

© **A.M. Kliun**  
PJSC «Ukrtransgaz»  
**O.A. Dovhosheia**  
UMG «Kharkivtransgaz»  
**N.P. Khomyk**  
trainee of «KPI» NTU

## Experience of construction and implementation of modern management systems (integrated management system) in PJSC «UKRTRANSGAZ»\*

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*Розглянуто основні підходи до побудови, впровадження та сертифікації в ПАТ «УКРТРАНСГАЗ» систем управління якістю, безпекою праці, екологічного та енергетичного менеджменту відповідно до вимог міжнародних стандартів ISO 9001, ISO 14001, ISO 50001 та OHSAS 18001.*

**Ключові слова:** інтегрована система, управління якістю, екологічне керування, безпека праці, енергетичний менеджмент, сертифікація, аудит.

*Рассмотрены основные подходы к построению, внедрению и сертификации в ЧАО «Укртрансгаз» систем управления качеством, безопасностью труда, экологического и энергетического менеджмента согласно с требованиями международных стандартов ISO 9001, ISO 14001, ISO 50001 и OHSAS 18001.*

**Ключевые слова:** интегрированная система, управления качеством, экологическое управление, безопасность труда, энергетический менеджмент, сертификация, аудит.

*The basic approaches to construction, implementation and certification at PJSC «Ukrtransgaz» quality management systems, occupational safety, environmental and energy management in accordance with international standards ISO 9001, ISO 14001, ISO 50001 and OHSAS 18001 are considered.*

**Key words:** integrated system, quality management, environmental management, safety, energy management, certification, audit.

The integration of Ukraine into the European community, compliance with oil and gas directives of the European Union, ordinances of the Cabinet of Ministers of Ukraine and the goal of improvement the effectiveness of the gas transportation system operation require that PJSC «Ukrtransgaz» implemented the modern principles and practices of managing the operations in accordance with international standards ISO 9001, ISO 14001, ISO 50001, OHSAS 18001 etc.

The works related to development, implementation and certification of the management systems in accordance with international standards have been performed in JSE «Ukrtransgaz» (since 2012 – PJSC «Ukrtransgaz») since 2003. During this period:

2003 – the quality management system was certified in accordance with DSTU ISO 9001:2001;

2006 – the environmental management system was certified in accordance with DSTU ISO 14001:2006;

2010 – the quality management system was certified in accordance with DSTU ISO 9001:2009.

In 2011 PJSC «Ukrtransgaz» participated in ROGSS, an international investment project, which aimed at improving the reliability of corporate management in oil and gas industry in Ukraine using the international experience and implementing the world's best management practices.

The required documentation was developed and implemented in accordance with ISO 9001, ISO 14001, OHSAS 18001 for various management levels of PJSC «Ukrtransgaz», the internal audits and pre-certification audit were conducted, and corrective actions were implemented within the said project.

The result was the successful certification of the quality management system (ISO 9001:2008), environmental management sys-

tem (ISO 14001:2004) and health and safety management systems (OHSAS 18001:2007). TÜV Rheinland Cert (Germany) issued the certificates valid for 3 years, recognized in more than 80 countries.

The main advantages that can be enjoyed by PJSC «Ukrtransgaz» from implementation and certification of international management systems are as follows:

- the certificates fully meet all requirements of the global business community and provide competitiveness at foreign markets;
- the positive public opinion about the reliability, stability and high level of the Company development;
- respectability, positive image and high business status of the Company;
- the ability to attract the required investment and concessional loans;
- obtaining of insurance contracts at the lowest interest rates;
- ensuring the compliance with various legal and other requirements;
- simplification of obtaining permits, licenses, permits and other documents;
- ensuring the compliance with European directives on the operation of oil and gas companies;
- increase of staff competence and achieving a higher degree of its involvement in business improvement;
- improving the relationships with customers, suppliers, government and public monitoring bodies.

In accordance with the requirements of ISO / IEC 17021:2011 «Conformity assessment. Requirements for bodies conducting audit and certification of management systems», the TÜV Rheinland CERT shall, during the whole term of certificate validity, confirm that the certified management systems comply with standards' requirements through compliance audits at least once a year.

\* **Про затвердження** плану заходів щодо розроблення, впровадження і функціонування систем управління якістю, екологічного управління та інших систем управління: Розпорядження Кабінету Міністрів України від 19.06.2013 р., № 492-р. – Режим доступу: <http://zakon1.rada.gov.ua/laws/show/492-2013>.

In 2012–2013 PJSC «Ukrtransgaz» passed 2 observational audits of certified management systems, conducted by authorized auditors of TÜV Rheinland with involvement of PJSC «Ukrtransgaz» specialists.

During compliance audits the activity of structural divisions of PJSC «Ukrtransgaz» on 3 management levels was checked selectively, from the availability of information on management systems (policies, objectives, persons in charge), regulations and job descriptions, planning, reporting and technical documentation, to the way in which the processes to ensure the reliable and safe operation of the natural gas transportation and storage are planned.

The auditors received the documentary evidence of the quality of services in natural gas transportation and storage, security and compliance with processes, environmental security and labor safety in the course of performance of the planned activities.

Based on the results of compliance audits, TÜV Rheinland auditors noted as follows:

- considerable attention paid to the issues of performance and maintenance of certified management systems by PJSC «Ukrtransgaz» management, branches (UMG) and production departments forming a part of them (LVUMH (VUPZH));
- high level of planning, implementation, monitoring and reporting on activities at all levels;
- presence of visual information about the certified management systems;
- skilled organization of dealing with service customers and monitoring of natural gas parameters in the gas transportation system of Ukraine;
- identifying the environmental aspects, hazards and risks of activities and implementation of measures to manage the same;
- use of advanced automation equipment and systems for management, implementation and provision of industrial activity;

- high level of training and qualification of personnel, its openness and awareness about the functioning of management systems;
- availability and use of the up-to-date actual legal framework and organization of regulation stocks.

The compliance audits in 2012–2013 found no inconsistency in the certified management systems of PJSC «Ukrtransgaz» and the recommendations were made (27 recommendations in 2012, –12 recommendations in 2013) to improve the integrated management system of PJSC «Ukrtransgaz» and its further development. The experts responsible for the management system at all levels (staff, UMG LPUMG (VUPZG)) of PJSC «Ukrtransgaz» developed and implemented the required measures to improve the performance based on each received recommendation.

In addition, in 2012–2013 the auditors of TÜV Rheinland noted a significant development and improvement of certified management system of PJSC «Ukrtransgaz» compared to the certification audit in 2011.

Based on the results of compliance audits it was confirmed that the quality management system, environmental management system and labor safety and occupational health management system (Fig. a, b, c) of PJSC «Ukrtransgaz» provide services of transportation and storage of natural gas conforming to ISO 9001:2008, ISO 14001:2004 and OHSAS 18001:2007. Thus, the validity of certificates issued by TÜV Rheinland Cert to PJSC «Ukrtransgaz» in 2012 was extended.

According to the decision of the senior management, during 2013 the specialists of PJSC «Ukrtransgaz» conducted extensive works on the development, implementation and preparation of the energy management system for certification in accordance with ISO 50001:2011.

During this period:

- the management representatives and the responsible employees were appointed and the energy management group was created;
- the required documentation of the energy management system was developed in accordance with ISO 50001:2011;
- a training workshop was held;
- internal audits and pre-certification audit was conducted.

Table

Common elements of ISO 9001, ISO 14001, ISO 50001 and OHSAS 18001

Common elements of management systems standards	Item numbers			
	ISO 9001	ISO 14000	ISO 50001	OHSAS 18001
<b>1. Policy and objectives</b>	5.3, 5.4.1	4.2, 4.3.3	4.3, 4.4.6	4.2, 4.3.3
<b>2. Planning, including:</b>				
- the distribution of powers and responsibilities	5.5.1	4.4.1	4.2.1	4.4.1
- management representative	5.5.2	4.4.1	4.2.2	4.4.1
- internal information	5.5.3	4.4.3	4.5.3	4.4.3
- requirements definition	7.2.1	4.3.1, 4.3.2	4.4.1, 4.4.2	4.3.2
<b>3. Implementation and operation, including:</b>				
- manage the main activity	7.5	4.4.6	4.5.5	4.4.6
- resource Management	6.1.- 6.4	4.4.1, 4.4.2	4.5.1, 4.5.2	4.4.1, 4.4.2
- document management	4.2.3	4.4.5	4.5.4	4.4.5
- records Management	4.2.4	4.5.4	4.6.5	4.5.4
<b>4. Conformity assessment, including:</b>				
- monitoring and measurement	8.2	4.5.1	4.6.1	4.5.1
- control of nonconforming product and actions in emergency situations	8.3	4.5.3	4.6.4	4.4.7, 4.5.3
- internal audits	8.2.2	4.5.5	4.6.3	4.5.5
<b>5. Improved, including:</b>				
- management review	8.4, 5.6	4.6	4.7	4.6
- corrective action	8.5.2	4.5.2	4.5.1	4.5.3.2
- preventive action	8.5.3	4.5.2	4.5.2	4.5.3.2
- continual improvement	8.5.1	4.3.3	4.4.3	4.3.3

In December 2013, a group of auditors of the international certification body for energy management systems, TÜV SÜD (Germany), conducted a certification audit of the energy management system of PJSC «Ukrtransgaz».

No inconsistency was found during the certification audit of the energy management system of PJSC «Ukrtransgaz» with ISO 50001:2011.

A group of auditors of TÜV SÜD provided 11 recommendations aimed at further improving the energy management system of PJSC «Ukrtransgaz».

Based on the results of certification audit the audit team concluded that they may recommend that TÜV SÜD (Germany) issued a certificate confirming the fact that the energy management system of PJSC «Ukrtransgaz» during transportation and storage of natural gas complies with ISO 50001:2011.

The main advantages of implementation and certification of the energy management system of PJSC «Ukrtransgaz»:

- ensuring a more efficient use of energy resources;
- involvement of all employees in energy saving;



Fig. Certificate ZN 01 100 1158 14 (a), Certificate ZN 01 104 1158 14 (b) Certificate ZN 01 113 1158 14 (c)

- improving the system of operation, maintenance and repairs and increasing their efficiency;
- encouraging the energy efficiency at all stages of work;
- integration of energy saving issued in the overall management system, along with the other standardized management systems;
- improving the financial performance through the direct saving of all types of energy resources;
- cost reduction, identification and elimination of non-production costs;
- integral assessment and reasonable determination of priorities through implementation of new energy-efficient technologies;
- investment attractiveness for energy saving projects;
- image attractiveness of the Company implementing the policy of the production energy efficiency to our partners, customers, and society;
- company reputation as successful in its energy efficiency issues.

Considering the fact that that modern global tendency in achieving the sustainable development by organizations is the transition from individual standardized management systems to the so-called integrated systems, the responsible specialists of PJSC «Ukrtransgaz» at all levels of management carry out considerable work on integrating the management systems into a single management system.

The integrated management system is a part of the overall management system of the enterprise which complies with requirements of two or more standards (e.g. quality management system (ISO 9001), environmental management system (ISO 14001), labor safety and occupational health management systems (OHSAS 18001), etc.) and operated as a single system, aiming at meeting the requirements of all stakeholders (customers, consumers, staff, suppliers, investors, shareholders, government, society etc.).

The comparison of international standards with the management system of PJSC «Ukrtransgaz» indicates their proximity, which provides opportunities for integration (see Table).

The integrated management system of PJSC «Ukrtransgaz» is based on an approach focused on the processes and the so-called dynamic Deming-Shewhart cycle "Plan-Do-Check-Act" (P-D-C-A).

Upon integration of management system in PJSC «Ukrtransgaz» the general requirements in the following directions are implemented:

- holding of joint internal audits, which significantly reduces the required human, time and material resources for their implementation;
- development of the general harmonized methods (procedures) for all management systems minimizing the amount of documentation;
- single management review;
- scheduling and implementation of corrective and preventive action (based on the audit results) aimed at improving the management of several management systems.

### Summary

The presence of internationally recognized certificates of compliance of the management systems of PJSC «Ukrtransgaz» with international standards should provide the customers of services related to transportation and storage of natural gas (to the companies in Ukraine, Germany, France, Slovakia, Poland, Hungary, Italy, Turkey, Romania etc.) with independent justified confirmation and assurance that PJSC «Ukrtransgaz» is a reliable partner which guarantees the fulfillment of contractual obligations and ensures the efficiency, safety and uninterrupted operation of the gas transportation system of Ukraine.

### The authors



#### **Kliun Andrii Mykhailovych**

*Deputy director of the scientific and technical department, head of standardization and quality management system unit PJSC «Ukrtransgaz». The range of his interests includes the performance of works related to development, implementation and application of regulations in Ukrtransgaz system; expert examination and standard control of regulations; development of internal standards and regulations in accordance with international systems (ISO 9001, ISO 14001, OHSAS 18001) etc.*

#### **Dovgosheia Oleg Anatoliiovych**

*Head of integrated management systems sector of UMG «Kharkivtraspaz». The range of his interests includes the development and implementation of modern management systems in accordance with international standards.*



#### **Khomyk Natalia Pavlivna**

*Student, bachelor in corporate management and administration of the management and marketing faculty of the «Kyiv Polytechnic Institute» National Technical University of Ukraine. The major activity is the management of an integrated system in the industrial company.*

