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Short note:

Impact of coal source changes on Mercury content in fly ash: Examples from a Kentucky power plant

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Abstract

Mercury capture by coal combustion fly ash is a function of the chemistry of the feed coal, including halogens; the amount and type of carbon in the fly ash; and the type of fly ash collection and the flue gas temperature at the point of fly ash collection. In this study of fly ash collected at different points in time from a five-row electrostatic precipitator (ESP) system at a Kentucky power plant, relationships were seen between the amount of fly ash carbon and the concentration of Hg in the ash. Coincident with the burning of low-S coal at two collection times, a better correlation between Hg and C was seen in the relatively cooler 3rd and 4th ESP rows than in the first two rows. This was particularly evident in the 2007 collection where the fly ash carbon was higher than in the 2004 collection. In 2013, following the installation of flue-gas desulfurization and the resulting switch to high-S coal and the installation of a hydrated-lime injection system between the 2nd and 3rd ESP rows, no significant Hg vs. C trend was observed.

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