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Knowledge Management Learned from Decommissioning and Environmental Remediation after an Unexpected Radiological Contamination Occurred at Fukushima Dai-ichi NPP Accident

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The Fukushima Dai-ichi Nuclear Power Plant (NPP) Accident resulted in severe damage of cores in units 1 to 3, and subsequently entailed not only contamination of facility but also widely-spread radiological contamination in environment due to the release of radioactive nuclides.

Decommissioning activities will require at least 30-40 years with various stages of operation, such as contaminated water treatment, decontamination of reactor buildings, retrieval of spent fuel (SF) from SF pools, inspection of Primary Containment Vessel (PCV) and Reactor Pressure Vessel (RPV), and retrieval and further management of damaged fuel and melted debris. Especially, a water injection for core cooling is a pressing issue to stabilize the melted debris, which leads to produce a large amount of contaminated water. Environmental remediation is a crucial issue to return a normal life for local residents. On-site cleaning and off-site remediation produce various kinds and enormous amount of contaminated material with low to high radioactivity. Knowledge management of on-site and off-site issues over generation are critical to achieve the cleaning and remediation requiring a couple of decades. In addition, knowledge obtained through a long term-operation should be shared globally.

Country or International Organization

Japan

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