

Research Note

Improvement of Particle Size Separation Method for Cesium Contaminated Clayey Soil and its Challenges

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● **Summary** ● Radioactive-caesium contaminated soil removed by the decontamination process after the explosion of Fukushima nuclear power plant 1 is estimated to be 13 million m³. Wet-type particle size separation is considered as most promising method to reduce the volume to be finally disposed and reuse them as soil material. However, more than 80% of the soils to be decontaminated is clayey soil derived from mainly farmland. The problem is that about half of it is separated into the undersieve that is not recycled. This causes the low recycle rate in applying standard particle size separation. On the other hand, lowering the classification point down to 20 μm may increase the amount of recyclable soil, but at the same time, there lie challenges such as organic aggregates peculiar to farmland-derived soil, ineffective consumption of chemicals, dehydration of fine soil particles, and issues such as the adverse effects of the soil moisture modifiers introduced for the purpose of removing foreign substances before being transported to the intermediate storage facility.

Key Words: cesium-contaminated soil, particle size separation, humus, aggregation, mud crushing

Received July 22, 2020; Accepted December 8, 2020; Recommended by chairpersons in the 8th annual meeting of SRRCE

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