

Regulatory Oversight of Safety Culture in Finland: A Systemic Approach to Safety

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In Finland the Radiation and Nuclear Safety Authority STUK specifies detailed regulatory requirements for good safety culture. Both the requirements and the practical safety culture oversight activities reflect a systemic approach to safety: the interconnections between the technical, human and organizational factors receive special attention. The conference paper aims to show how the oversight of safety culture can be integrated into everyday oversight activities. The paper also emphasises that the scope of the safety culture oversight is not specific safety culture activities of the licencees, but rather the overall functioning of the licence holder or the new build project organization from safety point of view.

The regulatory approach towards human and organizational factors and safety culture has evolved throughout the years of nuclear energy production in Finland. Especially the recent new build projects have highlighted the need to systematically pay attention to the non-technical aspects of safety as it has become obvious how the HOF issues can affect the design processes and quality of construction work. Current regulatory guides include a set of safety culture related requirements. The requirements are binding to the licence holders and they set both generic and specific demands on the licensee to understand, monitor and to develop safety culture of their own organization but also that of their supplier network. The requirements set for the licence holders has facilitated the need to develop the regulator's safety culture oversight practices towards a proactive and systemic approach.

The overall picture of the licensee's or plant project's safety culture is formed by assessing inputs from several different sources. Organizational capabilities and practices are evaluated, e.g., as a part of technical inspections, document reviews and daily activities carried out by the resident inspectors. A database is utilised to coordinate observations related to organizational factors. In addition to that, periodic inspections by inspectors with expertise in safety management, safety culture and leadership are carried out. STUK also utilises external experts' independent safety culture assessments and can launch event investigations to gain more in-depth understanding of the safety culture when needed. In order to select future focus points for oversight the knowledge and observations from experts of all disciplines and graded approach principles are utilised in a systematic manner.

The need for broadening the conception of systemic approach to safety has become evident recently. One of the lessons learned from the Fukushima Daiichi accident was that the regulator is part of the system which creates safety, or lack thereof. Therefore, the regulator needs to be able to critically reflect on its own safety culture and the regulatory practices. As the regulatory framework evolves gradually and is influenced by the national culture and the history of the nuclear domain in each country, it may be challenging to question its taken-for-granted premises. The national culture differences surface in a concrete manner in the multinational new build projects. STUK has supported research to understand the specific national features that the Finnish culture brings to the regulatory oversight.