

International Conference on Human and Organizational Aspects of Assuring Nuclear Safety –Exploring 30 Years of Safety Culture



Contribution ID: 25

Type: Oral

Safety Culture in New Build Projects

Thursday, 25 February 2016 13:00 (30 minutes)

Synopsis

INTRODUCTION

The concept of culture emphasizes the social factors that have an effect on the way hazards are perceived, risks are evaluated, risk management is conducted, the current safety level is interpreted, and what is considered normal and what abnormal. It also contributes to defining the correct ways to behave in situations and correct ways to talk about safety, risks or uncertainty. Culture is something the company has created for itself that then has an effect on the company. This effect is not necessarily perceived by the company itself, since the members of the organisation consider all things that happen according to their cultural taken-for-granted assumptions ("business as usual"). Thus, safety culture can either hinder or advance nuclear safety. This depends on what the shared values and assumptions are, and how they are in line with, and influence, the organizational structures, practices, personnel and technology.

CHALLENGES OF THE PRE-OPERATIONAL PHASE

Safety culture requires constant and systematic development, monitoring and review during the entire life-cycle of a nuclear facility. The pre-operational phase sets many unique requirements for nuclear safety culture. For example, some of the organizations and individuals involved in the project may have no insight on how safety culture relates to nuclear power plants. Companies that work in the conventional industry typically associate safety with occupational safety issues, not with nuclear safety. Further, it may be unclear how the construction phase affects nuclear safety of an operating plant. When workers are asked to perform their work differently than previously (e.g. in conventional construction sites), explanation has to be given. For example, structures, systems and components may have different functions during emergency that exceed or differ from their quality requirements during normal operation. The strict quality requirements and use of certain methods & procedures, documentation requirements etc. may seem unimportant if nuclear safety is not considered. It has to be constantly reminded that many of the decisions and actions made during the design and construction phases can have consequences years, if not decades, later. The promotion of nuclear safety culture must also take into account cultural and language differences often prevalent at the construction site.

KEY ELEMENTS TO CONSIDER

The presentation illustrates how the shared values, beliefs and assumptions about nuclear safety are influenced by four processes: Communication, safety leadership, climate, and interaction patterns. The shared values and the social processes in turn are embedded in and influenced by the organizational structures, organizational practices, tools and technology, as well as the individual employees. Aligning these different elements and developing them in unison in the complex project environment is challenging. The presentation gives some guidance on those challenges and proposes solutions to improve safety culture in pre-operational phases of nuclear power plants.

Country or International Agency

Finland

Type "YES" to confirm submission of required Forms A and B via the official channels

yes

Primary author: REIMAN, Teemu (Finland)

Presenter: REIMAN, Teemu (Finland)

Session Classification: TO3: Topical Session: Building Culture for Safety