A Study on Localized Emission Factors of Continuous Emission Monitoring System Installed on Coal-fired Units in Power In

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ABSTRACT

Estimation of the emission factor is one of the easiest ways to evaluate the emission quantities of air pollutants. As domestic localized emission factor was not established before, the American AP-42 announced by the EPA was adopted as the basis of estimation most of the time. Five representative cogeneration process of coal-fired boilers in the power industry were selected in this research to collect the data uploaded from the Continuous Emission Monitoring System (CEMS) to environmental protection organizations starting from January 1, 2002 to December 31, 2003 for analysis. Meanwhile, the operation data of pollutants for individual process were investigated to calculate the emission quantities and the emission factors of pollutants. Results of the study are as follows: 1. Based on the data monitored by the CEMS, the emission factor of SO2 from the cogeneration coal-fired boiler in the power industry was estimated to be 9.72S on average but to be 8.90S monitored by RATA (kg/Ton-coal). 2. Based on the data monitored by the CEMS, the emission factor of NOx from the cogeneration coal-fired boiler in the power industry was estimated to be 3.3 but to be 2.98 monitored by RATA (kg/Ton-coal). 3. The emission factor of SO2 obtained from this study was significantly lower than 19.017S (kg/Ton-coal) of standards of imposing an air pollution fee and 19.0S (kg/Ton-coal) of Ap-42. Besides, the emission factor of NOx was also lower than 7.507 (kg/Ton-coal) and 17.0 (kg/Ton-coal). The purpose of this study is to examine the emission factors of air pollutants generated from cogeneration process of coal-fired boilers in the power industry and the results will be served as a reference for the environmental protection organizations while declaring the reasonable standards of imposing air pollution fees against emission quantities from the same process as well as for related research fields for further application.

Keywords : emission factor ; Continuous Emission Monitoring System ; RATA ; CEMS

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