

REFERENCES

Projects for development of integrated automation, protection, communication, and safety system

FACILITY	CLIENT	REGION	GENERAL CONTRACTOR	SUBSYSTEM STRUCTURE	SCOPE OF WORK
Prizeyskaya 220 kV Substation, Elgaugol 220 kV Substation, 220 kV Substation A, 220 kV Substation B, Grid Management Centre of Amur District	BPS of Eastern Region	Amur Region	CJSC NOVINTECH, JSC Engineering Centre of Ural Energy Industry	Relay protection and automation (RPA), central control system (CCS), automated information and measuring system for commercial energy metering (AIMS CEM), overhead transmission lines monitoring system, hardware and software of Substation Group Management Centre (SGMC), integrated security system (ISS), remote technical support system; training system	Smart grid development for external power supply facilities at Elga Coal Field (Elgaugol smart grid cluster): design documentation development, equipment supply, construction and assembly, pre-commissioning
Yemelino 500 kV Substation	BPS of Ural Region	Sverdlovsk Region, Nizhneserginsky Municipal District	CJSC NOVINTECH	APCS, AIMS CEM, operating DC voltage system (ODCVS), ISS, RPA, emergency control system (ECS), communication systems, cable communications, fibre optic communication lines (FOCL), high frequency communication	<p>Creation of information and process systems, communication systems, ECS, RPA and AIMS CEM during construction of Yemelino 500 kV Substation with 500 kV and 200 kV overhead transmission lines inlets, within 200 kV start-up facility and 500 kV facility:</p> <ul style="list-style-type: none"> - supply of equipment, assembly, adjustment and commissioning of RP, ECS, ODCVS, APCS, automated fire-fighting devices in 500 kV autotransformer group and 500 kV relay cabinet; CCTV and process video control systems, security and fire alarm, security lighting, access control; - construction of fibre optic transmission line (FOTL) between Yemelino 500 kV Substation and Yuzhnaya 500 kV Substation; - supply, assembly, adjustment and commissioning of equipment for high frequency communication; - metrological support of AIMS CEM; amending the State Register of Measuring Instruments for the AIMS CEM at Yemelino 500 kV Substation; - integration of supplied equipment of information process system (IPS), communication system, ECS and RPA into developed APCS; - check of compliance with the requirements for electromagnetic compatibility of equipment; <ul style="list-style-type: none"> - APCS maintenance.
Yemelino 500 kV Substation, Yuzhnaya 500 kV Substation, Kurgan 500 kV Substation	BPS of Ural Region	Sverdlovsk Region, Kurgan Region	CJSC NOVINTECH	APCS	Maintenance of Sverdlovsk Region BPSE APCS

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Soboli 220 kV Substation	BPS of Ural Region	Perm Krai, Perm Municipal Formation, Nyashino village	JSC Engineering Centre of Ural Energy Industry	ISS, APCS, monitoring, control and diagnostics system (MCDS)	Design and survey work, development of purchase requisitions for materials, detailed design development, cost estimate documentation development for ISS (security alarm system, perimeter security alarm system, access control and management system, fire alarm and alert system, security lighting system, data collection and processing system, uninterruptible power supply system); development of design and cost estimate documentation (Detailed Design Phase) for APCS and MCDS arrangement.
			CJSC Electrotechnical Company, Selezh-Electro Scientific Engineering Centre LLC; JSC Enera Engineering; Tatspetsenergo LLC; Ratiz LLC	APCS, MCDS, PDATS, AIMS CEM, RPA, ECS, FOCL-OTL, ODCVS, auxiliaries board, high-frequency communication, fibre optic transmission system (FOTS), uninterruptible power supply source (UPSS), ISS, fibre optic and electric communication lines (FOECL), electromagnetic compatibility	Supply of control wiring and communication equipment; development of integrated security system; development of fibre optic communication line (including transmission systems); assembly and pre-commissioning of control wiring and communication equipment supplied; adjustment of installed channels and ducts; check of compliance with the requirements of electromagnetic compatibility of equipment
Shagol 500 kV Substation	BPS of Ural Region	Chelyabinsk	GEM-Vologda LLC	APCS, RPA, transformer equipment monitoring and control system (TEMCS)	Reconstruction of Shagol 500 kV Substation: equipment supply, assembly supervision, adjustment supervision, client's personnel training
Krasnoarmeyskaya 500/220/35 kV Substation, with 500 kV and 220 kV overhead transmission lines inlets	BPS of Volga Region	Samara Region, Krasnoarmeyskoye village	CJSC Soyuz-Seti Engineering and Construction Company; Energostroyinvest LLC; CJSC ORZAUM, Donelectromontazh LLC 99	APCS, PDATS, AIMS CEM, RPA, ECS, fibre optic communication (FOC), electric communication lines (ECL), high frequency communication, FOTS	Scope of work within the construction of Krasnoarmeyskaya 500/220/35 kV Substation with 500 and 220 kV overhead transmission lines inputs: development of assignment for the plant to manufacture RPA cabinets; supply of equipment for APCS, PDATS, AIMS CEM, RPA, ECS, FOC, ECL, high frequency communication, FOTS; assembly of equipment for FOC, ECL, FOTS; metrological works on the equipment of AIMS CEM; pre-commissioning of entire complex of subsystems; check of proper assembly of control wiring chains, their testing; ensuring of process complex operability at the facility
Kuybyshevskaya 500/220/35 kV Substation	BPS of Volga Region	Samara Region, Alekseyevka village	Energo Design Centre LLC	APCS, PDATS, AIMS CEM, FOTS, FOC, high frequency communication	Comprehensive technical upgrade and reconstruction of Kuybyshevskaya 500/220/35 kV Substation: supply of materials and equipment; pre-commissioning of subsystems; control wiring complex adjustment

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FACILITY	CLIENT	REGION	GENERAL CONTRACTOR	SUBSYSTEM STRUCTURE	SCOPE OF WORK
Ulyanovskaya 220/110/6 kV Substation	BPS of Volga Region	Ulyanovsk	JSC RETZ Energiya; Mars Stroy-Proyekt LLC	RPA, APCS, PDATS, ECS	Reconstruction of Ulyanovskaya 220/110/6 kV Substation: equipment supply, correction of List of Supplied Equipment; hardware and software system pre-commissioning and comprehensive adjustment without operations in existing chains; cable termination in the cabinets of hardware and software system
Chigashevo 220 kV Substation	BPS of Volga Region	Republic of Mari El, Yoshkar-Ola	Jstroytekhkontak LLC	RPA, ECS, APCS, PDATS, AIMS CEM, high frequency communication, digital communication system (DCS), FOCL, FOTS, ECL, security and fire alarm, CCTV and process video control	Reconstruction of Chigashevo 220 kV Substation in terms of development of control wiring and communication systems: detailed design, equipment supply, assembly, client's personnel training, pre-commissioning
Levoberezhnaya 220 kV Substation	BPS of Volga Region	Tolyatti	JSC Dominanta-Energy	ODCVS, auxiliaries board	Works within the construction of Levoberezhnaya 220 kV Substation: equipment supply, assembly and adjustment supervision
Orlovskaya-Rayonnaya 220 kV Substation	BPS of Central Region	Orel	Stroytekhkontak LLC	RPA, ECS, AIMS CEM, APCS, PDATS, in-plant communication, ECL, FOCL, DCS, high frequency communication, power and control cables, ISS within the security and fire alarm and CCTV	Comprehensive technical upgrade and reconstruction of Orlovskaya-Rayonnaya 220 kV Substation. Development of control wiring and communication systems: issue of detailed design, equipment supply, assembly, pre-commissioning, cable installation
Severnaya 220 kV Substation	BPS of Central Region	Tula Region	Energo Design Centre LLC	FOTS	Supply of materials and equipment within comprehensive technical upgrade and reconstruction of Severnaya 220 kV Substation
R-4 220 kV Substation	BPS of Southern Region	Rostov-on-Don	Stroytekhkontak LLC	TEMCS, RPA, ECS, AIMS CEM, APCS, PDATS, in-plant communication, high frequency communication, ISS within security and fire alarm and CCTV	Comprehensive technical upgrade and reconstruction of R-4 220 kV Substation, regarding control wiring and communication systems development: issue of detailed design, equipment supply, assembly, pre-commissioning
Starominskaya 220/110/35/10 kV Substation	BPS of Southern Region	Krasnodar Krai, Starominskaya village	Stroytekhkontak LLC	RPA, AIMS CEM, APCS, PDATS, high frequency communication, DCS, in-plant communication, ECL	Works within comprehensive technical upgrade and reconstruction of Starominskaya 220/110/35/10 kV Substation: supply of equipment and materials, correction of Materials and Equipment Specifications; assembly and pre-commissioning of control wiring and communication systems

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FACILITY	CLIENT	REGION	GENERAL CONTRACTOR	SUBSYSTEM STRUCTURE	SCOPE OF WORK
Dagomys 220/110/10 kV Substation	BPS of Southern Region	Krasnodar Krai, Dagomys village	CJSC Soyuz-Seti Engineering and Construction Company	APCS, RPA, ECS, ISS	Reconstruction and technical upgrade of Dagomys 220/110/10 kV Substation: checking and testing control wiring chains and ensuring process complex operability at the facility. Pre-commissioning of equipment supplied for APCS, RPA, ECS, ISS, check and correction of control wiring chains; ensuring process complex operability; implementation of temporary solutions
Slavyansk-Krymskaya-2 220 kV Substation	BPS of Southern Region	Krymsk District of Krasnodar Krai	CJSC Soyuz-Seti Engineering and Construction Company	RPA	Construction of Slavyansk-Krymskaya-2 220 kV overhead transmission line: supply of equipment for RPA
Psou 220/110/10 kV Substation	BPS of Southern Region	Krasnodar Krai, Adler District, Sochi, Veseloye-1 village	CJSC Soyuz-Seti Engineering and Construction Company	RPA	Pre-commissioning of RPA with AT-1 replacement within the scope of reconstruction and technical upgrade of Psou 220 kV Substation
Ice Stadium Substation (110 kV) 2x40MVA	BPS of Southern Region	Krasnodar Krai, Sochi, Adler District, Imereti Lowland District	JSC GlavInzhEnergostroy (JSC GIES)	ECS, APCS, PDATS, AIMS CEM, ISS, FOTS, FOC, ECL, UPSS	Supply of equipment, supervision over equipment assembly, training, FAT, metrological support of equipment for AIMS CEM
Mzymta 110 kV Substation	BPS of Southern Region	Krasnopolyansky Settlement District of Adler District of Sochi	CJSC Soyuz-Seti Engineering and Construction Company	RPA, ECS, ODCVS, auxiliaries boards, UPSS	Pre-commissioning of equipment of RPA, ECS, ODCVS, auxiliaries boards, UPSS; check of compliance with requirements for electromagnetic compatibility; comprehensive adjustment of chains and equipment of control wiring and communication
Krymskaya 500 kV Substation, Tsentralnaya 500 kV Substation	BPS of Southern Region	Krasnodar Krai	Energostroykompleks LLC	APCS, RPA, ECS, AIMS CEM	Works within the scope of construction of Krymskaya-Tsentralnaya 500 kV overhead transmission line with expansion of Krymskaya 500 kV Substation and Tsentralnaya 500 kV Substation: equipment supply, unloading and installation of cabinet equipment without cable laying and termination; assembly supervision of equipment supplied for RPA, ECS, APCS; assembly of equipment of AIMS CEM, metrological works on AIMS CEM; local adjustment (up to external terminal rows in the cabinet) of equipment supplied for RPA, ECS. APCS and AIMS CEM.
NKAZ-2 220 kV Substation	BPS of Siberian Region	Novokuznetsk	Energostroykompleks LLC	AIMS CEM, APCS, ECL, ISS, MCDS, FOC, ODCVS, PDATS, auxiliaries boards	Comprehensive technical upgrade and reconstruction of NKAZ-2 220 kV Substation: supply of equipment and materials, assembly supervision, pre-commissioning, adjustment supervision, client's personnel training (information and consulting services)
Yelanskaya 220 kV Substation	BPS of Siberian Region	Kemerovo Region	Energostroykompleks LLC; Energostroykompleks LLC	APCS, PDATS, FOTS, FOC, ECL, AIMS CEM	Comprehensive technical upgrade and reconstruction of Yelanskaya 220 kV Substation: supply of equipment and materials, assembly, pre-commissioning, client's personnel training (information and consulting services)

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Pervomayskaya Heat and Power Plant No. 14	JSC TGK-1	St. Petersburg	CJSC STROYENERGO-SERVIS Holding Company	RPA, APCS, LAN	Supply of equipment, engineering of automated working stations for RPA, assembly of APCS and LAN at the facility; pre-commissioning of automated working stations of RPA at the facility; cable supply
Yegorlykская WPP (Water Power Plant) No. 2	Chain of Kuban WPPs, JSC RusHydro	Izobilnensky District of Stavropol Krai, Levoyegorlyksky village	CJSC NOVINTECH	TM, AIMS CEM, communication, APCS; automated fire-fighting system, fire alarm system	Design and survey works, equipment supply, construction and assembly, pre-commissioning (telematics, AIMS CEM, communication, APCS, equipment for differential protection of pipelines); hydrogenerator testing upon assembly completion; equipment supply, assembly and pre-commissioning (automated fire-fighting system, fire alarm system)
Bratskaya 220 kV WPP	JSC Irkutskenergo	Bratsk	Irkutskenergotrade Trading House LLC (IETrade TH LLC)	RPA	Tie-in design; supply of equipment for bus system protection in section 2 of Bratsk 220 kV WPP; assembly and adjustment of control wiring systems; personnel training; pre-commissioning
Chertanovo 220/110/10 kV Substation	JSC MOESK	Moscow	Oldridge-Madera Russian-Czech Design Company LLC	MCDS	Design development; detailed design development for monitoring system of AT-1 and AT-2
Belyaev 110 kV Substation	JSC MOESK	Moscow	JSC Electroualmontazh	MCDS	Survey of transformer equipment; development of design and cost estimate documentation for primary elements installation and approval of primary elements installation diagram by manufacturer for T-1 and T-2; detailed design development for monitoring system of T-1 and T-2

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Projects for development of automatic process control systems, telematics, data acquisition and transmission systems, process data acquisition and transmission systems, and communication

FACILITY	CLIENT	REGION	GENERAL CONTRACTOR	SUBSYSTEM STRUCTURE	SCOPE OF WORK
Kurskaya 330 kV Substation, Zheleznogorsk 330 kV Substation, Sadovaya 330 kV Substation, Seymskaya 330 kV Substation, Kaluzhskaya 330 kV Substation, Gubkin 330 kV Substation, Yuzhnaya 330 kV Substation, Livny 220 kV Substation, Liteynaya 220 kV Substation, Mirnaya 220 kV Substation, Mtsensk, Orbita 220 kV Substation, Orlovskaya-Rayonnaya 220 kV Substation, Sputnik 220 kV Substation, Uzlovaya 220 kV Substation, Electron 220 kV Substation, Kursk Area Communication Centre, Tula Area Communication Centre, Orel Area Communication Centre—16 substations	BPS of Central Region	Kursk Region, Orel Region, Tula Region, Ryazan Region, Kaluga Region	StroySvyazKomplekt LLC, Styles LLC	Communication, telematics	Pre-design survey of substations, development of Terms of Reference for detailed design, development of technical and detailed design, testing programme and procedure, equipment supply, assembly and pre-commissioning
Kaluzhskaya 750 kV Substation	BPS of Central Region	Kaluga Region, Maloyaroslavets	JSC Elektrosetservis ENES	Telematics	Supply of telematics system for Kaluzhskaya 750 kV Substation expansion (installation of 3 500/200 kV autotransformer)
Kurskaya 330 kV Substation, Seymskaya 220 kV Substation, Sadovaya 330 kV Substation, Yuzhnaya 330 kV Substation, Zheleznogorskaya 330 kV Substation, Orlovskaya-Rayonnaya 220 kV Substation, Uzlovaya 220 kV Substation, Mtsensk 220 kV Substation, Livny 220 kV Substation, Gubkin 330 kV Substation—10 substations	BPS of Central Region	Kursk Region, Orel Region, Tula Region, Ryazan Region, Kaluga Region	CJSC NOVINTECH	Data acquisition and transmission systems	Maintenance of hardware and software of data acquisition and transmission system (DATS)
Pomary 500 kV Substation	BPS of Volga Region	Mari El, Privolzhsky village	JSC ENERGOSET-PROYEKT Institute	Automatic process control systems (APCS), communication	Development of project to develop hardware and software for automated monitoring and control of Pomary 500 kV Substation
			CJSC RTSof	APCS; MCDS, communication (including optical-fibre communication lines)	Detailed design development, equipment supply, assembly, adjustment
Yugo-Zapadnaya 330 kV Substation	BPS of North-Western Region	Leningrad Region	RVS LLC	APCS	Equipment supply, equipment features determination and configuration, training course for client's personnel regarding the equipment adjustment and operation

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FACILITY	CLIENT	REGION	GENERAL CONTRACTOR	SUBSYSTEM STRUCTURE	SCOPE OF WORK
Novobryanskaya 750 kV Substation, Novobryanskaya 220 kV Substation, Bryanskaya 220 kV Substation, Roslavl 330 kV Substation, Smolensk-1 220 kV Substation, Talashkino 330 kV Substation, Tsementnaya 220 kV Substation—7 substations	BPS of North-Western Region	Bryansk Region, Smolensk Region	CJSC RTSof	Telematics, communication	Pre-design survey of substation, development of Terms of Reference for detailed design, detailed design development (approvals package, detailed design); equipment supply, assembly, adjustment, system commissioning and start-up
Naitopovichi 220 kV Substation, Vostok 220 kV Substation, Liteynaya 220 kV Substation, Mashzavod 220 kV Substation, Kompessornaya 220 kV Substation, Talashkino 330 kV Substation, Roslavl 330 kV Substation, Novobryanskaya 750 kV Substation, Novobryanskaya 220 kV Substation, Bryanskaya 220 kV Substation, Tsementnaya 220 kV Substation, Smolensk-1 220 kV Substation, Smolensk Area Communication Centre, Bryansk BPSE, Grid Management Centre of North-Western Region—12 substations	BPS of North-Western Region	Bryansk Region, Smolensk Region	CJSC RTSof	Communication	Pre-commissioning to provide additional equipment for substation telephone exchanges; pre-commissioning of equipment transmitting data to Smolensk Area Communication Centre, Grid Management Centre of North-Western Region, and Bryansk BPSE from 12 substations of Bryansk BPSE
Novozybkov 110 kV Substation, Induktor 110 kV Substation, Krasnaya Gora 110 kV Substation, Suzemskaya 110 kV Substation, Rudnya 110 kV Substation, Vyshkov 110 kV Substation, Ivanovka 35 kV Substation, Lotaki 35 kV Substation—8 substations	BPS of North-Western Region	Bryansk Region, Smolensk Region	CJSC RTSof	Communication	Pre-commissioning to provide additional equipment for substation telephone exchanges; pre-commissioning of equipment transmitting data to Smolensk Area Communication Centre, Grid Management Centre of North-Western Region, and Bryansk BPSE from 12 substations of Bryansk BPSE
Starorusskaya 330 kV Substation, Okulovskaya 330 kV Substation, Pskov 330 kV Substation, Novosokolniki 330 kV Substation, Velikoretskaya 330 kV Substation, Kem 220 kV Substation, Lyaskelya 220 kV Substation, Sortavala 220 kV Substation, Suoyarvi 220 kV Substation, Petrozavodskaya 330 kV Substation, Olenegorsk 220 kV Substation, Titan 330 kV Substation—12 substations	BPS of North-Western Region	Novgorod Region, Pskov Region, Republic of Karelia, Murmansk Region	CJSC Sisteminvest	Communication	Detailed design development for communication equipment

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FACILITY	CLIENT	REGION	GENERAL CONTRACTOR	SUBSYSTEM STRUCTURE	SCOPE OF WORK
<p>Pargolovo 220 kV Substation, Pikalevskaya 220 kV Substation, Podporozhskaya 220 kV Substation, Tikhvin-Liteyny 330 kV Substation, Gatchinskaya 330 kV Substation, Kamenogorskaya 330 kV Substation, Lodeynoye Pole 220 kV Substation, Staroruskaya 330 kV Substation, Okulovskaya 330 kV Substation, Pskov 330 kV Substation, Novosokolniki 330 kV Substation, Velikoretskaya 330 kV Substation, Tsentralnaya 330 kV Substation, Severnaya 330 kV Substation, Sovetsk 330 kV Substation, Kem 220 kV Substation, Sortavala 220 kV Substation, Suoyarvi 220 kV Substation, Petrozavodskaya 330 kV Substation, Olenegorsk 220 kV Substation, Monchegorsk 220 kV Substation, Kondopoga 330 kV Substation, Vykhodnoy 330 kV Substation, Lyaskelya 220 kV Substation—24 substations</p>	<p>BPS of North-Western Region</p>	<p>Leningrad Region, Novgorod Region, Pskov Region, Kaliningrad Region, Republic of Karelia, Murmansk Region</p>	<p>CJSC RTSoft, EnergoStroyTelekom LLC, PSI Energo LLC</p>	<p>Data acquisition and transmission systems</p>	<p>Pre-design survey of substations, design development, detailed design development for hardware and software for data acquisition and transmission system; detailed design coordination with the customer, delivery of hardware and software for data acquisition and transmission system</p>
<p>Tikhvin-Liteyny 330 kV Substation, Gatchinskaya 330 kV Substation, Kamenogorskaya 330 kV Substation, Tsentralnaya 330 kV Substation, Severnaya 330 kV Substation, Sovetsk 330 kV Substation, Okulovskaya 330 kV Substation, Pskov 330 kV Substation, Novosokolniki 330 kV Substation, Velikoretskaya 330 kV Substation, Kem 220 kV Substation, Sortavala 220 kV Substation, Suoyarvi 220 kV Substation, Petrozavodskaya 330 kV Substation, Olenegorsk 220 kV Substation, Monchegorsk 220 kV Substation, Kondopoga 330 kV Substation, Vykhodnoy 330 kV Substation—18 substations</p>	<p>BPS of North-Western Region</p>	<p>Leningrad Region, Kaliningrad Region, Novgorod Region, Pskov Region, Republic of Karelia, Murmansk Region</p>	<p>PSI Energo LLC</p>	<p>Process data acquisition and transmission systems</p>	<p>Supply, assembly and pre-commissioning of hardware and software equipment for process data acquisition and transmission system (PDATS)</p>

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FACILITY	CLIENT	REGION	GENERAL CONTRACTOR	SUBSYSTEM STRUCTURE	SCOPE OF WORK
Yuzhnaya 500 kV Substation	BPS of Ural Region	Yekaterinburg	JSC ENERGOSET-PROYEKT Institute	APCS, communication	<ul style="list-style-type: none"> - Development of project to develop of hardware and software for automated monitoring and control of Yuzhnaya 500 kV Substation: pre-design survey and analysis of basic and auxiliary equipment installed at Yuzhnaya 500 kV Substation, as well as information, process and engineering system components, communication systems and control wiring systems. - Development of technical solutions to develop hardware and software for automated monitoring and control of Yuzhnaya 500 kV Substation. - Development of design and cost estimate documentation for the project to develop hardware and software for automated monitoring and control of Yuzhnaya 500 kV Substation.
			StroySvyazKomplekt LLC, Standart-Logistika LLC	APCS, MCDS, communication	Detailed design development, documents coordination and approval at BPSE and BPS of Ural Region; equipment supply, assembly, adjustment, system turnkey commissioning and start-up
Magnitogorskaya 500 kV Substation, Kropachevo 500 kV Substation, Privalovskaya 500 kV Substation, Smelovskaya 500 kV Substation — 4 substations	BPS of Ural Region	Magnitogorsk Region, Chelyabinsk Region	CJSC RTSoft	APCS	Pre-design survey of substations, design development
Kamenskaya 220 kV Substation	BPS of Ural Region	Sverdlovsk Region, Kamensk-Uralsky	Standart-Logistika LLC	APCS, process data acquisition and transmission systems	Design, supply of equipment for APCS and PDATS, pre-commissioning during the reconstruction of Kamenskaya 220 kV Substation
Cherkessk 330 kV Substation	BPS of Southern Region	Karachay-Cherkess Republic	JSC ENERGOSET-PROYEKT Institute	APCS, communication	<p>Development of project to develop of hardware and software for automated monitoring and control of Cherkessk 330 kV Substation: pre-design survey and analysis of basic and auxiliary equipment installed at Cherkessk 330 kV Substation, as well as information, process and engineering system components, communication systems and control wiring systems.</p> <p>Development of technical solutions to develop hardware and software for automated monitoring and control of Cherkessk 330 kV Substation.</p> <p>Development of design and cost estimate documentation for the project to develop hardware and software for automated monitoring and control of Cherkessk 330 kV Substation.</p>

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FACILITY	CLIENT	REGION	GENERAL CONTRACTOR	SUBSYSTEM STRUCTURE	SCOPE OF WORK
Yablonovskaya 220 kV Substation	BPS of Southern Region	Rostov Region	Energoservis LLC; CJSC Soyuz-Seti Engineering and Construction Company	APCS	Supply of equipment, assembly supervision, pre-commissioning of hardware and software equipment; acceptance testing within the construction of Yablonovskaya 220 kV Substation with 220 kV overhead transmission lines inlets
Shakhty 500 kV Substation, Frolovskaya–Shakhty 500 kV overhead transmission line, L-509 RoAES–Shakhty 500 kV overhead transmission line	BPS of Southern Region	Rostov Region	Evrokomplekt LLC; CJSC Russian Industrial Investment Company	Ice melting telematics	Supply of ice melting telematics, pre-commissioning, training for final customer's personnel
Shakhty 500 kV Substation, R-20 220 kV Substation	BPS of Southern Region	Rostov Region	Energoservis LLC; CJSC Soyuz-Seti Engineering and Construction Company	Telematics	Supply of equipment, pre-commissioning of hardware and software equipment, acceptance testing, commissioning
Goryachy Klyuch 220/110/35/10 kV Substation	BPS of Southern Region	Krasnodar Krai	ARTIS LLC	Data acquisition and transmission systems	Supply of equipment, assembly supervision and commissioning
Substation No. 2 (110-10 kV modular integrated transformer substation)	BPS of Southern Region	Krasnodar Krai	CJSC Setstroy	APCS	Pre-design survey, detailed design development, supply, assembly and pre-commissioning of APCS complex within the start-up facility of Substation No. 2 (110/10 kV modular integrated transformer substation)
Substation No. 3 (110-10 kV modular integrated transformer substation)	BPS of Southern Region	Krasnodar Krai	CJSC Setstroy	APCS	Pre-design survey, detailed design development, supply, assembly and pre-commissioning of APCS complex within the start-up facility of Substation No. 3 (110/10 kV modular integrated transformer substation)
Oznachennoye 500 kV Substation	BPS of Siberian Region	Republic of Khakassia	JSC ENERGOSSET-PROYEKT Institute	APCS, communication	Development of project to develop hardware and software for automated monitoring and control of Oznachennoye 500 kV Substation: pre-design survey and analysis of basic and auxiliary equipment installed at Oznachennoye 500 kV Substation, as well as information, process and engineering system components, communication systems and control wiring systems. Development of technical solutions to develop hardware and software for automated monitoring and control of Oznachennoye 500 kV Substation. Development of design and cost estimate documentation for the project to develop hardware and software for automated monitoring and control of Oznachennoye 500 kV Substation.

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FACILITY	CLIENT	REGION	GENERAL CONTRACTOR	SUBSYSTEM STRUCTURE	SCOPE OF WORK
Vlasikha 220 kV Substation	BPS of Siberian Region	Altai Krai, Barnaul	UTPK-Kompleks LLC	APCS	Supply of hardware and software equipment for APCS; assembly supervision and pre-commissioning of APCS hardware and software during the reconstruction of Vlasikha 220 kV Substation
Mangut 110 kV Substation, Solovyevsk 35 kV Substation, Troitskaya 220 kV Substation, Poltavka 110 kV Substation, BUR-1 220 kV Substation, Imbinskaya 220 kV Substation, Krasnaya Sopka 220 kV Substation, Rassvet 220 kV Substation, TPK 220 kV Substation, Troitskaya 220 kV Substation, Sharypovskaya 220 kV Substation, Uzlovaya 220 kV Substation, Khantagayty 110 kV Substation, Ak-Dovurak 220 kV Substation, Askiz 220 kV Substation, Teya 220 kV Substation, Sputnik 110 kV Substation, Vertikos 220 kV Substation, Volodino 220 kV Substation, Vostochnaya 220 kV Substation, GPP-220 220 kV Substation, Zonalnaya 220 kV Substation, Parabel 220 kV Substation, Sovetsko-Sosninskaya 220 kV Substation, Chazhemto 220 kV Substation, Chapayevka 220 kV Substation, Tomsk BPSE—26 substations	BPS of Siberian Region	Chita Region, Altai Krai, Omsk Region, Krasnoyarsk Krai, Republic of Tyva, Republic of Khakassia, Tomsk Region	CJSC NOVINTECH, JSC Elektrosentraladka	Telematics	Design works (including expertise of design and cost estimate documentation), detailed design development, supply of materials and equipment, construction and installation, assembly supervision, pre-commissioning (including individual and comprehensive testing), metrological support, pilot operation, personnel training
Asino 220 kV Substation, Zavyalovo 220 kV Substation, Kargasok 220 kV Substation, Melnikovo 220 kV Substation, Orlovka 220 kV Substation, Raskino 220 kV Substation — 6 substations	BPS of Siberian Region	Tomsk Region	PSI Energy LLC	Data acquisition and transmission systems, process data acquisition and transmission systems	Design works including expertise of design documentation, detailed design development and coordination with the client and JSC SO UES (System Operator of Unified Energy System)
Kirillovskaya 500/220 kV Substation	BPS of West-Siberian Region	Khanty-Mansi Autonomous Region, Kogalym	CJSC Soyuz-Seti Engineering and Construction Company	APCS, process data acquisition and transmission systems	Supply of equipment, pre-commissioning, training for final customer's personnel
Vasilyev (Bolshaya Yelovaya) 220 kV Substation	BPS of West-Siberian Region	Nizhneartovsk District of Khanty-Mansi Autonomous Region of Tyumen Region	Promstroy LLC	APCS	APCS development: detailed design development, equipment supply, assembly supervision, pre-commissioning, personnel training

REFERENCES

Projects for development of automatic process control systems, telematics, data acquisition and transmission systems, process data acquisition and transmission systems, and communication

FACILITY	CLIENT	REGION	GENERAL CONTRACTOR	SUBSYSTEM STRUCTURE	SCOPE OF WORK
Sidorovskaya 220 kV Substation	BPS of West-Siberian Region	Yamalo-Nenets Autonomous Region, Tazovsky District	Energotekhhkomplekt LLC	APCS, process data acquisition and transmission systems	Supply of equipment, local pre-commissioning (up to external row of terminals in the switchboard cabinet) for hardware and software systems of APCS and PDATS within the comprehensive and technical upgrade and reconstruction of Sidorovskaya 220 kV Substation
Novokiyevka 220 kV Substation, Shimanovsk 220 kV Substation, Svobodnenskaya 220 kV Substation, Talakan 220 kV Substation, Ulandochka 220 kV Substation, Khvoynaya 220 kV Substation, Energiya 220 kV Substation, Arkhara 220 kV Substation, Tungala 220 kV Substation—9 substations	BPS of Eastern Region	Amur Region	PSI Energo LLC	Telematics	Design works
Kotelnich 220 kV Substation, Kirov 220 kV Substation, Chepetsk 220 kV Substation, Zuyevka 220 kV Substation, Falenki 220 kV Substation, Murashi 220 kV Substation, Lebyazhye 220 kV Substation, Vyatskiye Polyany 220 kV Substation, Balezino 220 kV Substation, Komsomolskaya 220 kV Substation, Igra 220 kV Substation, Izhevsk 220 kV Substation, Pozim 220 kV Substation, Kama 220 kV Substation, Siva 220 kV Substation, Syuga 220 kV Substation, Sadovaya 220 kV Substation, Aprelskaya 220 kV Substation, Khimkompleks 220 kV Substation, Vladimirskaya 220 kV Substation, Bumazhnaya 220 kV Substation, Iskra 220 kV Substation, Kaliynaya 220 kV Substation, Kauchuk 220 kV Substation, Svetlaya 220 kV Substation, Emal 220 kV Substation, Gornaya 220 kV Substation, Tsement 220 kV Substation, Iren 220 kV Substation—29 substations	BPS of Eastern Region	Amur Region	PSI Energo LLC	Telematics	Design works

REFERENCES

Projects for development of automatic process control systems, telematics, data acquisition and transmission systems, process data acquisition and transmission systems, and communication

FACILITY	CLIENT	REGION	GENERAL CONTRACTOR	SUBSYSTEM STRUCTURE	SCOPE OF WORK
Substation No. 1 (110-10 kV modular integrated transformer substation)	JSC Russian Railways	Krasnodar Krai, Akhshtyr village	CJSC Setstroy, CJSC SP Energosetstroy	APCS	Pre-design survey, survey and issue of Certificate for selected location of satellite terminal installation; APCS detailed design development, equipment supply, assembly, pre-commissioning; pre-design survey and detailed design development for the arrangement of communication channels for telemetric data transmission and dispatch communication within the start-up facility of Substation No. 1 (110/10 kV modular integrated transformer substation)

REFERENCES

Projects for development of grid management centres, automated dispatch control systems, and automated dispatch (process) control systems

FACILITY	CLIENT	REGION	GENERAL CONTRACTOR	SUBSYSTEM STRUCTURE	SCOPE OF WORK
Grid Management Centre of JSC Vladimirenergo	IDGC (Interregional Distribution Grid Company) of Central and Volga Regions	Vladimir	Styles LLC	Grid Management Centre	Supply of hardware and software equipment for Grid Management Centre
			StroySvyazKomplekt LLC		Supply of PSIControl Base Edition software package; changing technical and detailed design; equipment assembly and adjustment; pre-commissioning
Grid Management Centre of JSC Ivenergo	IDGC of Central and Volga Regions	Ivanovo	Styles LLC	Grid Management Centre	Supply of hardware and software equipment for Grid Management Centre
			StroySvyazKomplekt LLC		Supply of PSIControl Base Edition software package; changing technical and detailed design; equipment assembly and adjustment; pre-commissioning
Grid Management Centre of JSC Nizhnovenergo	IDGC of Central and Volga Regions	Nizhny Novgorod	Styles LLC	Grid Management Centre	Supply of hardware and software equipment for Grid Management Centre
			StroySvyazKomplekt LLC		Supply of PSIControl Base Edition software package
Grid Management Centre of JSC Ryazanenergo	IDGC of Central and Volga Regions	Ryazan	Styles LLC	Grid Management Centre	Supply of hardware and software equipment for Grid Management Centre
			StroySvyazKomplekt LLC		Supply of PSIControl Base Edition software package; changing technical and detailed design; training course for client's specialists; hardware and software equipment installation; assembly and pre-commissioning
Grid Management Centre of JSC Tulaenergo	IDGC of Central and Volga Regions	Tula	Styles LLC	Grid Management Centre	Supply of hardware and software equipment for Grid Management Centre
			StroySvyazKomplekt LLC		Supply of PSIControl Base Edition software package; changing technical and detailed design; training course for client's specialists; hardware and software equipment installation; assembly and pre-commissioning
Grid Management Centre of Samara Region	JSC IDGC of Volga	Samara Region	CJSC NOVINTCH	Automated dispatch control system	Detailed design development; supply of equipment and materials; construction and assembly; pre-commissioning; pilot operation; acceptance tests
Facilities of BPS of North-Western Region	BPS (Bulk Power Systems) of North-Western Region		CJSC RTSof	Automated dispatch (process) control system	Development of project to establish Grid Management Centres for FGC UES affiliates — BPSE of BPS of North-Western Region: pre-design surveys; Grid Management Centre Project development in accordance with Terms of Reference; development of cost estimate documentation and design approval

REFERENCES

Projects for development of grid management centres, automated dispatch control systems, and automated dispatch (process) control systems

FACILITY	CLIENT	REGION	GENERAL CONTRACTOR	SUBSYSTEM STRUCTURE	SCOPE OF WORK
Bryansky Area Communication Centre, Smolensky Area Communication Centre, Novgorodsky Area Communication Centre, Kaliningradsky Area Communication Centre, Petrozavodsky Area Communication Centre, Titan 330 kV Substation, Tsentralnaya 330 kV Substation, Severnaya 330 kV Substation, Starorusskaya 330 kV Substation, Okulovskaya 330 kV Substation, Pskov 330 kV Substation, Novosokolniki 330 kV Substation, Velikoretskaya 330 kV Substation, Sovetsk 330 kV Substation, Talashkino 330 kV Substation, Roslavl 330 kV Substation, Smolenskaya 220 kV Substation, Bryanskaya 220 kV Substation, Tsementnaya 220 kV Substation, Novobryanskaya 220 kV Substation, Novobryanskaya 750 kV Substation	BPS of North-Western Region	Bryansk Region, Smolensk Region, Novgorod Region, Kaliningrad Region, Pskov Region	PSI Energo LLC		Pre-design survey of interaction facilities in the Grid Management Centre of North-Western Region
Grid Management Centre of Moscow Bulk Power Systems Enterprise (BPSE); Grid Management Centre of Upper Don Region, Grid Management Centre of Northern Region, Grid Management Centre of North-Eastern Region, Grid Management Centre of Oka BPSE, Grid Management Centre of Volga-Don BPSE	BPS of Central Region	Moscow, Tambov Region, Tver Region, Tula Region, Nizhny Novgorod Region, Volgograd Region	CJSC RTSof	Automated dispatch (process) control system	Development of project to establish Grid Management Centres for FGC UES affiliates — BPSE of BPS of Central Region: pre-design surveys; Grid Management Centre Project development in accordance with Terms of Reference; development of cost estimate documentation and design approval
Grid Management Centre of Stavropol Krai BPSE; Grid Management Centre of Kuban Region BPSE; Grid Management Centre of Rostov Region BPSE	BPS of Southern Region	Pyatigorsk, Tikhoretsk, Rostov-on-Don	CJSC RTSof	Automated dispatch (process) control system	Development of project to establish Grid Management Centres for FGC UES affiliates — BPSE of BPS of Southern Region: pre-design surveys; Grid Management Centre Project development in accordance with Terms of Reference; development of cost estimate documentation and design approval
Grid Management Centre of mid-Volga Region, Grid Management Centre of Lower Volga Region	BPS of Volga Region	Saransk, Samara	CJSC RTSof	Automated dispatch (process) control system	Development of project to establish Grid Management Centres for FGC UES affiliates — BPSE of BPS of Volga Region: pre-design surveys; Grid Management Centre Project development in accordance with Terms of Reference; development of cost estimate documentation and design approval

REFERENCES

Projects for development of grid management centres, automated dispatch control systems, and automated dispatch (process) control systems

FACILITY	CLIENT	REGION	GENERAL CONTRACTOR	SUBSYSTEM STRUCTURE	SCOPE OF WORK
Grid Management Centre of Sverdlovsk Region BPSE; Grid Management Centre of Perm BPSE; Grid Management Centre of Southern Ural Region of Chelyabinsk BPSE and Orenburg BPSE	BPS of Ural Region	Yekaterinburg, Perm, Chelyabinsk Region	CJSC RTSOft	Automated dispatch (process) control system	Development of project to establish Grid Management Centres for FGC UES affiliates — BPSE of BPS of Ural Region: pre-design surveys; Grid Management Centre Project development in accordance with Terms of Reference; development of cost estimate documentation and design approval
Grid Management Centre of Yenisey Region, Grid Management Centre of Transbaikal BPSE; Grid Management Centre of Kuznetsk Basin BPSE; Grid Management Centre of South-Western Siberia	BPS of Siberian Region	Krasnoyarsk, Ulan-Ude, Kemerovo, Omsk	CJSC RTSOft	Automated dispatch (process) control system	Development of project to establish Grid Management Centres for FGC UES affiliates — BPSE of BPS of Siberian Region: pre-design surveys; Grid Management Centre Project development in accordance with Terms of Reference; development of cost estimate documentation and design approval
Grid Management Centre of Khanty-Mansi Region BPSE; Grid Management Centre of Yamal-Nenets Region BPSE; Grid Management Centre of Tyumen BPSE	BPS of West-Siberian Region	Tyumen Region	CJSC RTSOft	Automated dispatch (process) control system	Development of project to establish Grid Management Centres for FGC UES affiliates — BPSE of BPS of West-Siberian Region: pre-design surveys; Grid Management Centre Project development in accordance with Terms of Reference; development of cost estimate documentation and design approval
Grid Management Centre of Primorsky Krai BPSE; Grid Management Centre of Khabarovsk Krai BPSE; Grid Management Centre of Amur Region BPSE	BPS of Eastern Region	Vladivostok, Khabarovsk, Svobodny	CJSC RTSOft	Automated dispatch (process) control system	Development of project to establish Grid Management Centres for FGC UES affiliates — BPSE of BPS of Eastern Region: pre-design surveys; Grid Management Centre Project development in accordance with Terms of Reference; development of cost estimate documentation and design approval
Substations of BPS of Central Region, Moscow Grid Management Centre	FGC UES (Federal Grid Company of Unified Energy System)	Moscow, Moscow Region	CJSC CROC Inc.		Pre-design survey to establish Grid Management Centres
			CJSC RTSOft	Automated dispatch (process) control system	Development of comprehensive testing procedure for information and software package of automated dispatch (process) control system in accordance with the requirements of FGC UES