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Insight and Lessons Learned on Safety Culture from Analysis of Inspection Findings and Events

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Synopsis

Safety culture has been a main subject of scrutiny in major accidents of modern complex technologies. The Fukushima accident also plausibly has its root cause deep into weak safety culture. After the Fukushima accident in Japan 2011, many critics have searched for cultural factors that caused the unacceptable negligence pervaded in Japan's nuclear society. Renewed emphasis has also been placed on rebuilding strong safety culture by operators, regulators, and relevant institutions worldwide. Significant progress has been made in approach to safety culture and this led to a new perspective different from the existing normative assessment method both in operators and regulatory side. Regulatory expectations and oversight of them are based on such a new holistic concept for human, organizational and cultural elements to maintain and strengthen the integrity of defense in depth and consequently nuclear safety.

In Korea, a change in regulatory position about safety culture oversight was made before and after an event of station black out cover-up in Kori unit 1 occurred in early 2012. The oversight of licensee's safety culture becomes an important issue that attracts great public and political concerns recently in Korea. Beginning from the intended violation of rules and regulations, a series of corruptions, documents forgery and disclosure of wrong-doings made the Korean public think that the whole mindset of nuclear workers has been inadequate. Thus, they are demanding that safety culture should be improved and that regulatory body shall play more roles and responsibilities for improving safety culture and for conducting oversights of it. After the event, Korea regulator concluded that safety culture aspects were not properly managed by licensee and therefore minimum requirements should be imposed on. Based on the implications and lessons from the events, Korean regulatory authority announced the initiative of regulatory oversight and launched pilot inspection program and research project to develop oversight system and methodology.

This paper introduces, as an effort of regulatory side, recent changes in the role of regulators in safety culture, safety culture components with regulatory expectations on them to achieve desired status of licensee's safety culture. Also, human error-related events and inspection findings with these safety culture components were analyzed, respectively. Comparison of the analyzed results between human error-related events and inspection findings was performed. And lessons learned and insight from perspectives of organizational factors and safety culture were derived.

From the results for analyzing human error-related events and inspection findings, safety culture components were analyzed that should be improved to enhance safety culture of licensee in Korea. The results will be used to identify suitability and to verify the validity of the concept of overall safety culture improvement mechanism. Also, these will encourage the self-assessment of licensee's safety culture management system corresponding to regulatory safety culture oversight.

The results and insights obtain from this research will provide inputs and lay foundations in regulatory infrastructure and system for plant oversight, which are based on operating experiences and lessons learned on the aspects of organizational factors and safety culture.

Country or International Agency

Korea, Republic of

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YES

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