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TSO Role in Supporting the Regulatory Authority in View of Safety Culture

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Synopsis

Human and organizational factors are always of paramount importance at nuclear and radiation safety as well as in the safety regulation provision. Major NPP accidents occurred merely reaffirm this fact. The role of an authority that regulates nuclear safety increases each time in the aftermath of accidents perceived as a shock together with the importance of scientific and technical support.

SEC NRS was established in 1987, the next year after the Chernobyl NPP accident aiming to strengthen supervision over works carried out at the nuclear industry enterprises. Currently SEC NRS provides comprehensive scientific and technical support to Rostekhnadzor including safety review and regulatory legal documents development to regulate safety along with safety culture.

Fukushima-Daiichi NPP accident of 2011 was undoubtedly a watershed moment to revise the concept of safety culture of regulatory body. In 2013 IAEA has published TECDOC-1707 "Regulatory Oversight of Safety Culture in Nuclear Installations". This document observed outcomes of existing practices in respect to the regulatory oversight of safety culture in nuclear facilities. It was prepared under the scope of projects conducted by the IAEA and NEA OECD over the last few years.

In line with the provisions of TECDOC-1707, the following criteria are proposed to be applied in selection of practicable regulatory approaches to safety culture oversight:

- accuracy of the resulting safety culture picture in the regulated organizations;
- the regulator's workload;
- involvement of regulator's senior management into safety culture oversight;
- involvement of human and organizational factors and safety culture skills.

In the Russian Federation the issues related to safety culture are covered by nuclear facilities inspection programs; general documents on safety provision (such as NP-001, NP-016-05, etc.) include requirements to building and maintaining of safety culture.

In the course of the fundamental Russian regulatory document updating, performed in 2012-2015, which regulates the NPP safety ("General Safety Provisions for Nuclear Power Plants"), the issue of safety culture received more attention compared to the current revision. The understanding of 'safety culture' as a concept is brought in compliance with the international understanding specified, in particular, in INSAG-4. This report stated that safety culture includes characteristics of not only individual persons (performers and senior management) but also characteristics of organizations.

New revision of "General Safety Provisions..." establishes that safety culture is being created and supported through the following:

- NPP safety is to gain priority over economic and operational purposes;
- staff appointment, professional training and competence level maintaining in respect to the senior management and employees involved into any sphere of activity affecting safety;
- strict compliance with discipline within clear power-sharing and personal responsibility of performers and

senior management;

- development and strict compliance with the requirements of quality assurance programs, operating procedures and technical specifications, regular updating with taking into account of experience accumulated thereof ;
- decision- makers at all levels are to establish the climate of confidence and such teamwork approaches along with the social and living environment of NPP personnel, which are fostering the attitudes conducive to safety;
- employee's understanding of significance of his duties for NPP safety provision as well as the consequences resulted from lack of diligence or non-qualified execution in respect to the requirements of regulatory documents, quality assurance programs, operating and job procedures and technical specifications;
- self-checking performed by employees in relation to their work affecting the safety;
- understanding from every decision-maker and employee in respect to inadmissibility of concealing mistakes occurred in their activity and the necessity to reveal and eliminate their underlying causes; the relevancy of ongoing self-improvement, analysis and introduction of best practices including the foreign ones;
- establishment of rewards and sanctions system on the completion of work activities that motivates the transparent manner of actions and discourage exclusion of mistakes.

Further to "General Safety Provisions..." and in correspondence with the recommendations of the IRRS Mission hosted in 2013, drafting of safety guideline dedicated to aspects of safety culture maintaining and assessment at nuclear plants is planned for the next year. SEC NRS as scientific and technical support organization to regulatory authority is tasked to carry out this work.

SEC NRS is also charged with the responsibility to develop regulatory and legal documents of other types of nuclear facilities.

In particular, it is planned to put into force "Safety Culture Assessment Methodology in Nuclear Fuel Cycle Facilities" as safety guideline duly approved by regulatory authority.

Experience accumulated by regulators from different countries clearly demonstrates that the safety culture oversight is a challenging task that requires great efforts and certain knowledge, however such task could be solved. Especially, if an understanding and culture of collaboration between operating organizations is available.

Country or International Agency

Russian Federation

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YES

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