



Ministry of Education and Science of the Russian Federation

Ministry of Energy of the Russian Federation

Ivanovo State Power Engineering
University (ISPU)

Open Joint Stock Company "System Operator of the United Power System"
(SO UPS)

"Russian National Committee of International Council on Large Electric
Systems" (CIGRE RNC)

Federal Grid Company of the Unified Energy System (JSC "FGC UES")

**"Electrical Power Engineering: Viewpoint of the Youth
– 2015"**



PROGRAMME
of the 6-th International
Scientific and Technical Conference

November 9-13, 2015

Ivanovo

Conference organizers



System Operator of the United Power System



Ivanovo State Power Engineering University (ISPU)



Федеральная Сетевая Компания
Единой Энергетической Системы

Federal Grid Company of the Unified Energy System



Russian National Committee of International Council on
Large Electric Systems (CIGRE RNC)



Charitable Foundation "Reliable Rising Generation"

Under the aegis of



Ministry of Education and Science of the Russian
Federation



МИНИСТЕРСТВО ЭНЕРГЕТИКИ
РОССИЙСКОЙ ФЕДЕРАЦИИ

Ministry of Energy of the Russian Federation

Informational partners



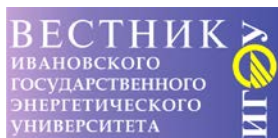
Journal “ELECTRIC ENERGY. Transmission and distribution”



Journal “ENERGETIK” (Power Engineering Specialist)



Journal “ELEKTRICHESKIE STANTSII” (Power Plants)



Journal “Vestnik of Ivanovo State Power Engineering University” (“Vestnik IGEU” journal)

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Tatiana Shadrikova, organizing committee member of RNC CIGRE Youth section, lecturer of ISPEU.

* **COORDINATING GROUP** – public conformation for organizing and informational maintenance of the conference

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Vladimir Lebedev, Candidate of Technical Sciences, Head of Electric power systems automatic control department of Ivanovo State Power Engineering University (Ivanovo)

Andrey Murzin, Candidate of Technical Sciences, Head of Electric systems department of Ivanovo State Power Engineering University (Ivanovo)

Vladimir Nagai, Doctor of Engineering Sciences, Professor, Head of Electric stations and electrical power systems department of South-Russian State Polytechnic University (Novocherkask)

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engineering and relay protection department of Chuvash state university, chairman of the board of JSC "All-Russian Research Institute for Flow Metering" (Cheboksary);

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Vladimir Polishchuk, Candidate of Technical Sciences, Head of Industry Power Supply of Samara State Technical University (Samara);

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Yuri Khrushchev, Doctor of Engineering Sciences, Professor of Electrical networks and electrical engineering department of National Research Tomsk Polytechnic University (Tomsk);

Vladimir Shuin, Doctor of Engineering Sciences, Professor of Electric power systems automatic control department of Ivanovo State Power Engineering University (Ivanovo)

Kubis Andreas, diploma engineer of Energy and electrical systems department of Technical University of Dortmund (Technische Universität Dortmund) (Dortmund, Germany);

Rehtanz Christian, Head of Energy and electrical systems department of Technical University of Dortmund (Technische Universität Dortmund) (Dortmund, Germany);

Vannier Jean-Claude, director of Power Engineering department of Higher Electrotechnical School (École supérieure d'électricité, Supélec) (Paris, France);

Hermanns Kevin, diploma engineer of Power electronics department of Technical University of Darmstadt (Technische Universität Darmstadt) (Darmstadt, Germany);

Griepentrog Gerd, Head of Power electronics department of Technical University of Darmstadt (Technische Universität Darmstadt) (Darmstadt, Germany).

About the Conference

The conference is devoted to the seventieth anniversary of HVDC Power Transmission Research Institute (now JSC "Scientific and Technical Centre of United Power System") which was founded under the order of USSR Council of People's Commissars on 18 October 1945 to solve the problems connected with the implementation of HVDC transmission and Country Unified Power System creation.

CONFERENCE GOAL is to enhance the development of scientific and creative potential of young researchers in the field of electric power engineering and to create personnel reserve for System Operator branches and for research and educational institutions.

CONFERENCE OBJECTIVES are to give presentations and discuss the latest scientific research results and achievements in the field of electrical power industry, to establish and strengthen scientific ties of young researchers and postgraduate students as well as to involve master students in research activities.

Conference Background



The 5-th conference. *National Research Tomsk Polytechnic University (2014).*



The 4-th conference. *South-Russian State Polytechnic University (2013).*



The 3-rd conference. *Ural Federal University (2012).*



The 2-nd conference. *Samara State Technical University (2011).*



The 1-st conference. *Ural Federal University (2010).*

CONFERENCE TOPICS

1. ELECTRIC POWER SYSTEM SIMULATION AND CONTROL
2. ELECTRICITY DISTRIBUTION AND LOCAL POWER GENERATION
3. ROTATING ELECTRICAL MACHINES
4. TRANSFORMERS, HIGH VOLTAGE LINES AND SUBSTATION EQUIPMENT
5. HVDC AND POWER ELECTRONICS
6. RELAY PROTECTION AND CONTROL
7. ELECTRICITY MARKETS AND FUTURE POWER SYSTEM DEVELOPMENT
8. THERMAL AND NUCLEAR POWER STATIONS
9. MACHINERY CONSTRUCTION FOR POWER INDUSTRY
10. INFORMATION SYSTEMS, TELECOMMUNICATIONS AND CYBER SECURITY ISSUES IN ELECTRICAL POWER INDUSTRY
11. EDUCATIONAL TECHNOLOGIES AND TRAINING PROGRAMS FOR ELECTRICAL POWER INDUSTRY

PROGRAM

of the 6th International Scientific and Technical Conference "Electrical Power Engineering: Viewpoint of the Youth – 2015"

Date:
09 – 13 November 2015

Venue:
Ivanovo,
Rabfakovskaya street, 34
Ivanovo State Power Engineering
University (ISPU)

Time	Activity	Venue
November 9, Monday		
According to the individual schedule	Arrival time	
09:00–14:00	Registration	Building "B" lobby
14:00–17:00	Opening Ceremony. Plenary session	Building "B" assembly hall
17:30–19:30	Welcoming stand-up meal	Building "B" dining hall
November 10, Tuesday		
09:00–10:30	Sessions (Sections: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11)	
10:30–11:00	Coffee break	
11:00–13:00	Sessions (Sections: 1, 2, 4, 6, 7, 8, 11)	
13:00–14:00	Lunch break	Building "B" dining hall
14:00–15:30	Sessions (Sections: 1, 2, 4, 6)	
15:30–16:00	Coffee break	
16:00–18:00	Sessions (Sections: 1, 4, 6)	
18:00–21:00	Social programme	Fitness center "Olimpia"
November 11, Wednesday		

* The event will take place in the sport complex "Olympia" (www.srk-olimpiya.ru). The event includes the visit of a multi season skating track, a rollerdrome, a field for mini football, volleyball, badminton and tennis grounds, a pool and etc.

09:00–10:30	Sessions (Sections:1, 4, 6)	
10:30–11:00	Coffee break	
11:00–13:00	Sessions (Sections: 1, 4, 6)	
13:00–14:00	Lunch break	Building "B" dining hall
14:00–16:00	Sessions (Section1). Meeting with students studying German?	
16:30–18:00	Social programme	Room "B-301"
November 12, Thursday		
10:00–11:30	Wrap-up. Conference closing remarks.	Building "B" assembly hall
12:30–18:00	Visit to the state district power station (Kostroma City)	
November 13, Friday		
According to the individual schedule	Departure	

CONFERENCE WORK SCHEDULE
of the 6th International Scientific and Technical Conference
"Electrical Power Engineering: Viewpoint of the Youth – 2015"

Time	Date			
	09.11.2015	10.11.2015	11.11.2015	12.11.2015
09:00–10:30	Registration (Building "B" lobby)	Sessions Section 1 (B-301) Section 2 (V-205) Section 3 (A-210) Section 4 (V-225) Section 5 (V-207) Section 6 (V-204) Section 7 (A-209) Section 8 (V-435) Section 9 (A-208) Section 10 (V-356) Section 11 (B-241)	Sessions Section 1 (B-301) Section 4 (V-225) Section 6 (V-204)	10:00–11:30 Closing remarks. Wrap-up (Building "B" assembly hall)
10:30–11:00		Coffee break B-201 (Sections 1, 7, 11), V-101 (Sections 4, 6, 8)	Coffee break B-201 (Section 1), V-101 (Sections 4, 6)	
11:00–13:00		Sessions Section 1 (B-301) Section 2 (V-205) Section 4 (V-225) Section 6 (V-204) Section 7 (A-209) Section 8 (V-435) Section 11 (B-237)	Sessions Section 1 (B-301) Section 4 (V-225) Section 6 (V-204)	
13:00–14:00		Lunch (Building "B" dining hall)	Lunch (Building "B" dining hall)	
14:00–15:30		Opening Ceremony. Plenary session (Building "B" assembly hall)	Sessions Section 1 (B-301) Section 2 (V-205) Section 4 (V-225) Section 6 (V-204)	
15:30–16:00	Coffee break B-201 (Section 1), V-101 (Sections 4, 6)			
16:00–18:00	Sessions Section 1 (B-301) Section 4 (V-225) Section 6 (V-204)			

Conference programme

November 9, Monday		
14:00–17:00	Conference Opening. Plenary Speakers	Building "B" assembly hall
<p>1. Opening</p> <p>2. Fedor Veselov, Candidate of Economics, Head of Electric power industry development and reformation department, Institute of Electric Power Engineering Development (Russian Academy of Science), <i>Long-term development of power engineering as the country support infrastructure</i></p> <p>3. Pavel Ilyushin, Candidate of Technical Sciences, Deputy Director and Chief Inspector of JSC "UES technical inspection" <i>The analysis of national experience in local power generation objects implementation and prospects of their further application in UES of Russia and in isolated districts</i></p> <p>4. Nikolai Voropai, Doctor of Engineering, Professor, Director of Institute of Energy Systems named after L.A. Melentyev, the Siberian Branch of Russian Academy of Sciences, Academician (Corresponding Member) of Russian Academy of Sciences, Head of the Department of Electricity Supply and Electric Engineering in Irkutsk State Technical University <i>Electric Power System Expansion Planning</i></p> <p>5. Artem Korolev, Director of the Fund "Reliable Rising Generation" <i>Search and selection of talented students for power engineering companies: problems and solutions</i></p> <p>6. Peter Bartholomey, Doctor of Technical Sciences, Professor of Ural Federal University named after the First President of Russia Boris Yeltsin <i>Higher technical education and energy security of Russia</i></p> <p>7. Yuri Kulikov, Candidate of Technical Sciences, Leading expert of JSC "System Operator of United Power System" <i>Corporative training system for engineering personnel in Russia</i></p>		

Section 1

ELECTRIC POWER SYSTEM SIMULATION AND CONTROL

CO-CHAIRS:

- **Vladimir D'achkov**, Candidate of Technical Sciences, chief dispatcher deputy on modes of JSC "SO UPS";
- **Andrey Murzin**, Candidate of Technical Sciences, Head of Electric systems department of Ivanovo State Power Engineering University (Ivanovo)
- **Aleksandr Bondarenko**, Advisor to the Director of JSC "System Operator of United Power System" (Moscow);
- **Dmitry Atamankin**, C2 subcommittee coordinator of RNC CIGRE

Your presentation should last up to 10 min. You will have 5 min for answering.

November 10, Tuesday		
09:00–10:30	Regular sessions	Aud. "Б–301"
<p>1. Pavel Matrenin, <i>Elena Tretyakova</i>; scientific adviser: Doctor of Technical Sciences,, Professor Vadim Manusov. <i>Novosibirsk State Technical University</i> Optimizing the allocation of reactive power sources in power supply systems by Swarm Intelligence algorithms</p> <p>2. Dmitrii Maksimenko , <i>Candidate of Technical Sciences Vladimir Neujmin</i>; scientific adviser: Doctor of Technical Sciences Petr Erohin <i>"STC UPS"</i> State estimation implementation based on optimal power flow algorithm in RastrWin3</p> <p>3. Dmitrii Maksimenko , <i>Aleksandr Alexandrov, Vladimir Neujmin</i>; scientific adviser: Doctor of Technical Sciences Petr Erohin <i>"STC UPS"</i> Telemetry binding model validation and rough errors identification in «RastrWin3»</p> <p>4. Evgeniy Filin , <i>Candidate of Technical Sciences Anton Prokhorov</i>; scientific adviser: Doctor of Technical Sciences, Professor Yuriy Khrushchev <i>National Research Tomsk Polytechnic University</i> Construction concept of all-mode equivalent subsystems of electric power systems</p>		

<p>5. Evgenii Semshchikov; scientific adviser: Candidate of Technical Sciences, docent Anna Glazunova Melentiev Energy Systems Institute SB Russian Academy of Sciences Detecting systematic errors in synchronized phasor measurements</p>		
<p>6. Olga Vozisova; scientific adviser: Candidate of Technical Sciences, docent Stanislav Shelug Ural Federal University named after B.N. Yeltsin Reactive power in non-sinusoidal systems</p>		
10:30–11:00	Coffee break	Aud. Б–201
11:00–13:00	Regular sessions	Aud. "Б–301"
<p>7. Aleksandr Lazarev; scientific adviser: Doctor of Technical Sciences, Professor Vladimir Goryachev Penza state university, Branch of Joint-stock Company «System Operator of the United Power System» Regional dispatching office of Penza Calculation of parameters of compensated and customizable four-pole to increase the throughput of the lines of long power transmission</p>		
<p>8. Maksim Prudov, Doctor of Technical Sciences Petr Erokhin; scientific adviser: Candidate of Technical Sciences, docent Viktor Davydov Open Join-stock Company System Operator of the United Power System branch – ODU of Siberia, Open Join-stock Company System Operator of the United Power System, East Siberia State University of Technology and Management Studying of marginal states of power system models</p>		
<p>9. Denis Baltin, scientific adviser: lecturer Sergey Yuferev Sverdlovsk Regional Dispatch Office – “SO UPS”, JSC Branch, Ural Federal University named after B.N. Yeltsin Infinity Bus Influence on the Trajectory of Pulling the Operation Point into Existence Domain</p>		
<p>10. Vyacheslav Petrov, Candidate of Technical Sciences Andrei Almendejev; scientific adviser: Doctor of Technical Sciences, Professor Viktor Kotenev Samara State Technical University; the branch of JSC «SO UPS» - «Samara RDO» Control of power flows during operation of the electrical system in emergency mode</p>		
<p>11. Vyacheslav Petrov, Andrei Almendejev; scientific adviser: Doctor of Technical Sciences, Professor Viktor Kotenev Samara State Technical University; the branch of JSC «SO UPS» - «Samara RDO»</p>		

Using voltage static characteristic of large load node in liquidation emergency mode of electric energy systems

12. **Aleksey Suvorov**, Candidate of Technical Sciences Almaz Sulaymanov; scientific adviser: Doctor of Technical Sciences, Professor Alexander Gusev

National Research Tomsk Polytechnic University

The concept of guaranteed verification electric power system simulation tools

13. **Elena Aksaeva**; scientific adviser: Candidate of Technical Sciences docent Anna Glazunova

Energy Systems Institute, SB Russian Academy of Sciences

Online available transfer capability definitions

14. **Dmitrii Bliznyuk**, Pavel Kovalenko; scientific adviser: Doctor of Technical Sciences, Professor Aleksandr Berdin

Ural Federal University named after the first President of Russia B.N. Yeltsin

Defining the instantaneous power of alternating current in electromechanical transients

13:00–14:00

Lunch break

Building "B" dining hall

14:00–15:30

Regular sessions

Aud. "Б–301"

15. **Andrey Volkov**

The Branch of Open Society «The System Operator of the Unified Power System» Tumen RDU

Analysis implemented in software approach to automation calculation of allowed power flow Application software and the need for the need for its development

16. **Kirill Pushkov**, Oleg Grunin; scientific adviser: Doctor of Technical Sciences, Professor Ivan Suvorov

Transbaikal State University

Perfection of models and analysis methods of the steady modes of electrical systems

17. **Egor Lebedev**, Candidate of Technical Sciences Elena Kotova, Igor Nelubin; scientific adviser: Doctor of Technical Sciences, Professor Petr Bartolomey

Filial branch of "System Operator of the United Power System", JSC, Filial branch of "System Operator of the United Power System", JSC, Sverdlovsk Regional Dispatch Office; Ural Federal University named after the First President of Russia B.N. Yeltsin

The research of influence on the quality of power system state estimation the a priori filtering and synchronized vector measurements

18. **Elena Kochneva**; scientific adviser: Doctor of Technical Sciences, Professor Andrew Pazderin

<p><i>Ural Federal University named after the first President of Russia B.N. Yeltsin</i></p> <p>Improving responsible energy measurements validity using method of verifying equations groups</p> <p>19. Sergei Semenenko, L. Dudina; scientific adviser: Doctor of Technical Sciences, Professor Petr Bartolomey</p> <p><i>Ural Federal University named after the first President of Russia B.N. Yeltsin</i></p> <p>Phasor Measurements Number Minimization for Accelerated Power Flow Calculations</p> <p>20. Rustam Valiev; scientific adviser: Doctor of Technical Sciences, Professor Vladislav Oboskalov</p> <p><i>Ural Federal University named after the first President of Russia B.N. Yeltsin</i></p> <p>Supplied demand algorithm considering branch outages for generation adequacy indices calculation</p>		
15:30–16:00	Coffee break	Aud. Б–201
16:00–18:00	Regular sessions	Aud. "Б–301"
<p>21. Anastassiya Khorun; docent Natalia Baceva</p> <p><i>National Research Tomsk Polytechnic University</i></p> <p>Algorithm for calculation of static load characteristics for the industrial enterprise by analytical approach</p> <p>22. Vladimir Fedyushin, Danil Ignatiev, I. Kirpikova; scientific adviser: Doctor of Technical Sciences, Professor Vladislav Oboskalov</p> <p><i>ITP of the Ural Branch of the Russian Academy of Science; UrFU named after the first President of Russia B.N. Yeltsin</i></p> <p>Security analysis by means of the most valuable elements revealing</p> <p>23. Kristina Kuprina; scientific adviser: Candidate of Technical Sciences, docent Liliya Tolstikhina</p> <p><i>Sayano-Shushenskaya branch of the Siberian Federal University</i></p> <p>The calculation of the optimal distribution of active power of hydroelectric power station</p> <p>24. Viktoria Antsiferova; scientific adviser: Candidate of Technical Sciences, docent Liliya Tolstikhina</p> <p><i>Sayano-Shushenskaya branch of the Siberian Federal University</i></p> <p>Influence of the optimum working hours of HPS on drawdown in the period of lack of water</p> <p>25. Anna Shabalina, Alexey Kalachev</p> <p><i>"System Operator of the United Power System", Joint Stock Company RDU Republic of Bashkortostan</i></p> <p>The influence of the duration of the period of low temperatures</p>		

- during the winter period by the amount of consumption of electric power in the power system of the Republic of Bashkortostan
26. **Vladimir Hatunickij**; *scientific adviser Candidate of Technical Sciences* **Igor Nikiforov**
«SO UPS» JSC «Novgorod Regional Dispatching Offices»
Mode optimization of reactivity power for improving transient stability of Pskovskaya GRES generators
27. **Anastasiya Krubtsova**; *scientific adviser Candidate of Technical Sciences docent Alexey Malafeev*
Magnitogorsk State Technical University named after G.I. Nosov
Forecasting of electric loadings of the metallurgical enterprise in view of volume of manufacture of the ordered metal products
28. **Ivan Polyakov**; *scientific adviser: Doctor of Technical Sciences, Professor Stanislav Khomutov*
Altai State Technical University named after I.I. Polzunov
Program for calculating admissible operation modes in controlled power system sections
29. **Olga Rybasova**, *Svetlana Kostyukova*; *scientific adviser: Doctor of Technical Sciences, Professor Yuri Kononov*
North-Caucasus Federal University
Determination equivalent circuit parameters overhead line 750 kV according to vector registrars

November 11, Wednesday		
09:00–10:30	Regular sessions	Aud. "Б–301"
<p>1. Svetlana Kostyukova, Olga Rybasova, Kirill Kostyukov; scientific adviser: Doctor of Technical Sciences, Professor Aleksandr Stepanov North-Caucasus Federal University Identification of parameters for PI - equivalent model of the transmission line on the measurements of PMU-devices</p> <p>2. Dmitry Kormilicyn, Candidate of Technical Sciences Ilya Moskvina; scientific adviser: Candidate of Technical Sciences, docent Valeriy Golov Ivanovo State Power Engineering University named after V.I. Lenin Controlled power transmission lines with controlled series compensation in electric energy system</p> <p>3. Igor Ivanov; scientific adviser: Candidate of Technical Sciences, docent Andrey Murzin Ivanovo State Power Engineering University named after V.I. Lenin Nonuniform transmission line parameter estimation based on synchrophasor measurements</p> <p>4. Evgenij Zaytsev; scientific adviser: Candidate of Technical Sciences, docent Vladimir Lebedev Ivanovo State Power Engineering University named after V.I. Lenin The algorithm for conductor temperature estimation of single-phase high-voltage cables with XLPE insulation in real time</p> <p>5. Sergey Stepanov RDO of the North Caucasian ES, «System Operator of the United Power System», JSC Using Tellegen's theorem for the identification of elements of electrical networks parameters problem solving</p> <p>6. Roman Naumkin; scientific adviser Candidate of Technical Sciences docent Ivan Voronov Integrated Dispatcher Control of Siberia, branch of «SO UPS» The performance assessment commands for voltage regulation</p>		
10:30–11:00	Coffee break	Aud. Б–201
11:00–13:00	Regular sessions	Aud. "Б–301"
<p>7. Gregory Shabalin, Candidate of Technical Sciences Pavel Chusovitin, Valery Tashchilin, Pavel Bannykh; scientific adviser: Doctor of Technical Sciences Professor Andrey Pazderin Ural Federal University named after the first President of</p>		

Russia B.N. Yeltsin

Voltage stability analysis using quadratic objective function and Newton's method

8. **Evgenii Kokorin** , *Stepan Dmitriev, Alexandra Khalyasmaa, Doctor of Technical Sciences docent Sergey Kokin Ivanovo State Power Engineering University named after V.I. Lenin; Ural Federal University named after the first President of Russia B.N. Yeltsin*
Fuzzy graph model for electric power objects state assessment
9. **Petr Val**, *Candidate of Technical Sciences docent, Anastasiya Dumanitskaya, Aleksandr Voevoda Khakas Technical Institute – branch of Siberian Federal University*
Application of Regression Trees for Short Term Electricity Demand Forecasting
10. **Darina Firsova**; *scientific adviser: Candidate of Technical Sciences docent Stanislav Shelyug Ural Federal University named after the first President of Russia B.N. Yeltsin*
Skin effect influence on the value of energy and power losses
11. **Alena Vinter**, *Maria Shorikova; scientific adviser Aleksander Tavlintcev Ural Federal University named after the first President of Russia B.N. Yeltsin*
Measurement data cleaning based on cluster analysis method for solving static load voltage models identification problem
12. **Maria Shorikova**, *Candidate of Technical Sciences Anton Suvorov; scientific adviser Aleksander Tavlintcev Ural Federal University named after the first President of Russia B.N. Yeltsin*
Load response forecasting for solving static load voltage models identification problem
13. **Evgenij Tihomirov** ; *scientific adviser Candidate of Technical Sciences docent Vladislav Sen'ko Samara State Technical University*
Research static aperiodic stability electric power system is based on solution of equations limit load operation
14. **Natalia Kiryanova**, *O. Gorte, D. Kataev; scientific adviser V. Ziranov Novosibirsk State Technical University*
Comparative analysis of methods for evaluating the dynamic properties of power systems

13:00–14:00

Lunch break

Building "B" dining hall

14:00–16:00	Regular sessions	Aud. "Б–301"
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Section 2

ELECTRICITY DISTRIBUTION AND LOCAL POWER GENERATION

CO-CHAIRS:

- **Pavel Ilyushin**, Candidate of Technical Sciences, Deputy General Director – Chief Inspector of CJSC "Technical Inspection UES" (Moscow);
- **Dmitry Ivanovsky**, main specialist of Power engineering objects compulsory checking department of CJSC "Technical inspection of UPS", C6 subcommittee secretary of RNC CIGRE;
- **Pavel Chusovitin**, Candidate of Technical Sciences Docent of "Automated electrical systems» department RNC CIGRE representative in C6 research committee of CIGRE

Your presentation should last up to 10 min. You will have 5 min for answering.

November 10, Tuesday		
09:00–10:30	Regular sessions	Aud. B–205
<ol style="list-style-type: none">1. Andrey Marchenko; <i>scientific adviser: Doctor of Technical Sciences, Professor Alexander Fishov Novosibirsk State Technical University</i> Modeling and Analysis of the Impact of Distributed Generation on Power Quality in the Electric Network2. Rashid Baembitov; <i>scientific adviser Dmitriy Salenik National Research University "Moscow Power Engineering Institute"</i> The Impact of Distributed Generation on Power Grid3. Georgiy Chekan, <i>Anna Baksht; scientific adviser: Candidate of Technical Sciences docent Olga Bushueva Ivanovo State Power Engineering University named after V.I. Lenin</i> Choice the Variant of Reconstruction of the Site of the Distributive Electrical Network of the Yaroslavl area taking into account Reliability Indexes4. Konstantin Suslov, <i>Candidate of Technical Sciences docent, D. Litkin, D. Gerasimov</i>		

Irkutsk National Research Technical University

A simplified mathematical model of the gas turbine plant as part of an isolated power system

5. **Nikita Mukhlynin**; scientific adviser: Doctor of Technical Sciences Professor Andrey Pazderin

Ural Federal University named after the first President of Russia B.N. Yeltsin

Solution of the distribution grid control problem to its operation mode optimization

6. **Nikolay Gerasimov**; scientific adviser: Doctor of Technical Sciences docent Yuri Koubarkov

The Regional Dispatching Office of the Samara Area, Samara State Technical University

Optimization of conditions and the reduction of energy losses in electric networks of oilfields

10:30–11:00

Coffee break

Aud. B–101

11:00–13:00

Regular sessions

Aud. B–205

7. **Anton Loskutov**, Dmitriy Zyrin; scientific advisor: Doctor of Technical Sciences Professor Aleksey Loskutov

Nizhny Novgorod State Technical University n.a. R.E. Alekseev

Investigation of electrical properties of a closed distribution network of hexagonal type and development multi-agent system management of node load

8. **Ivan Morozov**; scientific advisor: Doctor of Technical Sciences Professor A. Zasiipkin

South-Russian State Polytechnical University (Novocherkassk Polytechnical Institute) behalf Platov M.I.

Bilateral partitioned supply of consumers load from energy supply system and small generation facility with increasing of power consumption

9. **Ivan Lipuzhin**, Candidate of Technical Sciences Andrey Shalukho; Doctor of Technical Sciences Docent Elena Sosnina

Nizhny Novgorod State Technical University n.a. R.E. Alekseev

Evaluation of local power supply system stability with the wind-diesel power plant based on imitating modeling

10. **Andrey Shalukho** Candidate of Technical Sciences, Alexander Kechkin ; Doctor of Technical Sciences Docent Elena Sosnina

Nizhny Novgorod State Technical University n.a. R.E. Alekseev

Questions of creation of virtual power plants on the basis of distributed power objects

11. **Dmitry Zyrin**, Anton Loskutov; scientific advisor: Doctor of Technical Sciences Professor Aleksey Loskutov

Nizhny Novgorod State Technical University n.a. R.E. Alekseev

Balanced-zone conception to creating algorithms post fault reconfiguration of distribution network

12. **Evgeniy Kryukov**; scientific advisor: Doctor of Technical Sciences Docent Elena Sosnina

Nizhny Novgorod State Technical University n.a. R.E. Alekseev

The application of solid oxide fuel cells in power supply systems

13. **Irina Lukicheva** ; scientific advisor: Doctor of Technical Sciences Professor Aleksandr Kulikov

Nizhny Novgorod State Technical University n.a. R.E. Alekseev

Filtering of sampling synchronized phazor measurements in hexagonal electrical grids

14. **Anton Gavrilov**; scientific advisor: Candidate of Technical Sciences Professor Michail Goldshtein

Chelabinskoe RDU, «SO UPS», South Ural State University

The connection to the electric power grid of synchronous generator with variable rotation speed

15. **Roman Andreev** , S. Smolovik

Joint Stock Company «Scientific and Technical Center of Unified Power System»

Algorithm for power flows control in a stand-alone electrical complex on the base of wind turbine

13:00–14:00	Lunch break	Building "B" dining hall
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Section 3

ROTATING ELECTRICAL MACHINES

Chairman:

- **Yuri Kazakov**, Doctor of Engineering Sciences, Professor, Head of Electromechanics department of Ivanovo State Power Engineering University n.a. V.I. Lenin (Ivanovo);

Your presentation should last up to 10 min. You will have 5 min for answering.

November 10, Tuesday		
09:00–10:30	Regular sessions	Aud. A–210
1. Nikolay Shvetsov ; <i>scientific advisor: Doctor of Technical Sciences Professor Yuriy Kazakov</i> <i>Ivanovo State Power Engineering University named after V.I. Lenin</i> Energy efficiency of tractive induction motors with supplying by semiconductor frequency converters		
2. Nikolay Palukhin , <i>Aleksandr Andrienko; scientific advisor lecturer Aleksey Vasilev</i> <i>National Research Tomsk Polytechnic University</i> Study of the possibility of application wavelet analysis for diagnostics of electric equipment		
3. Valeriy Tashchilin , <i>Pavel Chusovitin, Grigoriy Shabalin; scientific advisor: Doctor of Technical Sciences Professor Andrey Pazderin</i> <i>Ural Federal University named after the first President of Russia B.N. Yeltsin</i> Coordinated PSS tuning in multi-machine power system		
4. Dmitriy Kornilov ; <i>рук. д.м.н. профессор Yuriy Kazakov</i> <i>Ivanovo State Power Engineering University named after V.I. Lenin</i> Development of design system and improving the construction of the axial-flux permanent magnet generator		
5. Dmitry Sychev , <i>Artem Zhuravlev, Nikita Savosteenko; рук. д.м.н. профессор Yuriy Usinin</i> <i>South Ural State University</i> The electric drive development for industrial objects with heavy operating conditions		
6. Yakov Shmarin ; <i>рук. д.м.н. профессор Vladimir Kodkin</i> <i>South Ural State University</i> Optimization method of frequency control system of electric drives based on permanent magnet synchronous motor		

<p>7. Yakov Zverev; <i>рук. д.т.н. профессор Yuriy Kazakov</i> <i>Ivanovo State Power Engineering University named after V.I. Lenin</i> Thermal analysis of traction asynchronous motor hybrid transport</p>		
<p>8. Ruslan Zamanov, <i>Umrullah Magomedveliev</i> <i>The Branch of JSC "SO UPS" Dagestan RDU</i> The prospect of asynchronized hydrogenerators with variable speed at the designed HPPS of Dagestan ergosystem</p>		
13:00–14:00	Lunch break	Building "B" dining hall

Section 4

TRANSFORMERS, HIGH VOLTAGE LINES AND SUBSTATION EQUIPMENT

CO-CHAIRS:

- **Aleksandr Nazarichev**, Doctor of Engineering Sciences, Academician of Russian Academy of Electrical Sciences, Professor, Rector of St. Petersburg Energy Institute of Advanced Studies (St. Petersburg);
- **Aleksandr Chrennikov**, Doctor of Technical Sciences, academic secretary of Scientific and technical council, department head of JSC "Research and Development Center at Federal Grid Company of Unified Energy System"
- **Aleksey Gusenkov**, Candidate of Technical Sciences, Associate Professor, Head of Electric power stations, substations and electrical equipment diagnostics department, Ivanovo State Power Engineering University n.a. V.I. Lenin (Ivanovo);
- **Viktor Lapshin**, Candidate of Technical Sciences, Associate Professor of Electric power stations, substations and electrical equipment diagnostics department, Ivanovo State Power Engineering University n.a. V.I. Lenin (Ivanovo);
- **Sergey Erkov**, chief expert in organization group of maintenance and repair of cable lines, JSC "FGC UES";
- **Alexey Krivtsov**, chief expert in the department of analysis and technical solutions, JSC "FGC UES";

Each paper presentation should be scheduled for 10 minutes to be followed by 5-minute question time.

November 10, Tuesday		
09:30–10:30	Regular sessions	Room V–225
1. Artem Pivovarov ; scientific advisor: A.S. Dobrosotskikh, senior		

lecturer

Samara State Technical University

A mathematical model of electric resistance of the contact connection with electroculogram

2. **Egor Tashchilov**, *Natal'ya Denisova, Tat'yana Brostilova; scientific advisor: Yliya Shatova, Candidate of Technical Sciences Associate Professor*

Penza state university, Branch of JSC System Operator of the United Power System, Penza Regional dispatching office

The law of distribution of 110 kV breaker refusals with regard to their seasonal instability

3. **Natal'ya Denisova**, *Tat'yana Brostilova, Yliya Shatova; scientific advisor: Vladimir Goryachev, Doctor of Technical Sciences, Professor*

Penza state university, Branch of JSC System Operator of the United Power System, Penza Regional dispatching office

Specification of mathematical model of disturbances distribution on the 110 kV overhead power lines

4. **Anton Melnikov**, *Valentin Kolosov; scientific advisor: Sergey Ryzhov, Candidate of Technical Sciences*

Research and Development Engineering Centre 'Elektroseti'

Protection of Overhead Power Transmission Line Conductors Against Wind Impacts – Multi-Purpose Wind Vibration Damper

5. **Anton Melnikov**, *Valentin Kolosov; scientific advisor: Candidate of Technical Sciences Sergey Ryzhov*

Research and Development Engineering Centre 'Elektroseti'

Broadband helical impact vibration damper

6. **Anna-Maria Timofeeva**; *scientific advisor: Nadezhda Bur'anina, Doctor of Technical Sciences, Professor*

North-Eastern Federal University n. a. M.K. Ammosov

Development of high-voltage lines with high bandwidth

10:30–11:00

Coffee break

Room V –101

11:00–13:00

Regular sessions

Room V–225

7. **Nikolai Smotrov**, *O. Gusev, D. Cho; scientific advisor: Yuriy Gusev, Candidate of Technical Sciences, Professor*
National Research University "Moscow Power Engineering Institute"

Supercapacitors effectiveness in control DC voltage systems at substations

8. **Alexandr Kupchinov**; *scientific advisor: Yuriy Gusev, Candidate of Technical Sciences, Professor*

National Research University "Moscow Power Engineering Institute"

- Current ripples in control DC system batteries
9. **Ivan Sorokin**, *Elena Richagova*; scientific advisor: *Vladimir Levin, Candidate of Technical Sciences, Associate Professor Novosibirsk State Technical University*
Inter-repair time management to reduce the failure risk of distributive network equipment
10. **Nurzhan Kerimkulov**, *Mikhail Dolgov*; scientific advisor: *Vladimir Levin, Candidate of Technical Sciences, Associate Professor Novosibirsk State Technical University*
Transformer operation improvement on the basis of diagnostic monitoring and fuzzy logic models
11. **Sergei Bobello**; scientific advisor: *Sergei Ryzhov, Candidate of Technical Sciences, Associate Professor Research and Development Engineering Centre 'Elektroseti'*
Helical nonspinning dead-end clamp for overhead power transmission lines conductors and fiber optical cables
12. **Egor Maryushko**; scientific advisor: *Aleksandr Ovsyannikov, Doctor of Technical Sciences, Professor Novosibirsk State Technical University*
Development of recommendations for rapid diagnosis of partial discharges in gas insulated switch gear
13. **Sergej Zankovich**; scientific advisor: *Jurij Lavrov, Candidate of Technical Sciences, Associate Professor Novosibirsk State Technical University*
Protection of electrical high voltage from high frequency overvoltages
14. **Zhanat Kuneev**, *Vladimir Chistyakov, Aleksey Matveev, Ivan Nosov, Dmitry Yaroshenko*; scientific advisor: *Vladimir Ostreiko, Candidate of Technical Sciences Electrical equipment plant*
Gas-insulated switchgear 110 kV voltage

13:00–14:00	Lunch break	Building "V" dining hall
14:00–15:30	Regular sessions	Room V–225

15. **Vladimir Ignat'ev**; scientific advisor: *Valery Gol'dshtain, Doctor of Technical Sciences, Professor Samara State Technical University*
Analysis of the work of distribution transformers with high-temperature superconducting coils in abnormal conditions
16. **Olga Liyassova**; scientific advisor: *Natalya Batseva, Candidate of Technical Sciences, Associate Professor National Research Tomsk Polytechnic University*
On the possibility of determining the equivalent circuit parameters single-phase transformers online

17. **Nikita Siyaov**, Natal'ya Fomenko; scientific advisor: Sergei Slovesny, Candidate of Technical Sciences, Associate Professor
Ivanovo State Power Engineering University named after V.I. Lenin

Partial registration method development

18. **Ivan Botov**; scientific advisor: Roman Belyaev, Candidate of Technical Sciences, Associate Professor
Sayano-Shushenskaya branch of the Siberian Federal University
Optimal use of hydroelectric power plants

19. **Aleksey Andreev**, Vitaly Mozhaev, Daria Gnetova; scientific advisor: Vladimir M'akishev, Candidate of Technical Sciences, Associate Professor

Samara State Technical University

Analysis of process of re-excitation of the electric arc

20. **Sergej Vorob'ev**; Vladimir Blinov, Aleksandr Zholobov; scientific advisor: Aleksey Gusenkov, Candidate of Technical Sciences, Associate Professor

Ivanovo State Power Engineering University named after V.I. Lenin

Estimation of probability of lightning orientation in gas gaps by increasing the value of active resistance of lightning discharger

15:30–16:00

Coffee break

Room V–101

16:00–18:00

Regular sessions

Room V–225

21. **Ilya Avdienko**; scientific advisor: Andrey Kryukov, Doctor of Technical Sciences Professor

Irkutsk state transport university

Elimination of asymmetry in the electric networks feeding traction substations of the railroads

23. **Alexander Gorobets**; scientific advisor: Michail Shuvalov, Doctor of Technical Sciences

All-Russian Scientific Research and Development Cable Institute

Development of method for calculating the thermal state conditions of high-voltage XLPE cable

24. **Aleksandra Khalyasmaa**; scientific advisor: Stepan Dmitriev, Candidate of Technical Sciences

Ural Federal University named after the first President of Russia B.N. Yeltsin

Development of intellectual system of electrical grid equipment technical state assessment

25. **Sergey Islamov**, V. Cipalev; scientific advisor: Dmitry Yaroshenko, Candidate of Technical Sciences

CSJS «Plant of electrotechnical equipment»

Development of measuring electromagnetic flammable GAS-

insulated voltage transformers 110 kV

26. **Nikita Nardjuzhev**; *scientific advisor: Valery Goldshtain, Doctor of Technical Sciences, Professor*
Samara State Technical University

Methods of fight against ice on electricity transmission air-lines

28. **Anna Smirnova**, *Mariya Zotova, Evgeniy Smirnov*; *scientific advisor: Akop Martirosyan, Candidate of Technical Sciences, Associate Professor*

Ivanovo State Power Engineering University named after V.I. Lenin

Grounding of single-phase high voltage cables screens with xlpe insulation

November 11, Wednesday		
09:00–10:30	Regular sessions	Room V–225
<p>1. Andreas Hopf, Prof. Dr. Michael Rossner, Prof. Dr. Frank Berger <i>University of applied sciences Coburg</i> Dielectric strength of alternative insulation gases at high pressure</p> <p>2. Timofey Shadrikov, Alexey Gusenkov, Candidate of Technical Sciences, Vladimir Lebedev, Candidate of Technical Sciences; scientific advisor: Aleksander Sokolov, Doctor of Technical Sciences, Associate Professor <i>Ivanovo State Power Engineering University named after V.I. Lenin</i> Temperature regimes of high-voltage power cables increased frequency power transmission</p> <p>3. Anastasiya Bachurina, Timofey Shadrikov, Alexey Gusenkov, Andrey Diachkov; scientific advisor: Aleksander Sokolov, Doctor of Technical Sciences, Associate Professor <i>Ivanovo State Power Engineering University named after V.I. Lenin</i> Method for determining the electrical parameters of the equivalent circuit of high frequency transformer</p> <p>4. Nikolai Ivanov, Aleksander Kazantsev; scientific advisor: Aleksander Voronin, Candidate of Technical Sciences, Associate Professor <i>Samara State Technical University</i> Application of liquid metal current limiter in medium voltage networks</p> <p>5. Evgeny Shishkov, Ivan Krivihin; scientific advisor: Valery Goldstein, Doctor of Technical Sciences, Professor <i>Samara State Technical University</i> Mathematical model of self-compensated open transmission line</p> <p>6. Dmitrij Krjukov, Diana Sel'meneva; scientific advisor: Yury Celebrovsky, Doctor of Technical Sciences, Professor <i>Novosibirsk State Technical University</i> Raw materials optimum moisture content determination and drying mode for wire-ceramic resistors manufacturing</p>		
10:30–11:00	Coffee break	Room V–101
11:00–13:00	Regular sessions	Room V–225
<p>7. Liliya Ageeva; scientific advisor: Yury Celebrovsky, Doctor of Technical Sciences, Professor <i>Novosibirsk State Technical University</i></p>		

- Two-layer ground electrical characteristics determination for grounding devices engineering
8. **Viktor Ivonin**, Arkady Danilin, Candidate of Technical Sciences; scientific advisor: Boris Efimov, Doctor of Technical Sciences, Professor
Center for physical and technological problems of energy in Northern areas of the Kola science center of Russian Academy of science
Soil ionization under nonlinear pulsed current from grounding electrode
 9. **Michail Karasev**, G Tsepilov; scientific advisor: Leonid Litkin, Candidate of Physical and Mathematical Sciences
MPOTK "TECHNOCOMPLEKT"
Developing high-voltage circuit-breakers 6(10) kv with high-speed actuator for oil pump stations
 10. **Viktor Catolicov**, Aleksei Aryshtaev; scientific advisor: Elena Platonova, Candidate of Technical Sciences, Associate Professor
Khakas Technical Institute – branch of Siberian Federal University
Choice of hardware reactive power compensation in high-voltage electric networks with powerful nonlinear load
 11. Aleksandra Glazirina; scientific advisor: **Dmitry Levin**, Candidate of Technical Sciences
St.Petersburg Polytechnic University
Mathematical modeling of current transformer source power
 12. **Aleksei Tishkov**, Vladimir Panasyuk; scientific advisor: Eduard Fominich, Doctor of Technical Sciences, Professor
Military technical Institute of Military Academy of logistics named after army general A. Khrulev
Automation of search of the feeder with single-phase short circuit to earth in systems of power supply with the isolated neutral to 1000 volts
 13. **Alexander Budko**, Yusup Isaev; scientific advisor :Olga Vasileva
National Research Tomsk Polytechnic University
Modelling of transient process and calculation of frequency dependence by diagnostics of windings of the power transformer
 14. **Dmitry Titov**, S. Petrenko; scientific advisor: Anatoly Soshinov
Kamyshin
Technological Institute (branch) of Federal State Educational Establishment of Higher Professional Education "Volgograd State Technical University"
Monitoring system intensity icing on the wires overhead lines

15. **Dmitry Titov, S. Petrenko**

Kamyshin Technological Institute (branch) of Federal State Educational Establishment of Higher Professional Education "Volgograd State Technical University"

Diagnostic system isolates the pendants in the networks of 110 kV and above

16. **Dmitrij Ivanovskij**

Joint Stock Company 'Inspection of control over technical condition of objects of power energy industry'

Elaborating of faultfinding system for generator current lead's post insulators

13:00–14:00	Lunch break	Building "V" dining hall
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Section 5

HVDC AND POWER ELECTRONICS

CO-CHAIRS:

- **Andrey Gerasimov**, Doctor of Engineering Sciences, Deputy Director General - Director of System Studies and Prospective Development Department of JSC "Scientific and Technical Center of United Power System" (St. Petersburg);
- **Olga Suslova** Candidate of Technical Sciences, principal officer of "R&D Center of UPS", B4 subcommittee deputy administrator of RNC CIGRE

Your presentation should last up to 10 min. You will have 5 min for answering.

November 10, Tuesday		
11:00–13:00	Regular sessions	Aud. B–207
<ol style="list-style-type: none">1. Evgeniy Gorshkov; <i>scientific advisor: Candidate of Technical Sciences Professor Mikhail Goldshtein</i> <i>South Ural State University</i> Research of voltage transducer as an element of electrical grid2. Konstantin Tokar; <i>scientific advisor: Candidate of Technical Sciences Docent Alexey Andreev</i> <i>South Ural State University</i> High Voltage Direct Current Link As A Tool for Improvement Of Transient Stability3. Aleksandr Komuhov, <i>Candidate of Technical Sciences Ilya Moskvina, Pavel Firstov, scientific advisor: Candidate of Technical Sciences Docent Akop Martirosjan</i> <i>Ivanovo State Power Engineering University named after V.I. Lenin</i> Equipment parameters and thyristor controlled series capacitors characteristics selection for electric-power system stability enhancement4. Olga Suslova, A. Zelenin, Olga Suslova, E. Sheskin <i>JSC "Scientific and Technical Center of Unified Power System"</i> The effect of voltage source converters on the processes in adjacent AC grids5. Elena Ivanova, Andrey Gofman, Olga Kustova, Nikolai Kustov, Nina Yarokh <i>JSC «SO UPS»</i> Analysis of possibility of conversion of 220 kV Saratovskaya – Kubra AC line to DC voltage		
13:00–14:00	Lunch break	Building "B" dining hall

Section 6

RELAY PROTECTION AND AUTOMATION

CO-CHAIRS:

- **Andrey Zhukov**, Candidate of Technical Sciences, Deputy Director for United Power System mode control of JSC "System Operator of United Power System" (Moscow);
- **Vladimir Lachugin**, Candidate of Technical Sciences, senior staff scientist of JSC «ENIN»;
- **Vladimir Lebedev**, Candidate of Technical Sciences, Head of Electric power systems automatic control department of Ivanovo State Power Engineering University (Ivanovo);
- **Anton RaschepI'aeV**, main specialist of emergency automation, frequency and active power control department of relay protection and automation service of JSC "SO UPS", B5 subcommittee executive secretary;
- **Vladimir Polishuk**, Candidate of Technical Sciences Docent, head of "Industrial enterprises power supply" department of Samara state technical university (Samara)

Your presentation should last up to 10 min. You will have 5 min for answering.

November 10, Tuesday		
09:00 – 10:30	Regular sessions	Aud. B–204
1. Regina Nizamova ; <i>scientific advisor: Candidate of Technical Sciences Ruslan Isakov</i> <i>Kazan National Research Technical University of A.N. Tupolev</i> Investigation of 110 kV air line distant backup protection functioning with tapped transformer on hardware-software complex RTDS		
2. Ivan Metelyov , <i>Alena Kirillova</i> ; <i>scientific advisor: Candidate of Technical Sciences Ruslan Isakov</i> <i>Kazan National Research Technical University of A.N. Tupolev</i> Simulation of relay protection and automation in power systems with motor load on the hardware-software complex RTDS		
3. Sergej Novikov , <i>Candidate of Technical Sciences Igor' Kuz'min</i> ;		

*scientific advisor Candidate of Physical and Mathematical Sciences
Docent Rustjem Huzyashev
Kazan state power engineering university, Branch of JSC «SO
UPS» Regional dispatching Power System of the Republic of
Tatarstan*

The analysis of parameters of the natural frequency in the power line
in case of simulation of earth fault

4. **Aleksandr Atnishkin**, Maksim Shirokin; *scientific advisor:
Candidate of Technical Sciences Aleksey Shevelev
LLC “Research Center “Bresler”*

Differential protection of power transformer based on negative
sequence currents

5. **Andrey Marutov**, Evgeniy Sergeev
*System Operator of the United Power System» JSC, «United
dispatching power systems of the South», Pyatigorsk*

Research on the occurrence and determination of the aperiodic
component of the current in the breakers 220 kV and above during
switching of electric power lines for the purpose of dispatching

6. **Aleksandr Nikolaev**; *scientific advisor Olga Onisova
Chuvashia state university named after I.N. Ul'yanov, VNIIR JSC*
Study of short-circuit conditions in distribution grid with small-scale
power plants for solving relay protection tasks

10:30–11:00

Coffee break

Aud. B–101

11:00–13:00

Regular sessions

Aud. B–204

7. **Pavel Platonov**; *scientific advisor: Candidate of Technical
Sciences Vladimir Lachugin
Joint Stock Company “ENIN”*

Experience in using traveling-wave based methods for relay
protection development

8. **Andrey Marutov**, Evgeniy Sergeev
*System Operator of the United Power System» JSC, «United
dispatching power systems of the South», Pyatigorsk*

Research on the occurrence and determination of the aperiodic
component of the current in the breakers 220 kV and above during
switching of electric power lines for the purpose of dispatching

9. **Ilya Kirillov**, Aleksey Bulanov; *scientific advisor Andrey Koritov
Affiliated organization JSC “SO UPS” dispatching power control of
the Republic of Buryatia*

The problem of directed high-frequency line protection device (SH
2607031) produced by LLC “SPE EKRA” for lines that have three
ends with traction load

10. **Maxim Shirokin**, Mihail Martynov; *scientific advisor: Doctor of
Technical Sciences Professor Yuriy Liamets*

LLC "Research Center "Bresler"

The interval filter of orthogonal components

11. **Vladimir Gusev**; scientific advisor Igor Duvanov

Branch of JSC «SO UPS» - Voronezh RDA

The perspectives of use of «dead band» relay protection in the operating zone of Voronezh RDA analysis

12. **Tatyana Shadrikova**, Olga Dobryagina; scientific advisor: Doctor of Technical Sciences Professor Vladimir Shuin

Ivanovo State Power Engineering University named after V.I. Lenin

The methods of detection of dangerous arc intermittent earth faults in 6-10 kV cable networks

13. **Ekaterina Vorob'eva**; scientific advisor: Doctor of Technical Sciences Professor Vladimir Shuin

Ivanovo State Power Engineering University named after V.I. Lenin

Accuracy evaluation of equivalent models of 6 - 10 kV cable networks for the calculation of single-phase earth faults transients

14. **Nikolai Aleksandrov**; scientific advisor: Candidate of Technical Sciences Andrey Podshivalin

IC "Bresler", NPP "Dinamika"

Identification of instrument transformers measurement errors with the use of excess measurements

13:00–14:00

Lunch break

Building "B" dining hall

14:00–16:00

Regular sessions

Aud. B–204

15. **Irina Bulankina**; scientific advisor Nella Kvashnina

Omsk Region Dispatch Governance of United Energy Systems

Ensuring of distant redundancy by step microprocessor protections in operation area of Omsk region dispatch governance of united energy systems

16. **Vitaly Ananiev**; scientific advisor: Doctor of Technical Sciences Professor Aleksandr Kulikov

Nizhny Novgorod State Technical University n.a. R.E. Alekseev

An Improved Accurate Travelling Wave Fault Location Method Based on Navigation Algorithm

17. **Michail Obalin**, Vera Petrova; scientific advisor: Doctor of Technical Sciences Professor Aleksandr Kulikov

Nizhny Novgorod State Technical University n.a. R.E. Alekseev

Improving the accuracy of fault location through the use of digital processing of signals

18. **El'mir Khakimzyanov**, Ruslan Isakov, S. Kuksov; scientific advisor: Candidate of Technical Sciences Docent Ramil' Mustafin

Kazan State Power Engineering University, Kazan National

Research Technical University AN Tupolev – KAI, Branch of Open Joint Stock Company System Operator of Unified Energy System

<p><i>Regional Dispatch Administration of the Republic of Tatarstan</i> Determining the distance to the place double earth fault</p>		
<p>19. Andrey Korytov ; <i>scientific advisor Aleksandr Pahomov</i> <i>Affiliated organization JSC "SO UPS" dispatching power control of the Republic of Buryatia</i> Realization of the method of determining the place of line-to-ground faults along the currents and voltages of zero-sequence in networks of different configurations on the PC</p>		
<p>20. Galina Filatova ; <i>scientific advisor: Doctor of Technical Sciences Professor Vladimir Shuin</i> <i>Ivanovo State Power Engineering University named after V.I. Lenin</i> Remote Determination of the Single-Phase Ground Faults Place in Cable Distribution Networks by the Parameters of Transition Process</p>		
<p>21. Natal'a Zaikina, <i>Vera Petrova</i>; <i>scientific advisor: Doctor of Technical Sciences Professor Aleksandr Kulikov</i> <i>Nizhny Novgorod State Technical University n.a. R.E. Alekseev</i> Filtering algorithms of fault currents and voltages in the "variable box data"</p>		
<p>22. Aleksandr Shchobak, <i>D. Gnetova, M. Skripachev</i>; <i>scientific advisor: Candidate of Technical Sciences Docent Aleksandr Vedernikov</i> <i>Samara State Technical University</i> The construction of selective control of isolation of bending operational direct-current circuit on electrical stations and substations</p>		
16:00–16:30	Coffee break	Aud. B–101
16:30–18:00	Regular sessions	Aud. B–204
<p>23. Denis Gura; <i>scientific advisor: Candidate of Technical Sciences Vladimir Pastorov</i> <i>RDO of the North Caucasian ES, «System Operator of the United Power System», JSC</i> Analysis of registrars emergency processes in the operational zone North Caucasus RDU. Suggestions for its improvement</p>		
<p>24. Stanislav Migunov <i>Branch of JSC "SO UPS" Nizhny Novgorod RDO</i> Application of symmetrical components method for determination of abnormal modes in three phase electric energy systems</p>		
<p>25. Evgeny Sergeev <i>System Operator of the United Power System» JSC, «United dispatching power systems of the South», Pyatigorsk</i> Electric network topology change as control action of load shedding automation during close and long SC</p>		

26. **Mikhail Savvatin**; scientific advisor: Candidate of Technical Sciences Docent Tat'yana Klimova
The filial branch of JSC —SO UPS II Moscow Regional Dispatching Office, National Research University Moscow Energy University
Assessment of work automatic excitation control under the influence of external disturbances
27. **Viktor Yudaev**; scientific advisor: Candidate of Technical Sciences Andrei Konstantinov
Khabarovsk affiliate of «SO UPS », Far Eastern State Transport University
Adaptive system of turbogenerator automatic control of excitation based on neural network
28. **Rinat Idrisov**; scientific advisor Valerii Tashchilin
Ural Federal University named after the first President of Russia B.N. Yeltsin
Application of powersystem identification models for automatic devices parametrs determination

November 11, Wednesday		
09:00–10:30	Regular sessions	Aud. B–204
<p>1. Arkady Mikhailov, Ivan Bukreev, Andrey Korotkov <i>"System Operator of the United Power System", Joint Stock Company RDU Republic of Bashkortostan</i> Analysis of the need to implement start breaker failure protection in implementation manage the impact of emergency control</p> <p>2. Natalya Struchkova, Candidate of Technical Sciences Alexey Osak; scientific advisor: Candidate of Technical Sciences Vladimir Vasiliev <i>JSC «Power System Automation Institute», Melentiev Energy System Institute of SB RAS</i> The accelerating action of the device redundancy switch as an effective measure to prevent unstable dynamic stability of an electrical station in case prolonged short circuits</p> <p>3. Konstantin Volodin <i>System Operator of the United Power System, Nizhny Novgorod State Technical University n.a. R.E. Alekseev</i> Local automatics prevention interfering with stability of the generating equipment Novogorkovskaya CHP</p> <p>4. Ksenija Korbukova; scientific advisor: Candidate of Technical Sciences Konstantin Gorshkov <i>South Ural State University</i> Research of Influence the Self-Starting Motors of Own Needs on the Activities of the Synchronous Generator with Self-Excitation at the Nearby Short Circuit</p> <p>5. Nikolay Palukhin, Georgiy Lobanenko; scientific advisor: Doctor of Technical Sciences Professor Robert Vaynshteyn <i>National Research Tomsk Polytechnic University</i> Study of phase control for synchronous transient stability</p> <p>6. Sergei Khrapko; scientific advisor Nikolai Filaretov <i>The Branch of Open Society «The System Operator of the Unified Power System» Tumen RDU</i> The automatic unload at overload of power on Tyumen substation. The history of creation. Basic principles of functioning. Field experience</p>		
10:30–11:00	Coffee break	Aud. B–101
11:00–13:00	Regular sessions	Aud. B–204
<p>7. Dmitry Dadonov, Elena Vasilieva, Elena Repina, Denis Slipenchuk; scientific advisor: Candidate of Technical Sciences Vladimir Diyachkov <i>«System Operator of the United Power System», Joint-stock</i></p>		

<p><i>Company</i></p> <p>New approaches to setting the local complex of emergency control system on the example Balakovskaya npp's complex</p>		
<p>8. Alexsander Filaretov, <i>Igor Chertolyas</i> <i>The Branch of Open Society «The System Operator of the Unified Power System» Tumen RDU</i></p> <p>The automatic unload at overload of power on Tyumen substation. Formation of Work Algorithms and Description of the Methodology of Settings Calculation</p>		
<p>9. Petr Prosviryakov ; <i>scientific advisor V. Mart'yanov</i> <i>«RDO for the Sverdlovsk ES», branch of «System Operator of the United Power System», Joint-stock Company</i></p> <p>Application of Teleprotection Schemes for Three-Terminal Lines</p>		
13:00–14:00	Lunch break	Building "B" dining hall

Section 7

ELECTRICITY MARKETS AND PERSPECTIVE SYSTEM DEVELOPMENT

CO-CHAIRS:

- **Irina Volkova**, Doctor of Economic Sciences, Professor, deputy director of Institute of Pricing and Regulation of Natural Monopolies, National Research University "Higher School of Economics";
- **Vladimir Kolibaba**, Doctor of Engineering Sciences, Professor, Head of Economics and business organization department of Ivanovo State Power Engineering University n.a. V.I. Lenin (Ivanovo);

Your presentation should last up to 10 min. You will have 5 min for answering.

November 10, Tuesday		
9:00–10:30	Regular sessions	Aud. A–209
1.	Sergei Prohorov ; <i>scientific advisor: Doctor of Technical Sciences Professor Vladimir Gor'achev</i> <i>Penza state university, Branch of Joint-stock Company «System Operator of the United Power System» Regional dispatching office of Penza</i> The solution to the problem of disconnection of the shunt network to increase the maximum allowable flow in cross section	
2.	Ekaterina Balukova , <i>Veronika Salnikova, Aleksandr Gneyhev</i> ; <i>scientific advisor: Candidate of Technical Sciences Docent Aleksandr Vedernikov</i> <i>Samara State Technical University</i> Determination of cross-correlation dependence between generation of thermal and electric energy and electro-consumption of own needs CHPP	
3.	Anton Navesov ; <i>scientific advisor: Candidate of Technical Sciences Docent Liliya Tolstikhina</i> <i>Sayano-Shushenskaya branch of the Siberian Federal University</i> Influence optimum loadings of hydroelectric power station on the technician – economic indicators of the electric network	
4.	Tatyana Khrennikova ; <i>scientific advisor: Doctor of Technical</i>	

*Sciences Professor Valery Per'makov
National Research University "Moscow Power Engineering Institute"*
Depth of penetration of the external electromagnetic field into biological fabrics

5. **Ekaterina Revyakina**; *scientific advisor: Doctor of Technical Sciences Professor Valery Goldshtein
Samara State Technical University*

Application of data mining methods for managing lifecycle of production power assets

6. **Aleksey Kostin**, *Candidate of Technical Sciences P. Mezentsev; scientific advisor: Doctor of Technical Sciences Professor V. Oboskalov*

Institute of thermal physics Ural Branch of RAN

Decision making classic and behavioral models application concerning power engineering systems development

10:30–11:00	Coffee break	Aud. B–201
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11:00–13:00	Regular sessions	Aud. A–209
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7. **Anna Dmitrieva**

«RDO for the Sverdlovsk ES», branch of «System Operator of the United Power System», Joint-stock Company

Removing generators from fault point as alternative to cutting them off electrical system

8. **Natalia Samasiuk**; *scientific advisor: Candidate of Technical Sciences Docent Tat'ana Mancerova*

Belarussian national technical university

Model of administrative account on enterprises of energy

9. *Alina Iuldasheva; scientific advisor: Candidate of Technical Sciences Docent Aleksei Malafeev*

Magnitogorsk State Technical University named after G.I. Nosov

The fuzzy sets theory usage for production risk assessment for the mode control of industrial power supply systems

10. **Nikolai Mestnikov**; *scientific advisor: Candidate of Technical Sciences Professor Agit Konstantinov*

North-Eastern Federal University n. a. M.K. Ammosov

The urgency of operation of wind turbines in the Far North Wind turbines in the North power district

11. **Kseniya Mokrova** ; *scientific advisor: Doctor of Technical Sciences Professor Vladimir Kolibaba*

Ivanovo State Power Engineering University named after V.I. Lenin

Metring Ecological Standards in the Development Energy Systems in Terms of Energy System in Ivanovo

12. **Sergey Shevchuk**, *Anton Kulikov; scientific advisor: Candidate of Technical Sciences Docent Oleg Kotov*

Ural Federal University named after the first President of Russia B.N. Yeltsin

Consideration of structural reliability in engineering of power distribution networks

13. **Konstantin Zhabin** ; *scientific advisor: Doctor of Technical Sciences Professor Vladimir Kolibaba*

Ivanovo State Power Engineering University named after V.I. Lenin
Methodical questions of market formation reactive power

14. **Marina Dolmatova**

“System Operator of the United Power System” JSC, Lomonosov Moscow State University n.a. M.V. Lomonosov

Capacity procurement and pricing in network market

15. **Sergey Shavlovskiy**; *O. Gurikov*

JSC “Scientific and Technical Center of Unified Power System”

Assessment of the ability of changing accumulator type from lead acid to lithium-ion in substation operational DC current systems

13:00–14:00

Lunch break

Building "B" dining hall

Section 8

THERMAL AND NUCLEAR POWER STATIONS

Chairman:

- **Vladimir Gorbunov**, Doctor of Engineering Sciences, Head of Nuclear power stations department of Ivanovo State Power Engineering University n.a. Lenin

Your presentation should last up to 10 min. You will have 5 min for answering.

November 10, Tuesday		
9:00–10:30	Regular sessions	Aud. B–435
<p>1. Katsiaryna Rymasheuska; scientific advisor: Candidate of Technical Sciences Docent Valentina Chizch <i>Belarussian national technical university</i> The Development of Low-Waste Makeup Water Treatment Plant of the Thermal Power Plant</p>		
<p>2. Mariya Volman; scientific advisor: Doctor of Technical Sciences Professor Vladimir Semenov <i>Ivanovo State Power Engineering University named after V.I. Lenin</i> Technological aspects of concept for training of NPP operating personnel in high school</p>		
<p>3. Andrey Varentsov; scientific advisor: Candidate of Technical Sciences Docent Dmitry Solntsev <i>Nizhny Novgorod State Technical University n.a. R.E. Alekseev</i> Applied experimental and computational researches of the hydrodynamics of the coolant flow in the reactor core by KLT-40S floating nuclear power plant</p>		
<p>4. Elena Bohdan; scientific advisor: Doctor of Technical Sciences Professor Nicolaj Karnitsky <i>Belarussian national technical university</i> Application of combined cycle gas turbine technologies to belarusian energetics</p>		
<p>5. Siarhei Dzianisau, Dmitriy Zelenin; scientific advisor: Doctor of Technical Sciences Professor Nikolai Karnitsky. <i>Belarussian national technical university</i> Analysis of accelerator driven system implementation for transmutation of minor actinides accumulated in spent nuclear fuel on economic parameters of nuclear power plant based on WWER-1000</p>		

6. Nikita Zhelezov , Nikolay Razuvaev, Vladimir Subash; scientific advisor: Candidate of Technical Sciences Docent Georgiy Bulavkin Ivanovo State Power Engineering University named after V.I. Lenin Investigaion of emergency operational modes of VVER-1000 type nuclear unit with stated characteristics in first circuit		
10:30–11:00	Coffee break	Aud. B–101
11:00–13:00	Regular sessions	Aud. B–435
7. Nikolay Razuvaev , Nikita Jelezov, Nikolay Razuvaev, Vladimir Subash; scientific advisor: Candidate of Technical Sciences Docent Georgiy Bulavkin Ivanovo State Power Engineering University named after V.I. Lenin Regenerative feedwater heating system of VVER-1000 type nuclear unit as electric energy system’s hidden power reserve investigation		
8. Olga Derevianko ; scientific advisor: Doctor of Technical Sciences Docent Aleksandr Korolev Odessa National Polytechnic University Concept of emergency feeding of NPP’s technological equipment in completely power failure of unit		
9. Ivan Vinichenko , Bogdan Grishko, Dmitriy Demidov ; scientific advisor Maria Vol'man Ivanovo State Power Engineering University named after V.I. Lenin Creating and exploring virtual models of primary system of NPP power generating unit with WWER-1000		
10. Andrei Teplov , Dmitrii Mednikov; scientific advisor: Doctor of Technical Sciences Professor Vladimir Semenov Ivanovo State Power Engineering University named after V.I. Lenin Model of two-point nuclear reactor for research axial xenon oscillations		
11. Ilyas Mukhametgaleev ; scientific advisor: Doctor of Technical Sciences Professor Kamil' Gil'fanov Kazan State Power Engineering University, Branch of JSC «System Operator of the United Power System», «Regional Dispatching Office of the Republic of Tatarstan Energy System» Reduction of air inflows (inleakages) from air into the gas path in the tail section of unit boilers		
12. Ksenia Egorova ; scientific advisor: Candidate of Technical Sciences Docent Aleksandr Golubev Ivanovo State Power Engineering University named after V.I. Lenin Разработка системы автоматизированного пуска котлоагрегата		
13. Artur Rybakov , Aleksey Kuznecov; scientific advisor: Candidate of Technical Sciences Docent Andrej Nikonorov Ivanovo State Power Engineering University named after V.I. Lenin		

<p>The educational and research version of the process control system of power unit 1200 MW</p> <p>14. Evgeny Bykov, <i>Anna Selivanova</i>; <i>scientific advisor: Candidate of Technical Sciences Docent Evgenia Zaharova</i> <i>Ivanovo State Power Engineering University named after V.I. Lenin</i> Informational - modeling system of automated control thermal of the domain air heaters</p>		
13:00–14:00	Lunch break	Building "B" dining hall
14:00–15:30	Regular sessions	Aud. B–435
<p>15. Nikita Lonshakov, <i>V. Dunaev</i>; <i>scientific advisor: Doctor of Technical Sciences Professor Vladimir Gorbynov</i> <i>Ivanovo State Power Engineering University named after V.I. Lenin</i> Improving the efficiency of NPP thermal and mechanical equipment</p> <p>16. Sergey Gruzdev; <i>scientific advisor: Candidate of Technical Sciences Docent A. Il'chenko</i> <i>Ivanovo State Power Engineering University named after V.I. Lenin</i> Gas turbine power plants application on nuclear power stations with water-moderated water-cooled power reactor 1000</p>		

Section 9

POWER ENGINEERING INDUSTRY

CO-CHAIRS:

- **Andrey Vinogradov**, Candidate of Technical Sciences, Head of Steam and gas turbines department of Ivanovo State Power Engineering University n.a. Lenin (Ivanovo);
- **Arkady Zar'ankin**, Doctor of Technical Sciences Professor of Steam and gas turbines department of National research university "MPEI" (Moscow)

Your presentation should last up to 10 min. You will have 5 min for answering.

November 10, Tuesday		
09:00–10:30	Regular sessions	Aud. A–208
1. Nikita Averin ; scientific advisor: Candidate of Technical Sciences Evgeny Grigoriev <i>Ivanovo State Power Engineering University n.a. V.I. Lenin</i> Aerodynamic improvement of the flow part of the annular turbine cascades steam and gas turbomachinery		
2. Artem Vodenikov , Candidate of Technical Sciences Evgeny Grigoriev; scientific advisor: Doctor of Technical Sciences Professor Arkadiy Zaryankin <i>Ivanovo State Power Engineering University n.a. V.I. Lenin</i> <i>Development and Investigation of a New Series of Streetapella to Stabilize the Flow of a Working Environment in Complex Pipelines</i>		
3. Alexander Kazantzev ; scientific advisor: Candidate of Technical Sciences Docent Lolita Inahodova, Doctor of Technical Sciences Professor Valeriy Goldstein <i>Samara State Technical University</i> Application of superconducting transformer with amorphous magnetic circuit in electric networks		
4. Sergej Osipov , Evgenia Oleynikova; scientific advisor: Doctor of Technical Sciences Professor Arkadij Zarjankin <i>National Research University "Moscow Power Engineering Institute"</i> Turbine expander cooling installation of circulating water on gas fuel thermal power plants		
5. Ivan Garanin , Sergej Osipov, Evgenia Oleynikova; scientific		

*advisor: Doctor of Technical Sciences Professor Arkadij Zarjankin
National Research University "Moscow Power Engineering
Institute"*

Multi-Tier Steam Turbines. Prospects and Particularities. Part 1:
Overview of Two-Tier Low-Pressure Turbines

6. **Alexey Vlasov**; *scientific advisor: Doctor of Technical Sciences
Professor Vladimir Poletaev*

Ivanovo State Power Engineering University Lenin

The study of temperature change in the working gap of the
magnetic liquid devices

13:00–14:00

Lunch break

Building "B" dining hall

Section 10

INFORMATION SYSTEMS, TELECOMMUNICATION AND TECHNOLOGY OF INFORMATION SECURITY IN POWER INDUSTRY

CO-CHAIRS:

- **Andey Verigo**, Candidate of Technical Sciences, Head of automated process management systems department of CJSC "RTSoft" (Moscow);
- **Sergey Kos'akov**, Doctor of Technical Sciences Professor, head of "Computer software" department of Ivanovo state power engineering university n.a. V.I. Lenin (Ivanovo);

Your presentation should last up to 10 min. You will have 5 min for answering.

November 10, Tuesday		
09:00–10:30	Regular sessions	Aud. B–356
<p>1. Anna Novikova; scientific advisor: Doctor of Technical Sciences Professor Vitaliy Visotsky Samara State Technical University Control system insulation resistance two-wire independent electro supply</p>		
<p>2. Yulia Vassilyeva; scientific advisor: Candidate of Technical Sciences Docent Vladimir Polishchuk National Research Tomsk Polytechnic University Adaptive non-stationary signals identification technology</p>		
<p>3. Tat'ana Nizamutdinova; scientific advisor Nikita Muhlynin Ural Federal University named after the first President of Russia B.N. Yeltsin New opportunities of wavelet transform in a digital signal processing</p>		
<p>4. Maxim Bogushevich; scientific advisor Aleksey Nikitin Branch of JSC "SO UPS" "Regional power system dispatching of Zabaykalsky Krai" Applying of component approach in software development by the example of solution to problem of validation of telemetry</p>		
<p>5. Vladislav Berezovsky; scientific advisor: Candidate of Technical Sciences Docent Vladimir Tulsky National Research University "Moscow Power Engineering Institute"</p>		

Power Quality Monitoring Systems Structure Investigation With Regard To International Practice

6. **Dmitry Polyakov**, *Konstantin Nikitin, Dmitry Yurchuk*
Omsk State Technical University

Polyethylene insulation temperature control device

7. **Egor Dneprovskii**

The branch of the System Operator of the United Power System, the United Dispatching of the Power Systems of the East, Joint-stock Company

Way from "limit" to the dispatch schedule. Database permissible power flows. Automation of the process of issuing guidance material

8. *Dmitry Tumanov, Nikita Chuvakov; scientific advisor: Candidate of Technical Sciences Docent* **Igor Yasinskiy**

Ivanovo State Power Engineering University n.a. V.I. Lenin

On improving of forecasting methods using neural network technology

13:00–14:00	Lunch break	Building "B" dining hall
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Section 11

EDUCATIONAL TECHNOLOGIES AND TRAINING PROGRAMS FOR ELECTRICAL POWER INDUSTRY

CO-CHAIRS:

- **Vera Grinevich**, HR chief of the Branch of JSC "System Operator of United Power System" ODC of Centre;
- **Valery Budovsky**, Doctor of Technical Sciences, head of training center of executive branch of JSC "SO UPS" (Russia, Moscow);
- **Peter Bartolomej**, Doctor of Engineering Sciences, professor of Automated electrical systems department of Ural Federal University (Yekaterinburg) n.a. B.N. Yeltsin

Your presentation should last up to 10 min. You will have 5 min for answering.

November 10, Tuesday		
09:00–10:30	Regular sessions	Aud. 5–241
1. Peter Bartolomej , Doctor of Technical Sciences Professor Ural Federal University n.a. B.N. Yeltsin The higher technical education and power security of the Russia		
2. Andrei Makarov ; scientific advisor: Candidate of Technical Sciences Docent Valerii Efremov Research center Bresler Engineering and operation of relay protection and automation training hardware-software system		
3. Anton Dremlyuga , Anatoliy Soshinov Kamyshin Technological Institute (branch) of Federal State Budgetary Educational Establishment of Higher Professional Education "Volgograd State Technical University" Programs and methods of training specialists for maintenance work in the electric grid complex under voltage		
4. Elizaveta Koksharova ; scientific advisor: Doctor of Technical Sciences Professor Aleksandr Egorov Ural Federal University named after the first President of Russia B.N. Yeltsin Human resource management system at the academic		

department «Automated Electrical Systems» of UrFU 5. Olga Malozemova ; <i>scientific advisor Olesya Belousova</i> <i>System Operator Branch IDO of Ural</i> Programs of externship/probation quality improving in the IDO of Ural 6. Olga Stepanova , <i>Ekaterina Burlak</i> ; <i>scientific advisor Boris Vasil'ev</i> <i>Branch of OSC «System operator of The Unified Power System»</i> <i>Regional Dispatching Office of Amur region power system</i> Development of new methods of approach to work with personnel in power industry		
10:30–11:00	Coffee break	Aud. 5–201
11:00–13:00	Regular sessions	Aud. 5–241
7. Andrey Verhozin , <i>Candidate of Technical Sciences A. Alekseev, S. Lisak</i> ; <i>scientific advisor: Doctor of Technical Sciences Professor S. Kokin</i> <i>Ural Federal University named after the first President of Russia B.N. Yeltsin</i> Methodological instructive regulations development for type graduate qualification work on "Electrical power supply" 8. Igor Tsoy ; <i>Candidate of Technical Sciences Docent Nina Kosmylnina</i> <i>National Research Tomsk Polytechnic University</i> Research of the force autotransformer operation modes 9. Igor Zonov , <i>K. Kuznetsov, D. Firsova, E. Koksharova</i> ; <i>scientific advisor: Candidate of Technical Sciences Docent A. Egorov</i> <i>Ural Federal University named after the first President of Russia B.N. Yeltsin</i> Volumetric laser scanning of substations and equipment of electric power systems 10. Kirill Kuznetsov , <i>Alexander Egorov, Olga Vozisova, Darina Firsova</i> ; <i>scientific advisor: Candidate of Technical Sciences Docent Alexander Egorov</i> <i>Ural Federal University named after B.N. Yeltsin</i> Construction, 3D printing and assemblage 11. Anastasia Gudz , <i>A. Dalnikov, M. Dubitsky</i> <i>Irkutsk National Research Technical University</i> Electric power quality 12. Olga Vozisova , <i>Kirill Kuznetsov, Igor Zonov</i> ; <i>scientific advisor: Candidate of Technical Sciences Docent Aleksandr Egorov</i> <i>Ural Federal University named after B.N. Yeltsin</i> Electric power system kits 13. Olga Vozisova , <i>Kirill Kuznetsov, Igor Zonov</i> ; <i>scientific advisor:</i>		

*Candidate of Technical Sciences Docent Aleksandr Egorov
Ural Federal University named after B.N. Yeltsin*

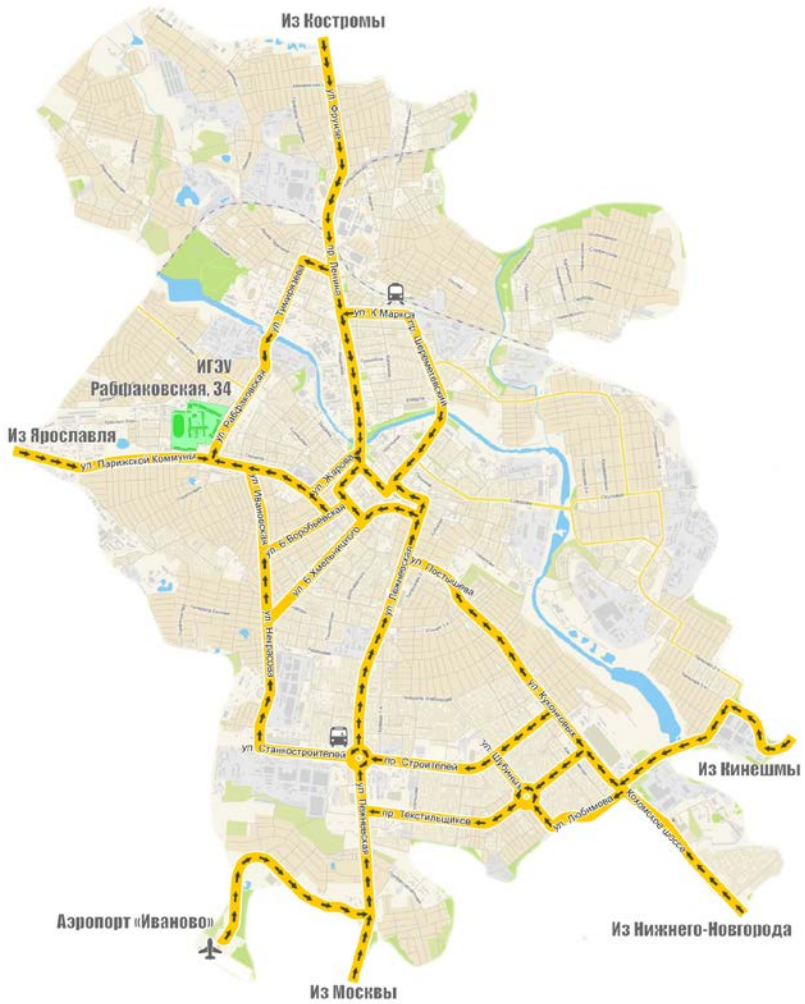
Electric power system kit. TRG-110 current transformer model range

14. **Evgeny Shishkov**; *scientific advisor: Candidate of Technical Sciences Docent Aleksandr Vedernikov
Samara State Technical University*

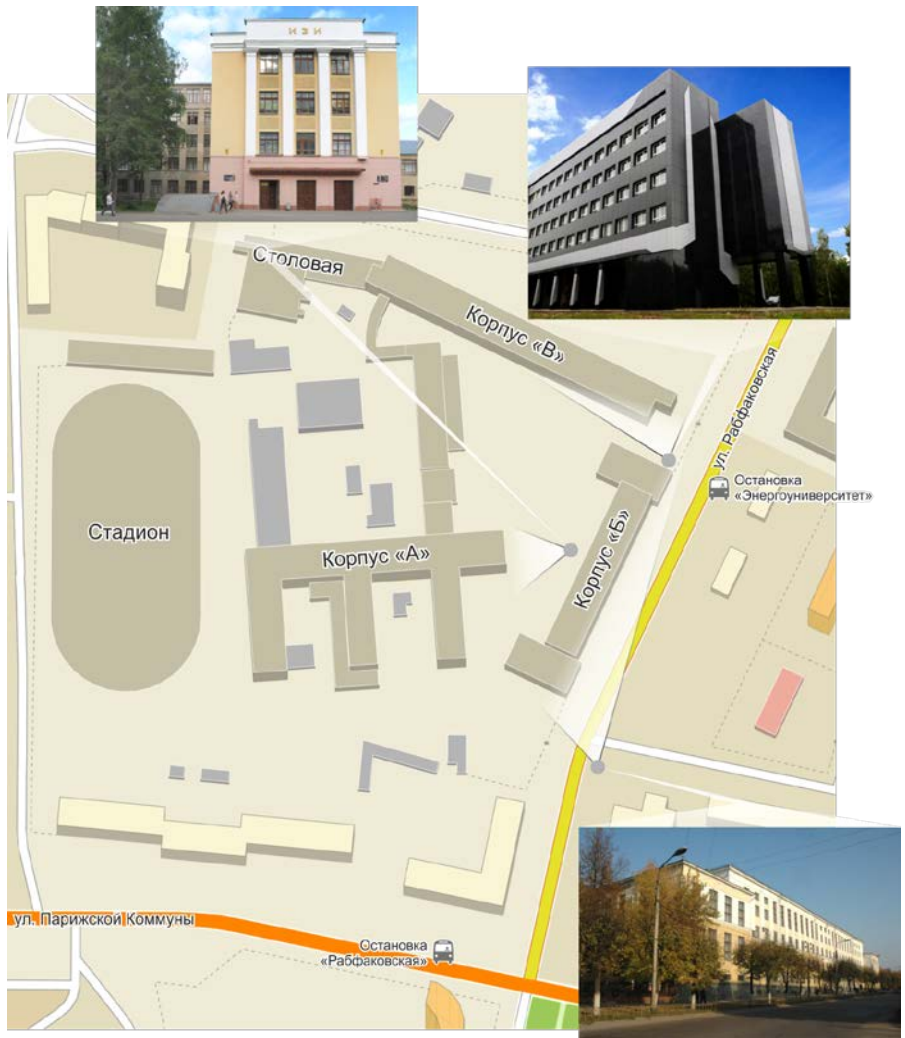
Curriculum "Electric power system modes planning" development applying modern means of teaching

13:00–14:00	Lunch break	Building "B" dining hall
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Appendix1. Transport map to ISPU



Appendix 2. Layout of ISPU buildings



For Notes