Corporate Insurance in the Russian Electric Power Industry*

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Abstract. In this article insurance risks of electric power industry of the Russian Federation, corporate insurance of electric power objects are considered. The special attention is paid to the types of insurance inherent in this branch, widespread in the Russian Federation, and also the types of insurance having development prospects in the country.

Аннотация. В статье рассмотрены риски российской энергетической промышленности, которые могут быть компенсированы страховыми программами. Особое внимание уделено тем видам страхования, которые представляются наиболее перспективными для нашей страны.

Key words: Power, insurance, system operator, NOREM, insurance of hydro-, thermal, nuclear power objects, especially dangerous objects, business interruption.

Insurance can be referred to as the important factor of risk management of the Russian companies, promoting growth of national economy, as it allows to minimize losses of the capital, business, or deterioration of corporate image. Formation of the market of insurance services in the sphere of power generation industry can provide protection of the enterprises against consequences of various financial, natural, technogenic or other adverse events.

Now in many countries restructuring of economy in power generation branch is carried out. Also, the markets of electric power are developing. Modern reforming of this branch in Russia began with the Resolution of the Government of the Russian Federation of 11.07.2001 No. 526 "About the reforming of electric power industry of the Russian Federation". This resolution defined liquidation of the national vertically integrated monopoly, represented by JSC RAO UES holding, due to its inefficiency (it was completely disbanded by July 1, 2008), division of assets of the company, according to kinds of activity — production, transfer and distribution, sale, dispatching control of electric energy. So, during 2000–2008, electric power consumption of GDP was decreasing by more than by 4% a year, and, finally, in 2007 level of production of 1990 was reached.

After the reform of the energy sector since 2003, the Russian Federation has moved to a new model of wholesale market of electricity and capacity (NOREM)[1]. The aim of this transformation was to create the conditions for development of competition in the industry, reduction of state regulation, transition of the power sector from centralized management to the competitive market. The growth of electricity consumption in the Russian Federation increases the risks and, accordingly, the insurance in the electric power industry is becoming increasingly important.

Deregulation brought competition with new risks for incumbents, such as potential loss of the market share to new entrants and uncertainty about retail prices. Deregulation also brought more regulation — on how competition should be played, how distribution companies should be unbundled, and which acquisitions can be authorised[2].

Moreover, as more and more utilities are becoming listed enterprises, a larger proportion now faces

[1] Markets of electric energy and power, Non-profit partnership (NP) "Market Council" Training center.— M, 2012.— 365 pp.

[2] Risk Management in the Electricity Industry — White Paper I — Overall Perspective. EURELECTRIC group on Risk Management.— January 2007, 16 p.

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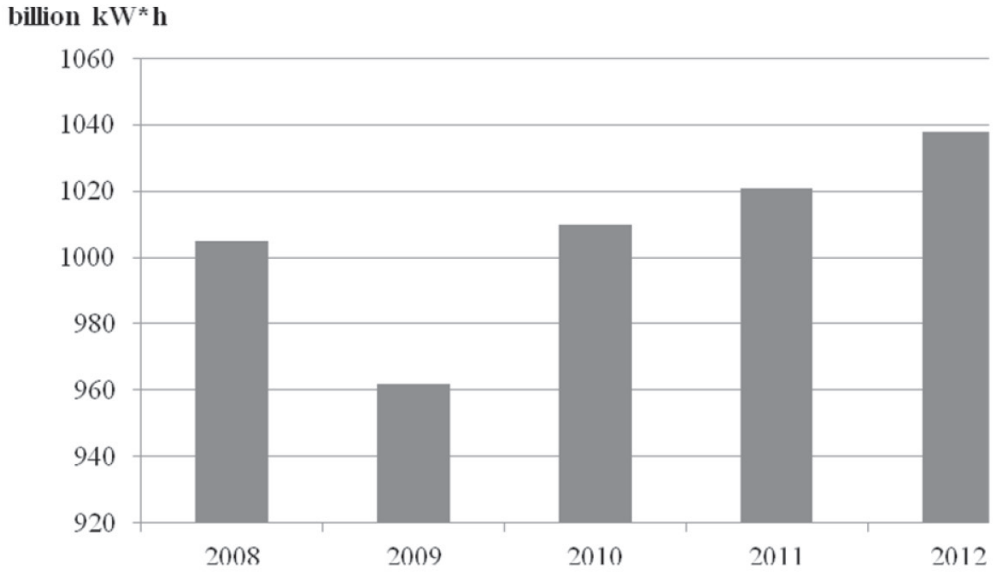

Figure 1. Electricity consumption in the Russian Federation.
Source: official site of SO EES (URL: www.so-ups.ru).

an increasingly risky environment on their own, with gradually less protection provided by their national governments.

1. ENTERPRISES OF ELECTRIC POWER INDUSTRY AS SPECIFIC OBJECTS OF INSURANCE

Electric power industry[3] is the branch of economy of the Russian Federation, which includes a complex of economic relations, arising in the course of production, transfer, sale and consumption of electric energy with the use of production, and other property objects, belonging to subjects of electric power industry, subjects of supervisory control in electric power industry. Subjects of electric power industry can be divided into groups: the persons, which are carrying out activity in this sphere, and electric power objects (generation facilities) — the property objects, which are directly used in processes of electric power industry.

Russia takes the 8th place in export of electric energy abroad. The greatest development and distribution in Russia was generated by the public thermal power plants using organic fuel (gas, coal)[4].

As of November 1, 2014, in the wholesale market 90 suppliers, 249 resellers and 5 regulating bodies (infrastructure organizations) were registered[5]. In Russia operate 32 power units, which generate 16% of all electric energy consumed in the country (Figure 1). In general, in Russia volumes of power industry are so great, that simultaneous modernization of all branch is too difficult to realize. Since 2003, no more than 10–15% of these objects were upgraded, therefore obsolescence of the equipment is the main problem of this branch.

Insurance cost for the companies, operating on the power market, depends on their geographic location. So, the more densely the area around the enterprise is occupied, the more expensive the cost for the insurance is.

For insurance in power industry, the major importance is taken by the definition of technological aspect of activity, where, the basis of functioning is made by a uniform electric network, territorial distributive networks and uniform system of supervisory control, see Figure 2.

Power industry is still rather concentrated in part of the enterprises of generation and transfer of the electric power, where only large holdings are widespread (whose divisions work on over Russia).

Services in supervisory control in power industry are the methods for the centralized management of technological operating mode of power generation facilities and the power receiving devices of consumers of electric energy for providing reliable power supply and quality of electric energy. They solve three major problems: the prevention of emergencies when they appear, timely localization of an emergency, revival of power supply in the shortest possible time.

[3] The Federal Law of 26.03.2003 N 35-FZ (an edition of 21.07.2014) "About electric power industry".
[4] According to the Ministry of Energy of the Russian Federation (URL: www.minenergo.gov.ru)
[5] According to the Non-profit Partnership (NP) "Market Council" (URL: www.np-sr.ru)

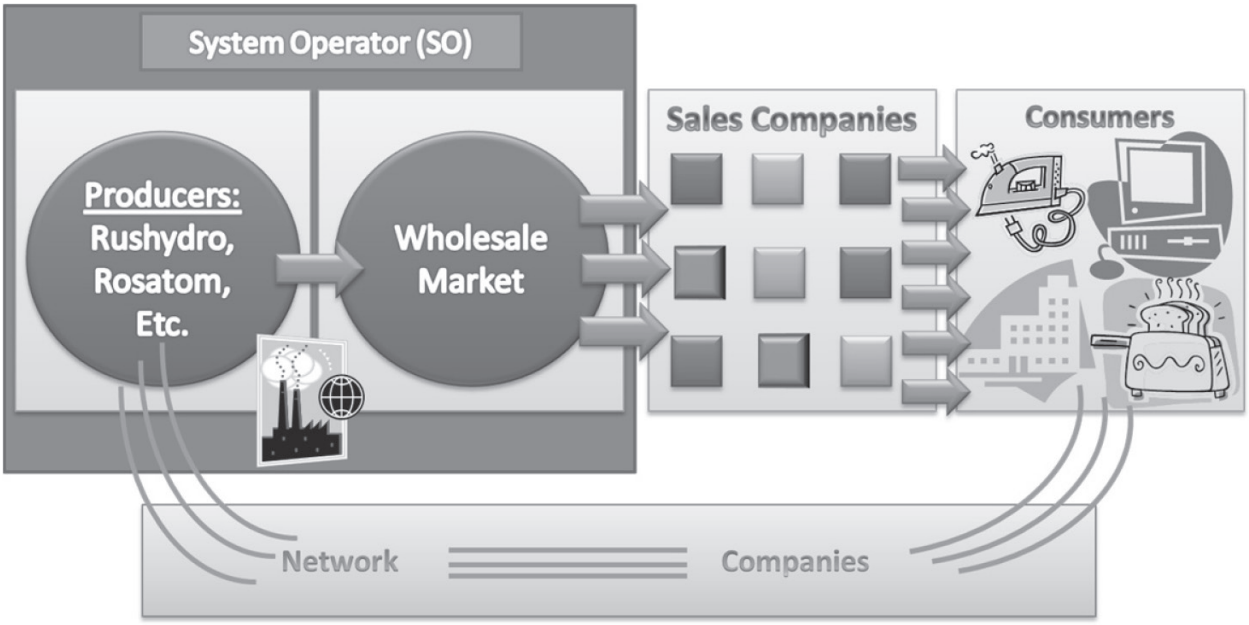

Figure 2. Participants of the electrical power market.

The System Operator is the specialized organization, which is individually implementing the centralized supervisory control within the power pool system of Russia (JSC SO EES).

In order to protect property interests of subjects of electric power industry and consumers of electric energy, the System Operator is obliged to carry out insurance of risk of responsibility for breach of contracts of rendering services in supervisory control in electric power industry.

The margin volume of the means, intended for the specified type of insurance, is defined according to federal laws and is included in payment for services in supervisory control in power industry.

This amount has a target use. So, for example, the volume of the funds for insurance, considered in a tariff for services, of JSC SO EES in 2014 made 31360505,00 rubles[6] (obligatory insurance of risk of responsibility for causing damage to subjects of power industry), and an insurance premium under the contract of insurance of JSC SOGAZ of 29133909,15 rubles[7].

2. RISKS IN ELECTRIC POWER INDUSTRY

Any power object is subject to a large number of technological hazards. Scales of risks are the main features of insurance of objects of fuel and energy complex. Losses, which arise in energy industry, are comparable only with possible losses in space industry. The have no analogs on potential consequences for people around.

Today, there are two main reasons for losses in energy industry: technogenic reasons and human factor. The first reason is connected with obsolescence of equipment, low-quality assembly and installation. Average age of the equipment of fuel power station in Russia is 30 years, thus the age structure of the equipment now (in % of set capacity): till 30 years — 41%; from 31 year to 50 years — 52%; more than 50 years — 7%. The second reason of losses is connected with the insufficient level of training of the personnel, aging of workers, shortage of the professional personnel and its elimination in other branches, physical activity and overfatigue.

In Figures 3, 4 the number of fatal accidents from 1999 for 2009 is shown. Department of Power Supervision regularly carries out scheduled maintenance on injury prevention. Effectiveness is confirmed by a steady tendency of decrease in the number of group and fatal accidents on power installations. For the ten-year period total number of accidents decreased by 6 times.

From January 1 till December 31, 2013, on power generation facilities and in installations of consumers of electric and thermal energy 112 accidents (for the similar period of 2012–180 accidents) were recorded[8]. Investigation of the reasons is carried out by *Rostekhnadzor* (the specialized governmental organization).

[6] The annual report of JSC SO EES for 2013.
[7] *Ibidem.*

[8] *Rostekhnadzor* has summarized the work of the state organs for 2013. Data of the Federal service for environmental, technological and nuclear supervision.

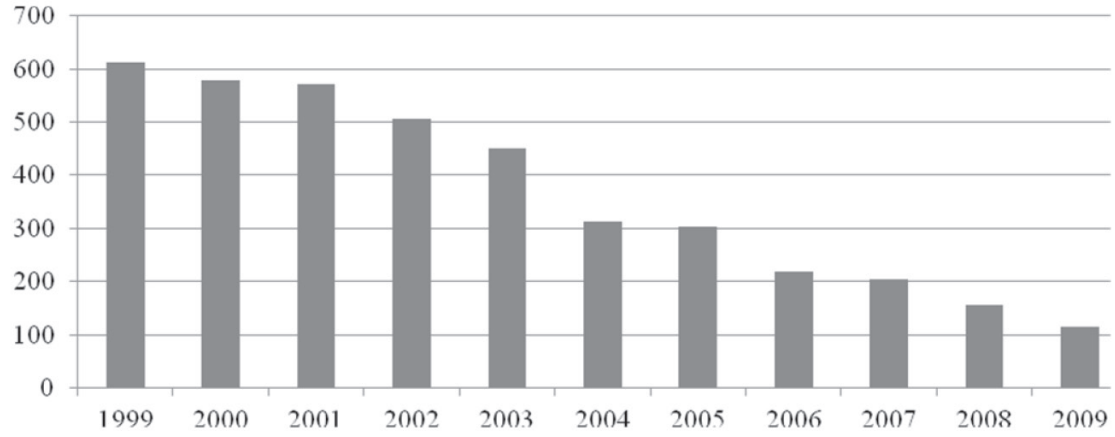

Figure 3. Quantity of fatal accidents in power industry of the Russian Federation.
Source: Newsletter of the Federal Service. Department of Power Supervision. Accident rate and traumatism at power stations and networks, electric installations of consumers in 2008–8 p.

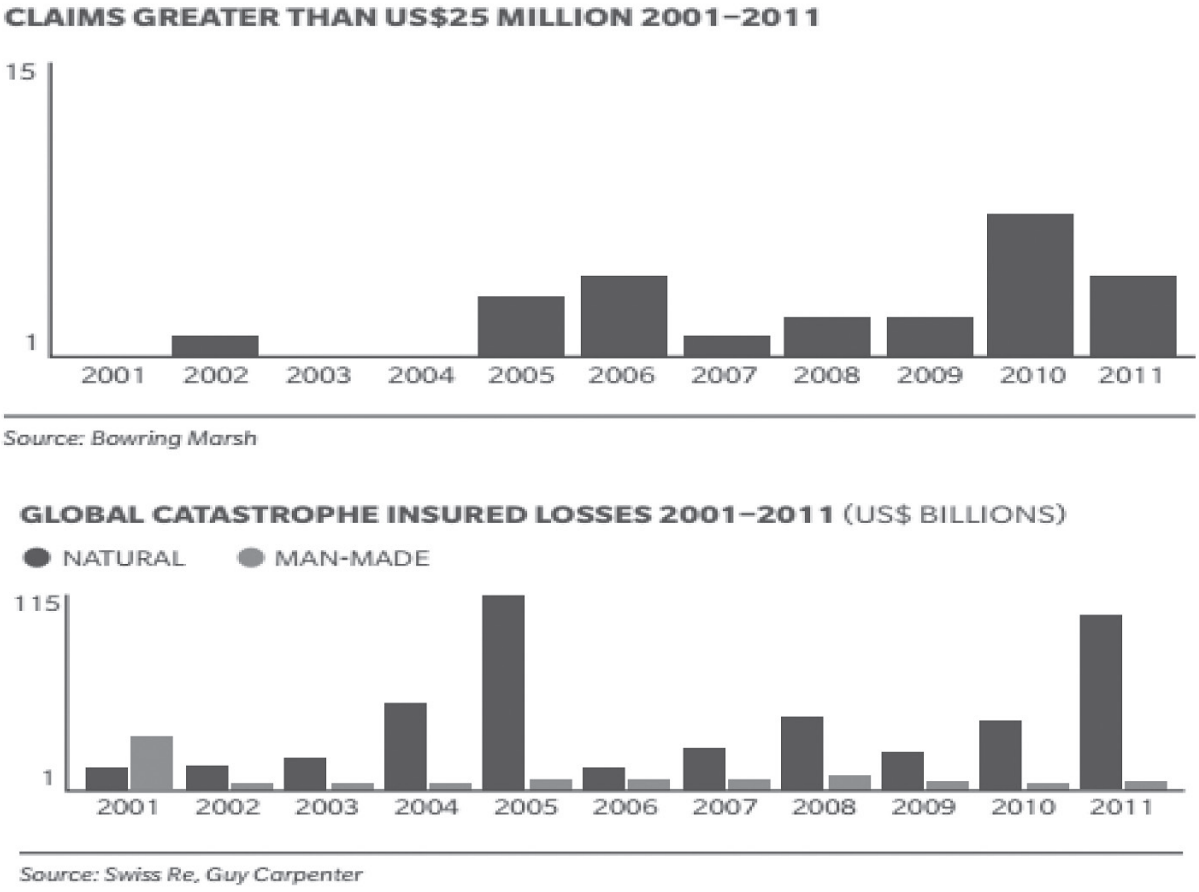

Figure 4. Claims and global catastrophe insured losses 2001–2011

Figure 5 shows statistics of fatalities in the US for the same period. Comparing two figures, there can be pointed out some peculiarities: in Russia the number of fatal accidents has a strong decreasing trend and in the US the trend is slowly decreasing and the average is equal to 250. And we can see a slow tendency for the period of 2007–2009 for reduction in the number of fatal accidents. In a nutshell, for the 10-year period, Russian Federation could cut the significant number of accidents, and in 2009 statistics is better than in the US.

According to the Department of Power Supervision, the analysis of traumatism on thermal and electrical units showed that for the first half of the year 2013 in comparison with the similar period of 2012 the number of accidents has not changed. Thus, the greatest number

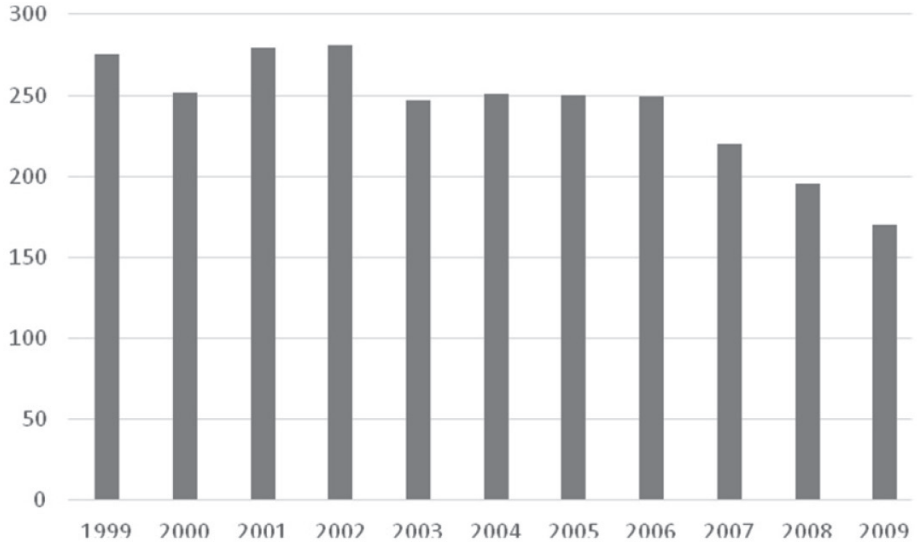

Figure 5. Trends in occupational electrical fatalities in the U.S 1999–2009.
Source: Advancements in the Practice Electrical Safety, IEEE South Alberta Section IAS-PES Chapter, may 13–14, 2013 (URL: http://sites.ieee.org/)

Table 1. Traumatism indicators in the Russian Federation for 2008–2009 in the sphere of electric power industry.

Number of accidents and victims	**2008**	**2009**
1. Fatal accidents, including:	144	104
in electric installations	139	104
in heat installations	5	0
2. Group accidents, including:	21	12
in electric installations	20	12
in heat installations	1	0
3. Victims with a deadly outcome, including:	156	115
in electric installations	150	115
in heat installations	6	0

Source: Newsletter of Federal Service. Department of power supervision. Accident rate and traumatism at power plants and networks, electric installations of consumers in 2008–8 p.

of fatal accidents in 6 months 2013 occurred 39 times: on electric installations of consumers — 30 (70%) and in electric networks — 9 (21%)[9]. In 2012 and 2013 on thermal and electrical units 125 and 101 were registered[10].

Along with the general decrease in number of accidents there was also a decrease in indicators of lethal traumatism at power stations, electric installations of consumers, in electric networks (see Table 1), and the majority of cases occurred in electric installations.

Also, until recently, the risk of theft of wires was considerable. In the last years, considerable decrease in losses in this kind of risk is reached. If up to the middle of the 2000-s in the Central and Far East part of Russia it was one of the most typical losses for the network companies, on which large volume of compensations spread, now it has considerably decreased.

At last, financial and economic risks include: fluctuations of financial market conditions, the change

[9] The analysis of efficiency control — scheduled maintenance on accident prevention on power generation facilities in 6 months 2013. Data of Federal service on ecological, technological and nuclear supervision.
[10] *Rostekhnadzor* summed up the results of power supervision for 2013. Data of Federal service on ecological, technological and nuclear supervision.

in price for fuel (gas, oil, coal), tariffs for the electric power, increase in interest rates on the credits, cancellation of contracts with the tenant, because of non-delivery of goods, undersupply of goods in the specified quality and quantity, the compelled idle times in work.

Risks in energy industry, depending on the size of damage, can be divided into 4 groups:

- Small (to 1 million rubles);
- Average (to 10 million rubles);
- Large (to 500 million rubles);
- Catastrophic (over 500 million rubles).

Small risks usually arise in case of refusal, failure, obsolescence of equipment (short circuits, fires, wire breakage). As a rule, this group of risks is not insured. Average risks include breakage of machines and mechanisms, falling of the high voltage line. They are insured more often, than small, if there is an economic feasibility. According to Federal Grid Company (FSK EES), the number of such accidents on 1000 c.u. of service of the company for 2013 decreased by 14,9%, having made 2,29[11].

Large risks mean failure of the large equipment, natural disasters, the all-station fire, and the companies seek to insure this group of risks, as the most dangerous to activity. According to the reinsurance company Swiss Re[12], globally for 2012–2013 losses from large accidents made 196 and 130 billion dollars. Smaller-scale accidents happen in the world almost daily.

3. RISK MANAGEMENT OF THE POWER ENTERPRISES

Fortum, ENEL, E.ON are the most significant foreign companies in the Russian electricity market.

The main policy-related risks in Russia are linked to the development of the whole energy sector, part of which, namely wholesale power market, is liberated while other parts, like gas, heat, and retail markets, are not. Currently, there is the risk that the government will freeze tariffs of certain regulated products including gas, which creates a risk for Fortum's efficient operations. Cross-subsidies, which are supposed to be eliminated but still exist, compromise the competitiveness of energy-efficient combined heat and power (CHP) production[13].

Besides, the key components of the E.ON company's risk management system include group-wide policies and reporting systems, standardized group-wide strategy, planning, and controlling processes, internal auditing activities, specific group-wide risk reporting based on the German Corporate Sector Control and Transparency Act (KonTraG), and the Risk Committee, which ensures the strategy agreed by the Board of Management in relation to the risk policy covering commodity and credit risks is implemented and complied with.

The ENEL company's management policies were developed for each category of risk, identifying management and control roles and responsibilities: the governance model for financial, commodity and credit risks, strategic policy-making responsibilities for risk management activities and supervision of risk management and control activities to special risk committees, both at the group level and at the division/company level[14].

In the leading Russian companies risk management started developing rather recently, therefore, these measures, perhaps, include smaller organizational and technical support, but, nevertheless, have the high potential of development, in view of their considerable share in the market. In JSC Atomenergosbyt process of formation of the corporate control system of risks (CCSR) began in 2010, according to the Risk Management Policy: development of organizational structure; integration with business processes; development of methodology; development of knowledge and competences of participants. The main document, defining process of formation of documentation on risk strategy management and the corresponding indicator of efficiency of activity (KPE) in JSC RusHydro is the Provision on strategic management, and also the company annually makes the register of strategic risks with definition of owners of risks, which is approved by the Board[15].

Also, one of the methods of price risk management of the Russian companies is the use of derivatives. Existence of speculators in the market allows redistributing risks in parts from power branch to financial sector, and also to other sectors, anyway connected with electric power industry sector. The exchange and off-exchange urgent contracts, based on basic financial contracts or operations, can be referred to derivative tools (derivatives), for example: forward and future contracts, exchange and off-exchange options, swaps and exchange derivatives for swaps[16]. In Russia,

[11] The annual report of Federal Grid Company (FSK EES) for 2013.
[12] Swiss Re. Sigma preliminary estimates: natural catastrophes and man-made disasters in 2013 cost insurers worldwide USD 44 billion, 18 DECEMBER 2013, ZURICH (URL: http://www.swissre.com).
[13] Annual report 2013, Fortum.
[14] ENEL Annual report 2013.
[15] The annual report of JSC RusHydro for 2013.
[16] Pavlova O.S. Risk-management na rossiyskih energeticheskih predpriyatiyah [Risk-management on Russian energy enterprises]. Vestnik nauchno-tehnicheskogo razvitiya — News of technical and scientific development № 6 (46), 2011–43 pp.

this activity is carried out by Moscow Power Exchange open joint-stock company, but now the exchange does not have enough distribution among participants as means of hedging. Following the results of 2012 on the basis of exchange quotations by bidders, there were signed contracts on 21 600 MWh[17], at the general consumption in 2012 about one thousand billion.

4. INSURANCE OF THE POWER ENTERPRISES

The most reliable and simple protection of the enterprise against influence of the internal and external risks of random and unforeseen character is complex insurance (CAR Insurance), which provides compensation in case of losses of the income and property.

After disintegration of RAO UES of Russia, centralization and control over insurance of the enterprises of electrical power branch were lost. The largest enterprises of power industry still continue to insure the risks, some of them are insured in the affiliated companies, however, the majority of the enterprises continue to be insured in the market companies: ROSNO, Rosgosstrakh, AlfaStrakhovanie, etc.

One of the largest consumers of electric power in the wholesale market, JSC Novosibirskenergosbyt, in 2013 signed contracts on the following types of insurance: voluntary medical insurance, voluntary insurance of vehicles, insurance of property upon all risks[18].

The structure of insurance of consumers and generators in the market is different, because consumers' companies do not include the risks, connected with electricity generation.

Insurance in the sphere of electric power industry can also include insurance of freights, insurance of machinery and equipment upon breakages, interruptions in production activity, obligatory insurance of a civil liability of the owner of dangerous objects (ODO). For example, some of the key products and features for the power generation and utilities industry of Zurich insurance company includes:

- First-party property insurance;
- Machinery breakdown;
- Time element coverage;
- Primary general liability, umbrella liability and workers compensation;
- Every energy customer gets a single point of contact for all underwriting needs and a claims service account executive to coordinate claims service;
- Broad policy coverage available including property damage and boiler and machinery;
- Business interruption and contingent business interruption.

Zurich offers property and casualty solutions for companies in these utility segments:

- Power generation utilities;
- Independent power producers;
- Integrated water and power production;
- Desalination facilities.

In Canada Chubb offers property and casualty solutions for companies in these utility segments:

- Gas and coal-fired power facilities;
- Wind energy facilities;
- Hydroelectric facilities;
- Waste-to-energy facilities — biomass, municipal solid waste;
- Solar facilities;
- Geothermal facilities;
- Electric and gas utilities.

Chubb' hallmark package product features a modular format and an automatic blanket limit of up to $250,000. Valuable features of Chubb's package product for the renewable energy industries include:

- All-risk property protection (turbines, boilers, transformers, powerhouses, solar panels, conveyors, fuel cells, shops and offices);
- Machinery breakdown, electrical arcing and steam explosion perils can be incorporated into a package policy;
- Business income and extra expense insurance are available.

Liability insurance provides protection for bodily injury, property damage, personal injury and advertising injury. It includes general liability insurance for all power generation, transmission and distribution operations, as well as newly acquired or formed organizations. Liability enhancements in Chubb's package approach for the power industry:

- Simplified rating approach based on kilowatt hours and pounds of steam;
- Failure to supply insurance protection.

Since January 1, 2012 came into force the new law 256-FZ of 21.07.2011 "About safety of objects of fuel and energy complex", obliging owners of these objects to insure responsibility for the harm, against the accidents which resulted from act of terrorism or diversion. This law was developed after the explosion on the Baksan hydroelectric power station, which happened in July, 2010, damages from which are assessed at over 800 million rubles. Also, the Federal Law No. 225-FZ "About obligatory insurance of a civil liability of the owner of dangerous object for infliction of harm as a result of accident on dangerous object" which obliges to insure hydraulic engineering constructions, and also nuclear power plants. Before the adoption of

[17] Annual report of Open Joint Stock Company Moscow Energy Exchange for the year 2012.

[18] Results of procurement procedures of Novosibirskenergosbyt for 2013.

law, enterprises were compelled to allocate funds for insurance of dangerous objects from their profit, now these expenses are put in product cost. In one and a half years of action of the law, only about 200 million rubles were paid by insurers: accidents on dangerous objects happen not so often, but their consequences can be catastrophic for the whole region or several areas. Moreover, payments for such accidents often have the delayed character. Also, the structure of insurance can differ by the form of generation.

The market of insurance of the companies of nuclear power in the Russian Federation has two segments: obligatory insurance of responsibility of the organizations, operating objects of use of atomic energy, and voluntary insurance of risks of the enterprises of nuclear power.

The first (obligatory) segment in Russia corresponds to the developed international practice and requirements of the Vienna convention of 1963. In the territory of Russia requirements came into force in 2005. The largest supplier of atomic energy in the Russian Federation, Rosenergoatom Concern, annually signs the contract of insurance of responsibility, submitting to the requirements of the Vienna convention on a civil liability for nuclear damage.

The insurance sum of JSC Rosenergoatom in 2012 reached 7 billion rubles, and an insurance premium — 366 million rubles[19]. Insurance is carried out by the Russian Nuclear Insurance Pool (RNIP) consisting of 23 insurance companies (according to the Russian Nuclear Community, in 2013 the greatest share belongs to the SOGAZ company).

The total volume of collected insurance premiums in a segment of voluntary insurance of the enterprises of Rosenergoatom is estimated at 6–7 billion rubles, about 70% from them gather SOGAZ and MAX insurance companies. In 2014 SOGAZ insured property of all 10 Russian nuclear power plants for the total insurance sum of 1,2 trillion rubles.

Level of coverage of power generation facilities insurance after liquidation of RAO UES of Russia (after 2003) significantly didn't change. The largest company of producing hydroelectric power in Russia, JSC RusHydro, adds risk, specific to this fuel: risk of the inexact forecast of water content.

Owing to a large number of the risks inherent in business, the company in 2013 carried out complex insurance protection on the following types of insurance: insurance of property upon all risks; insurance of a motor and water transport; insurance of construction risks (EAR Insurance); insurance of a civil liability of organizations operating dangerous production facilities and hydraulic engineering constructions; voluntary medical insurance and insurance upon accidents; insurance of a civil liability of members of governing bodies and officials of JSC RusHydro.

Insurance of risks of breaks in production (business interruption or BI) are single cases, generally used at the sales companies, which are carrying out services in resale of the electric power to consumers. BI means the financial loss of the owner, caused by the idle time of the enterprise, and it is applied in insurance companies such as Energogarant, AlfaStrakhovanie. This type of insurance is widespread in the international practice. Over the past five years, this risk has been in the steady increase. Energy companies are buying more business interruption cover, as refining and processing margins maintain their healthy levels in the US[20]. By various estimates, losses from the compelled idle times of the generating equipment of suppliers of the wholesale market of the electric power "take away" about 3% of revenue. Making out the policy of assurance of idle times, the enterprise gets confident, that the most part of losses during idle time will be compensated. So, it obtains a certain guarantee of economic stability.

Insurance of the high voltage line and networks of data transmission on big distances in Russia is developed poorly. Generally, mobile network operators of communication are interested in cable insurance. The main risks on which they try to protect themselves are natural disasters and illegal actions of the third parties (plunder).

As the cost of such insurance is usually carried by the customer of the project, the project organization, as a rule, refers to the insurance company, if it is needed by the initiator of works on research, so this type of insurance is not yet popular.

Furthermore, in Russia insurance upon risks of designer, which is a very widespread type of insurance in Europe, can be developed. As expenses for this type of insurance are incurred usually by the customer of the project, the design organization, as a rule, addresses to insurance company, only if the initiator of works on research insists on it, therefore this type of insurance isn't popular.

Also insurers offer insurance of additional risks. The AIG company includes the following additions and extensions of insurance programs of power generation facilities: a compensation for expenses on ensuring access to the damaged property, clearing of blockages and fragments, automatic protection of small repair or construction projects, etc.

Among other things, in the last five years, emerg-

[19] The quarterly newsletter of "NASAO" for July, 2012, No. 3.— p. 4.

[20] Energy insurance trends. *OIL & GAS Financial Journal*, 16.12.2014.

ing and developing countries' investments in solar and wind energy plants have virtually doubled[21]. Leading producers of wind power are the United States, China and Spain. The European Union intends to increase the renewable energy share of total energy production to 20% by 2020[22]. So, if these sources of renewable energy are in high demand, the risks inherent in the transportation, construction and installation of transmission lines and power stations can be different in contrast with traditional energy resources. A downside of renewable energy particularly, wind and solar technologies, is the volatile supply of power and the location gap between consuming and producing. Many international companies, such as AIG and Allianz try to provide insurance services for all kinds of energy production. Robert Maurer, head of Engineering Germany at AGCS, explains how company tries to "…understand exactly what our customers do and can give them competent support when they develop their technologies and business models further"[23].

Non-life insurance premiums slowly grew by 2.5% in Central and Eastern Europe (especially in Russia — its growth was 1.5%)[24]. The growth was equal to 4.8% in 2012 (2011: 2%)[25]. It was driven by strong improvements in most business lines in Russia (13%), the largest market in CEE.

Insurance of the enterprises of fuel and energy complex of Russia till 2009 can also be characterized by the annual growth of indicators of activity of insurance companies. In 6 years insurance premiums of the energy industry enterprises increased by 4 times, see Table 2.

Peculiarity of power objects in terms of insurance is their allocation in category of hazardous production facilities. As the most perspective direction in insurance of energy industry, insurance of especially dangerous objects (a component of insurance of responsibility) in the volume of all Russian market in 2012 made 10–11 billion rubles (about 1,2% of all types of insurance collected), and in 2013–9,1 billion rubles (1% of all insurance collected), which means the decrease in growth rates of the market of insurance, reclassification of dangerous objects and growth of the maximum discount for the high level of safety. Insurance of power industry influences specifics of risks; the companies partner only with those insurers, who are capable to provide efficiency of insurance and a guarantee of indemnification in fuel and energy branch. The main insurers by the volumes of insurance premiums in the first half of the 2014 year are SOGAZ, Rosgosstrakh, Capital, VSK, AlfaStrakhovanie — some of the largest insurance companies of the Russian market.

Among important insurance events, it is possible to mention accident on August 17, 2009, driven by the destruction of fasteners on Sayano-Shushenskaya hydroelectric power station. As a result of accident, 75 people were lost, more than 40 tons of lubricating oil poured out to the water area of Yenisei river. Rosprirodnadzor assessed damages to the Yenisei at 883,63 million rubles. The property of Sayano-Shushenskaya hydroelectric power station was insured in ROSNO for $200 million, employees were also insured in ROSNO for 500 thousand rubles per person. The civil liability of the owner of hydroelectric power station was insured by AlfaStrakhovanie company. Risks under the contract were reinsured in the international market, mainly reinsurance was provided by Munich Re. The risk of a break of production of this enterprise was insured in Ingosstrakh, but even such record sum of insurance didn't cover the cost of repair of station as damages were assessed at 7,5 billion rubles.

In 2013 at the Zagorsk pumped storage power plant construction works were stopped because of an accident, which resulted from a sag of a plate of the base. The company had a contract of insurance of assembly risks with AlfaStrakhovanie, with a covering limit at 13,7 billion rubles and a cost of 10,4 million rubles, validity period of 2 years and 7 months. The damage was estimated at 14 billion rubles.

Also, 1,8 billion rubles were paid to IDGC Holding for damage from sleet in 2010. About 95% of these losses were covered by insurance payments.

Nowadays, after events on Sayano-Shushenskaya hydroelectric power station, control in the sphere of power industry is strengthened, additional investments are allocated for renovation, modernization of equipment. Also, some increase in volume of insurance due to modernization of the available objects or commissioning of new capacities is possible.

In a nutshell, there can be pointed out 3 main types of insurance of the Russian energy industry enterprises: corporate insurance of staff of energy industry (voluntary medical insurance, pension insurance and insurance upon accidents and diseases), property insurance and insurance of a civil liability. Besides, corporate social responsibility in the energy industry enterprises is being developed: protection of staff of

[21] CRO FORUM. Power Blackout Risks. Risk Management Options: Emerging Risk Initiative — Position Paper, November 2011, 31 p.).
[22] *Ibidem*.
[23] Global Risk Dialogue. Allianz Global Corporate & Specialty, Autumn 2013, 31 p.
[24] Swiss Re sigma study on world insurance in 2013 says premium growth slowed largely due to weak life sales in advanced markets, Sigma, 25 JUNE 2014, ZURICH.
[25] World insurance in 2012. Progressing on the long and winding road to recovery. Sigma No 3/2013, 42 p.

Table 2. Insurance premiums, 2004–2009.

Indicator	2004	2005	2006	2007	2008	2009
Premiums, billion rubles	7,5	19,2	22,1	26,5	29,6	31,3
Insurance of staff of energy industry, %	21,3	23,4	26,2	23	33,4	33,2
Property insurance, %	74,7	72,4	71	75,1	64,2	63,6
Insurance of responsibility, %	4	4	2,8	1,7	2,2	3,2

Source: How to insure energy industry really not to be afraid: Internet portal of energy industry community.

the energy industry enterprises, interests of the third parties and environment.

Insurance is the main tool of complex system of risk management of the enterprise, urged to reduce all risk factors to a minimum. It is a source of compensation of loss of property of the owner, if there are adverse events in the operation of the company.

CONCLUSION

Increase of the competition and socialization, interindustry expansion are inherent in the market of insurance of energy industry. Their development, collaboratively with the growth rates of energy industry, will define the further formation of the market of electric power insurance and also fuel and energy complex in general, which is now characterized by the following:

1. Insurance protection in energy industry is at a very low level, which is caused not by the absence of supply in the market, but by a lack of understanding of requirements to insurance companies and to the offered products of insurers (absence of insurance risks included in insurance contracts).

2. Presence of the private companies in the market of insurance of energy industry increases, insurance premiums raise, their structure changes, the tendency of interindustry distribution of insurance of large risks is observed.

3. In the Russian power industry, several types of insurance, which provide a continuity and development of business activity, are insufficiently demanded: insurance of losses from breaks in production, insurance of construction risks.

4. Insurers are not engaged in financing the outdated, broken and low-quality production and consequences of their damages from accidents and the technogenic reasons, as this risk is an exception of an insurance covering of the majority of insuring companies.

5. Systems of internal audit demand considerable improvement with the aim of minimization of all possible risks.

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