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Problems of implementation of the energy management system in Russian companies

At present the problems of energy conservation and energy efficiency are actively solved at the state and regional levels, as these areas contribute to the modernization of the Russian economy and transfer it to an innovative way.

The international standard ISO 50001 supports organizations in all sectors in their efforts to use energy more efficiently through the development of the energy management system. According to the developers, the introduction of the energy management system will contribute to the integration of energy efficiency in the overall concept of the organization's management and increase the transparency of the management in companies. Also, the Russian government pays great attention to energy conservation. For example the Federal Law № 261-FZ [1] «About energy saving» was adopted in November 23, 2009. Study of the energy management system is actively engaged by Akrapovich R.A., which determined the prospects for implementation of ISO 50001 in Russia. Besides, Savin K.N. and Syshchikov G.N. consider quality management of electric energy through ISO 50001.

This article focuses on the development of the energy management system in Russia as one of the most effective ways to solve the problems of energy efficiency and resource conservation in the country. The purpose of this article is to identify the main problems in the implementation of the energy management system in Russian companies on the example of «Interregional Distribution Grid Company of Siberia» (JSC «IDGC of Siberia»). The following tasks were set to achieve the goal: an analysis of the new version of the quality manual of «IDGC of Siberia» to meet the requirements of ISO 50001; Internal audit in the branch of JSC «IDGC of Siberia» – «Khakasenergo» in the implementation SenM.

JSC «IDGC of Siberia» is a subsidiary company of «Rossetti», which provides transmission and distribution of electricity in the Siberian Federal District. In December 2014, the company has been certified by national standard GOST R ISO 50001-2012.

Energy Management System is a set of interrelated or interacting elements used for the development and implementation of energy policy and energy purposes, as well as processes and procedures to achieve these goals [2]. The main activity in the field of energy management is to optimize energy costs by continuous improvement of the efficiency of production and technology and related processes of development, support and management processes.

Several factors have contributed to the implementation of the energy management system in accordance with ISO 50001 in JSC «IDGC of Siberia»: state regulation in the energy sector, aimed to reducing the actual losses and energy consumption; strategic development of «Rossetti» which requires to introduce SEnM at all subsidiaries [3].

The main problem in the implementation of energy management system in JSC «IDGC of Siberia» is the necessity of refining and adaptation of the old version of the quality manual to the requirements of ISO 50001 and corporate integrated management system. According to the analysis of documentation, it was found that Section 7.11 «Energysupplysaving» had been undergone the greatest changes. According to the new requirements an activity for ensuring and improving of the energy management system has been in detail and consistently reflected in the schematic description with SO 3,025 BP/0 «Energysupplysaving. Regulations» with regard of the functional distribution of responsibilities.

Also it should be noted the development of a new version of the quality manual is not the only stage in the creation of energy management system at the company. Besides, it was necessary to

develop a series of new mandatory documents that contain the requirements of energy saving and the basic provisions of ISO 50001:

- SO 3.145/0 «Energy conservation and energy efficiency. Regulations»;
- SO 2.149 / 0 «Procedure for energy analysis. Methodology»;
- SO 4.006 / 0 «Management representative for energy management. User Role»;
- SO 5.294 / 0 «Group Energy Management. Position».

Pursuant to the order of JSC «IDGC of Siberia» from 14.07.2014 № 545 «About unscheduled internal audit» in the implementation of an energy management system branch of JSC «IDGC of Siberia» – «Khakasenergo» was audited for compliance with GOST R ISO 50001-201 2012 «energy Management Systems. Requirements with guidance for use».

During the audit, it has been found that the requirements of internal regulatory documents in the field of transport and electricity metering in general correspond to the requirements of ISO 50001, but it should be noted that the introduction of personnel with the requirements of GOST R ISO 50001-2012 were not made.

Thus, according to the audit incomplete conformity was revealed in activity of the branch of JSC «IDGC of Siberia» – «Khakasenergo» requirements of GOST ISO 50001-2012.

In addition to these problems we can distinguish the following risks affecting the achievement on the goals and objectives of the state program of energy efficiency.

1. Macroeconomic risks. Long global economic recession and the decline in world prices for Russian exports may hinder the development of the fuel and energy complex.
2. Technogenic and environmental risks. Taking into account that the consumption of fixed capital in the energy reaches an average of 60–70 %, the probability of technogenic accidents is quite high, as the probability of causing significant damage to the environment.
3. Insufficient level of budget financing. At present financing of the energy sector from the federal budget is reduced.

In conclusion, it should be noted that at present standard ISO 50001 is gaining popularity and becoming more common. Many enterprises make deliberate decisions about the implementation of the EMS to reduce the use of energy resources, energy loss, as well as to improve performance while minimizing harm to the environment [4]. Thus, to solve the problem of energy efficiency and resource conservation it is necessary to create a meaningful system of energy management at the enterprise according to the requirements of ISO 50001: 2011 and focus on the experience of foreign companies that have provided an example of the introduction of this standard.

References

1. Federal Law № 261 «About energy saving and improvement of the energy efficiency and on Amendments to Certain Legislative Acts of the Russian Federation» from 23.11.2009.
2. ISO 50001: 2011 «Energy Management Systems. Requirements with guidance for use.»
3. Akrapovich R.A. Prospects for the introduction of ISO 50001 in Russia // «Techexpert.» – 2013. – № 10. – P. 7–10.
4. Savin K.N., Syshchikov G.N., Popova V.A. Quality Management of electricity through the ISO 50001 // «Fundamental research». – 2012. – № 9. – P. 410.

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