit

The audit run by PowerGrid showed that Izolyator is equipped with high level technology, world class production management system and has sufficient production capacity. The company's products conform to the most stringent international standards. The Indian counterparts witnessed the high

reliability, long service life and serviceability of Izolyator-made bushings installed at operating facilities across the central region of Russia.

The key achievement of the audit and subsequent talks with the Indian side is Izolyator's recognition as reliable partner and the status of an authorized

supplier of high-voltage power-engineering equipment for PowerGrid's needs.

Izolyator has become the first Russian company granted with such a high status from PowerGrid Corporation of India Ltd. This standing offers widest prospects for a strategic business partnership and long-term cooperation

between the Russian and Indian companies.

<http://apps.powergridindia.com/IMS/ComponentList/PowerXformer%20upto%20420%20kVCM%20List.pdf>

<http://apps.powergridindia.com/IMS/ComponentList/PowerXformer%20for%20765%20kV%20CM-List.pdf>

Results of the Tender

The success of the audit and received status of an authorized supplier to PowerGrid has made way for Izolyator to participate in the open tender for the supply of more than 215 bushings rated for 420 kV (corresponding to the 550 kV voltage class in Russia) and compete with the world's leading manufacturers of high-voltage equipment. At the entry stage of the tender Izolyator submitted complete

set of financial and technical documentation including product conformity certificates, licenses, etc. which made our way into the shortlist. At the end Izolyator was announced the first runner-up to the winner in HV bushings with RIP insulation category. No other Russian company has ever achieved these results on the Indian energy equipment market yet.

Overall Results

The most prominent achievement and prospective result of our work is that it opens a way for dialogue and sharing experience between the Russian-based Federal Grid Company and the Indian based PowerGrid Corporation of India Ltd. Both sides expressed their interest and willingness to develop this dialogue between Russia and India through an open exchange of experience in the field of transmission and distribution of power, operation

of power-engineering equipment and innovative development of large-scale energy systems.

Izolyator expresses its gratitude to PowerGrid for their interest, a highly professional audit of the company and openness to exchange experience with FSK UES.

Izolyator is especially grateful to FSK UES for their support of the Russian manufacturer of high-voltage equipment and direct and open dialogue with PowerGrid.