

Release of Ammonia and Nitrate from SCR Fly Ash

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ABSTRACT

Electric power plants are using selective catalytic reduction (SCR) and selective non catalytic reduction (SNCR) as post combustion control to achieve greater removal of NO_x. Since these processes use ammonia or urea as reagents, the increased use of SCR/SNCR to control NO_x emissions may affect the utilization of CUB. Unreacted ammonia is expected to be adsorbed on the fly ash. Small column tests are currently being used to determine the rate of ammonia and nitrate released from the ammoniated ash. A 100 g sample of ammoniated fly ash is placed in a 250mL burette. Aliquots of synthetic acid rain are added. A gas permeable ammonia-selective electrode is used to measure the concentration of released ammonia. Nitrates are converted to ammonia by adding an alkaline reagent and a reducing agent and is measured with the ammonia electrode. Data indicate that the release of ammonia and nitrates from SCR fly ash is fairly rapid.