

International Conference on the Safety of Radioactive Waste Management, Decommissioning, Environmental Protection and Remediation: Ensuring Safety and Enabling Sustainability



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Development and Challengey to Improve Nuclear Knowledge Management and Safety Culture

Today, there is universal acceptance of the significant impact that management and organisational factors have over the safety significance of complex industrial installations such as nuclear power plants. Many events with significant economic and public impact had causes that have been traced to management deficiencies. The report on the TMI-2 accident underlined the importance of problems associated with the management, organization, an institutional structure. The Chernobyl accident is an example of multiple institutional, organizational, and management flaws, identified as determining contributors to the accident . In developing safety management methodologies they should be based on scientific analyses to identify and understand the individual causes involved and their effects. We should focus on the importance of this approach to safety management using the potential of human behaviour and management sciences. While technical performance at nuclear power plants has benefitted from the significant improvement in the knowledge of materials, equipment and systems performance, etc. there has not been a similar general improvement of management practices. For many years it has been considered that managing a nuclear power plant was mostly a matter of high technical competence and basic managerial skills. The field of nuclear technology has been dominated by hard sciences Some degree of frustration also became apparent after earlier research efforts.

In high risk industrial environments such as nuclear power plants, chemical factories, railways or the aircraft industry, people in charge of work organisation tend to be engineer-technicians of a very homogeneous scientific background. For a number of decades, engineers have structured the organisation of highrisk industries. This has been achieved in a highly technical-bureaucratic fashion through successive reforms and as a result of fairly unilateral thinking. The resulting organisational innovations are hardly ever submitted to external criticism, let alone reliability assessments (of the organisation itself). No diagnosis is ever attempted. Organisations are generally modified, adjusted, and amended, without any prior justification or debate. Most of these changes are implemented top-down and yet the way they reach the bottom suggests that there is much variety in the way reforms are received, understood, and really implemented..

The objective of this study is the development of new methods to increase and improve knowledge management for the safety of nuclear power plant operation focusing on commercial nuclear power plants that are intended for electrical power generation from a safety point of view, knowledge management , human performance and organisational factors perspective.

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