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Research Note

Examination of Behavior of Radioactive Cesium in a Woody Biomass Combustion Power Generation Plant

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● **Summary** ● This study investigated the status of radioactive Cesium (r-Cs) behavior to fly ash and flue gas at a power generation plant burning woody biomass with a r-Cs concentration of 100 Bq/kg or less to obtain results that can serve as useful reference information for combustion of woody biomass in Fukushima Prefecture. We conducted measurements of r-Cs concentration in woody biomass and fly ash, r-Cs leaching tests from fly ash, elemental composition analysis of fly ash, and r-Cs removal effect tests in flue gas by baghouse. The results indicated that the possibility of generating fly ash with a r-Cs concentration exceeding 8,000 Bq/kg was low so long as woody biomass with the same level of r-Cs as that collected at this facility (<14 to <37 Bq/kg) is placed into the combustion furnace. Leaching tests confirmed that r-Cs tended to be leached when fly ash came into contact with water, so it is advisable to implement waterproofing when storing and managing fly ash. Additionally, the elemental composition analysis results suggested that there were large amounts of Ca and K. Furthermore, the study demonstrated that the baghouse could remove more than 99.9% of the r-Cs and dust in exhaust gas

Key Words: radioactive cesium, woody biomass fly ash, leaching rate, baghouse, removal efficiency

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