

# Applications of Fox Venturi Eductors

## Case Study No. 52

**Product :** **Hydrated Lime** - Finely powdered hydrated Lime  $\text{Ca}(\text{OH})_2$ , used as a sorbent for flue-gas desulphurization.

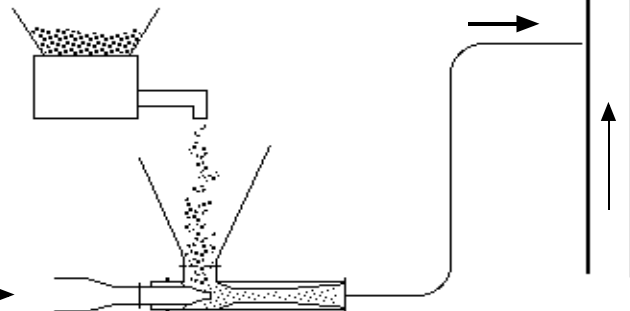
**Problem :** A pollution control concern, working on behalf of a power plant, needs to inject a small flow rate of hydrated lime into an existing duct. The material is very fine, somewhat abrasive, and very cohesive. Reliability in this critical emissions control system is of paramount concern.

**Solution :** A pair of stainless steel, 2" Fox Venturi Eductors are used to handle the output from a loss-in-weight feeder. Build-up of hydrated lime on eductor internals is unavoidable, and frequency unpredictable, due to varying ambient (moisture) conditions and changing lime characteristics. After much testing with many other conveying schemes, the most reliable was found to be use of a Fox stainless eductor, with one held in reserve after cleaning in an acid bath. Easy switch-overs either after detecting build-up or simply on a daily basis permit operation of an otherwise reliable conveying system with no moving parts. Published article by independent researcher concurs that this seemingly complex approach delivers the most reliable sorbent injection.

### Conveying Hydrated Lime in FGD Applications Using Fox Venturi Eductors

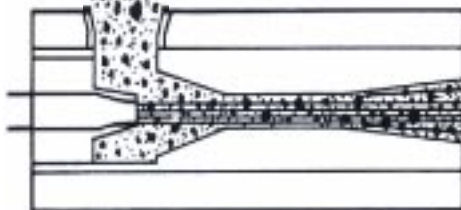
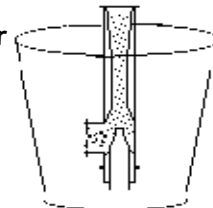
Loss in Weight  
feeder doses  
required lime  
flow rate.

Air at 5 - 14  
psig, depend-  
ing on back-  
pressure in  
duct or stack.



2" 304 ss Fox Eductor

Spare Fox Eductor is immersed in acid bath or other solution to remove lime build-up from internals after it has been in service. Another clean-out method is heating to 450° F or higher.



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