Distribution of Mercury in FGD Sludge

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ABSTRACT

Recent reports on the partitioning of mercury (Hg) in flue gas desulfurization (FGD) sludge have differed on the distribution of Hg between the aqueous and solid phases. In one case, the Hg was accounted exclusively to the fine, rather than crystalline, portion of the solid gypsum. In another, Hg was found to be about evenly distributed between the gypsum and the waste water. More effective Hg control strategies can be developed if the Hg is limited to, or more concentrated in, a particular fraction. For example, handling of the fines as a separate process stream might be beneficial if the Hg was present in that phase preferentially. To investigate the extent of partitioning of Hg among the different fractions of the sludge, a size separation based on sedimentation is being applied to a selection of FGD product slurries. Hg analysis of the supernatant aqueous phase (via CVAA) and of successive sections of the sediment (DMA-80) are being used to determine what, if any, preferential sorption of Hg has occurred. Results will be presented to indicate in which cases a non-uniform distribution can be seen.

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