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Management Systems and Safety Culture in the Nuclear Energy Sector (ISO 9001 & GS-R-3)

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Synopsis

Nowadays, the enterprises of the Rosatom State Nuclear Energy Corporation that provides products and services to the foreign customers should rely on the requirements to the management systems established in the International Atomic Energy Agency (IAEA) Standard GS-R-3 "The management system for facilities and activities". This results from the fact that in order to enter foreign markets Russian suppliers have to meet foreign requirements related to quality assurance, protection of the environment, nuclear and radiation safety, etc. For instance, the Finnish customer "Fennovoima" requires full compliance of the management systems of the Russian companies involved in the construction of the Hanhikivi-1 NPP with the GS-R-3 Standard.

The ISO 9001 quality management systems were widely implemented in the nuclear industry enterprises in Russia. The assessment of compliance of the quality management systems with the established requirements is carried out by the certification bodies. The same relates to the environmental management systems that are implemented at the majority of nuclear industry facilities in Russia. But due to their uniqueness and associated significant risks, the nuclear industry enterprises have to meet current safety requirements and principles established in the IAEA Safety Standards, such as safety culture, risk management.

In GS-R-3, the IAEA uses the approach according to which safety culture is integrated in the management system. I.e. the safety culture assessment should be carried out as a part of the management system assessment. A nuclear and radiation safety authority (regulatory body) is entrusted by IAEA with the assessment of quality management systems compliance with the GS-R-3 Standard [1].

However, according to the ISO/IEC Standard [2], the assessment of compliance of the quality management systems with the established requirements should be carried out by the so called certification body whose functions differ from the functions of the regulatory body that are provided in GSR Part 1 [3]. Regulatory bodies in many countries have neither resources, nor specialists for the compliance assessment of the supervised organizations.

New Standard ISO/AWI 19443 "Quality Management Systems. Specific requirements for the application of ISO 9001 and IAEA GS-R-3 requirements by organizations in the supply chain of the nuclear energy sector" is currently being developed. It is aimed at harmonization of the requirements of ISO 9001 and GS-R-3. In comparison with ISO 9001, this Standard has some significant advantages, such as requirements on the safety culture and risk management, and in contrast with the GS-R-3 Standard, it has provisions for the management system certification of organizations in the supply chain of the nuclear energy sector. The main disadvantage is that the Standard does not cover management systems of the nuclear facilities, e.g. NPPs.

We consider it reasonable to entrust the certification bodies that have the relevant resources and experience with the assessment of nuclear industry enterprises management systems. For instance, Bureau Veritas employs 66,500 staff in 1,400 representative offices in 140 countries; Intertek (Moody International) employs 38,000 staff in 1,000 locations in 100 countries.

The development of ISO Standard for the nuclear industry enterprises management systems is required. Im-

plementation of this standard will make it possible to achieve efficiency of the nuclear industry enterprises management systems and, as a result, high safety culture.

References

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2. ISO/IEC 17021-1:2015. Conformity assessment – Requirements for bodies providing audit and certification of management systems – Part 1: Requirements.

3. Governmental, legal and regulatory framework for safety. General safety requirements Part 1 No. GSR Part 1. International Atomic Energy Agency. Vienna, 2010.

Country or International Agency

Russian Federation

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