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The Regulatory Approach for the Assessment of Safety Culture in Germany –A Tool for Practical Use for Inspections

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The paper presents a tool for regulatory oversight of NPP safety culture. This tool is focussed on “leadership for safety”, i.e. on Actions and measures to be taken by licensee personnel in Charge of leadership tasks. Decisions regarding future use rest with German regulatory authorities.

Synopsis

Need for methods to assess licensees' safety culture has been recognized since the Chernobyl accident. Several conferences organized by IAEA and OECD/NEA stated the need for regulatory oversight of safety culture and for suitable methods. In 2013, IAEA published a Technical Document (TECDOC 1707) on the process of safety culture oversight by regulatory authorities which leaves much room for regulators' ways of performing safety culture oversight. In response to these developments, the Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) as the federal regulatory body commissioned GRS in 2011 to develop a practical guidance for assessing licensees' safety culture in the process of regulatory oversight. This research and development project was completed just recently. The publicly available documentation comprises a shorter guidance document with the indispensable information for an appropriate, practical application and a report with more detailed information about the scientific basis of this guidance. To achieve best possible adaptation to regulators' needs, GRS asked members of the regulatory authority of Baden-Wuerttemberg (one of the federal states of Germany) for comments on a draft of the guidance which was then finalized by duly considering this highly valuable and favorable feedback. Decisions regarding future use rest with German regulatory authorities.

Guidance is focused on measures and actions by which licensee personnel in charge of leadership and management tasks can foster safety culture (in short: “leadership for safety culture”). Focus on leadership is due to its important function of organizing and supporting subordinates' activities in such a way that best possible safety performance will be achieved. Guidance is based on a synthesis of ca. 70 years (1940s to 2013) of empirical research findings about the effects of leadership on personnel's engagement and resulting observable performance related to safety, quality, and similar goals. Synthesizing of these findings resulted in five domains and a total of seventeen aspects of “leadership for safety culture”

Leaders (from top management down to personnel being temporarily in charge of leadership tasks)

- create best possible conditions of task performance (e.g.: explain safety policy, ensure good human factors design).
- coach, direct, and supervise personnel effectively (e.g. . make clear decisions, are present on the shop-floor).
- build a powerful learning organization (e.g. investigate errors thoroughly, encourage suggestions for improvement).
- duly reward and recognize safety-culturally correct behaviour, sanction safety culturally incorrect behaviour (e.g. show by appropriate feedback that safety matters).
- foster trustworthy relationship to and within team (e.g. try to settle conflicts, keep their word).

Guidance is provided for two oversight approaches. The first one supports the analysis and assessment of “leadership for safety culture” in the context of oversight activities by safety authorities (in particular plant

visits) which provide insights into how safety culture is fostered by licensee personnel in charge of leadership tasks, even if the primary goal of the oversight activities (e.g. technical inspections) is not the collection of information about “leadership for safety culture”(“en passant-approach”). Observation of e.g. a periodic test will offer inspectors both the opportunity to watch personnel’s use of written procedures, response of team leaders to questions by personnel etc. and of asking personnel about how and why they are doing what they are doing in order to perform their task (culture is often characterized as “ways of doing things”). Continuous application of this approach will provide lots of individual pieces of information about “leadership for safety culture”to be analyzed and summed up by the regulatory authority and discussed with licensee management (e.g. during regular meetings). The second approach supports the analysis and assessment of “leadership for safety culture”in the context of an investigation which is focused on this leadership and which is to provide more systematic and detailed information than an “en passant-approach”about “leadership for safety culture” at a particular point in time. Approaches of both types have been in use in different countries, they can be combined, and they can be applied in combination with other methods for the analysis and assessment of safety culture. Guidance comprises a description of the process by which both approaches can be implemented.

In both approaches, guidance is neither to be used as a checklist nor as a questionnaire but as a set of topics for inspectors’ observations, questions, and discussions with the licensee regarding strengths and weaknesses of his safety culture. Licensee remains fully responsible for safety culture and of measures to be taken in response to these discussions.

Project results and implications for the role of the regulator in its approach to safety culture will be discussed in detail especially considering the current situation in Germany four years after the decision to finally phase out of nuclear energy by 2022.

Country or International Agency

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