

Report

# Comparative Study on Annual $^{137}\text{Cs}$ Discharge Rates after the Fukushima Dai-ichi Nuclear Power Plant Accident from Two Distinct Watershed Simulation Models

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## Summary

Annual discharge rates of radioactive cesium through selected rivers after the Fukushima Daiichi Nuclear Power Plant accident were simulated using two distinct watershed models. One is the Soil and Cesium Transport, SACT, model that was developed by Japan Atomic Energy Agency. The other is the Grid-Catchment Integrated Modeling System, G-CIEMS, which was developed by National Institute of Environmental Studies. We compared the results from both models for the Abukuma, Ukedo, and Niida rivers in this study. While the components and assumptions adopted by these models differ, the estimates from both methods were within the same order of magnitude. We also compared the simulation estimates for  $^{137}\text{Cs}$  discharge to the ocean against estimates available from field monitoring and the results matched acceptably.

**Key Words:** The Fukushima Dai-ichi Nuclear Power Plant accident, Radioactive cesium, Discharge rate, River basin, Environment

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