

Novel Approach to Mercury Emission Control for wFGDs

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Nalco Water currently provides mercury emission control for over 70 GW of coal-fired boilers in response to government required regulations (EPA MATS, etc.) Nalco Water's existing MerControl technologies, MerControl 8034 Plus and MerControl SD-Hg, are both liquid based technologies used to maximize mercury removal across a wet Flue Gas Desulphurization (wFGD) system or a semi-dry scrubber (SDA, CDS, etc.) Units equipped with a wFGD are dependent on achieving mercury oxidations rates which result in elemental mercury concentrations below the target mercury emission rate at the stack since wFGDs will only remove the oxidized mercury due to the low solubility of elemental mercury. If mercury oxidation rates are not adequate to reach the desired inlet elemental mercury level to the wFGD, activated carbon injection prior to the particulate control device or polishing steps post wFGD will need to be employed. Activated carbon and post wFGD polishing steps can be problematic, due to high reagent cost, system reliability and high capital cost. For these reasons, Nalco Water will present full scale data on a novel liquid-based mercury capture additive for units equipped with a wFGD, eliminating the need for activated carbon injection, fuel additives (calcium bromide, etc), and/or post wFGD polishing systems. Preliminary full-scale demonstration data suggest 30% operational savings compared to activated carbon, with greatly reduced maintenance and capital requirements.

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