

In-Duct Scrubber (IDS) – A Commercially Available Technology for Removal of Gaseous Pollutants from an Industrial Facility

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Abstract

Alcoa has conducted multi-year concept validation, pilot and full-scale demonstration studies to assess the technical feasibility of an energy efficient, horizontal gas-flow, co-current in-duct scrubber (IDS). More recently, Alcoa has completed a two year testing of the scrubber at its Lake Charles Carbon facility demonstrating an average SO₂ removal efficiency of 93 %, an average fluoride removal efficiency of 85 % and a total particulate removal efficiency > 55 %. Based on Lake Charles performance, IDS technology has been submitted for State MACT (Maximum Achievable Control Technology) permit replacing the age old electro-static precipitator at the facility. State MACT designation is expected during 4Q 2016. This paper will provide detail operational data from the performance validation testing at Lake Charles facility and will also touch upon the various scrubber blowdown management options that can be designed and commercially implemented at industrial facilities. IDS is targeted for worldwide commercialization in the area of small to medium size coal fired boilers, smelters, calciners and bake furnaces.