

## Reflections on 9-years of JAEA R&D activities in Fukushima

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The Japan Atomic Energy Agency, JAEA, has been missioned to deploy technical support for post-accident environmental remediation and decommissioning of the disabled Fukushima Daiichi nuclear power station.

Immediately after the 2011 nuclear accident, JAEA launched the environmental decontamination projects to examine the applicability of various environmental decontamination technologies, and radiation measurement for a wide range of areas including both contaminated areas within the Fukushima prefecture (car-borne radiation surveys) and also the entire land of Japan (air-borne monitoring technologies).

In addition to these “off-site” activities, JAEA stepped up research and development in 2015 to support “on-site” decommissioning of the crippled nuclear reactors and contaminated power station site. JAEA’s R&D charge covers a wide range of differing technologies and disciplines needed for decommissioning. Techniques range from remote control technology development for dismantling jobs and workers’ safety under inaccessibly high radiation environments, analysis and characterization of radioactive waste and fuel debris generated by the accident, to fundamental research for accident scenario analysis and innovative radiation detecting technology development. In addition, JAEA has built infrastructure devoted to supporting these tasks.

The decommissioning of the post-accident nuclear power station site and environmental remediation will be a long lasting endeavor, with the decommissioning projected to take a number of decades to complete, and therefore, development of the necessary human resources is essential. JAEA’s R&D sites could serve as a platform for domestic and international human resource development through training and education within the R&D facilities, which importantly, would contribute to knowledge and technology transfer to future nuclear generations. In addition, given that information in the aftermath of the 1F accident was poorly communicated, the author recognizes the essential need to build expertise in public communication via education and training of scientific and technical experts.

This presentation outlines lessons learned based on JAEA’s scientific and technological responses post-accident, and some others the author gained through discussions with international communities. In this regard, it should be noted that no previous nuclear accident was initiated by multiple natural disasters that resulted in the loss of communications and essential infrastructure on a region wide scale.

**Keywords:** *Environmental Remediation, Decommissioning, Human Resource Development*