

Use of radiometric measurement in Flue Gas Desulphurization (FGD) Systems

Flue Gas Desulphurization (FGD) units are critical in reducing sulfur dioxide (SO_2) emissions from fossil fuel power plants. Wet scrubbers are a common type of FGD technology that uses a liquid containing an alkali reagent (limestone or lime), to absorb SO_2 from the flue gas via oxidation. As environmental regulations continue to tighten, the role of FGD units will continue to be important in achieving sustainable and compliant operations.

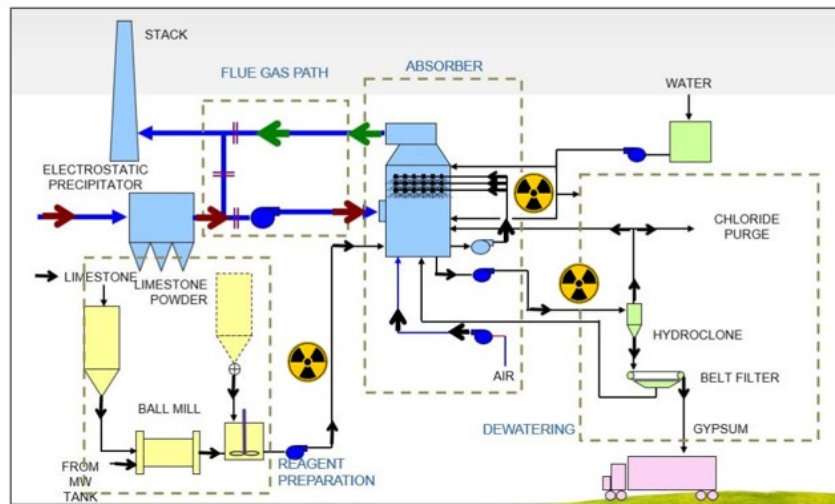
Radiometric density measurements are used to monitor the density of the slurry in wet scrubbers. The efficiency of the scrubbing process depends on maintaining the correct slurry density, which ensures optimal contact between the flue gas and the alkali reagent, and concentration of reagent. Accurate density measurements ensure that the scrubbing liquid is neither too dilute (which would reduce SO_2 removal efficiency) nor too concentrated (which could lead to scaling and operational issues).

Radiometric instruments are ideal for service in the FGD unit because they are:

- Continuously monitoring, allowing for immediate adjustments to the process, enhancing the efficiency and reliability. This allows for automated adjustments to the slurry composition to ensure optimal SO_2 absorption.
- Non-contact, meaning that the sensing elements do not require process connection. Therefore, they are not subject to the harsh corrosive and erosive process material and maintain a high degree of reliability. They are also not subject to blockage of sampling lines that are required by other measurement technologies.

VEGA Americas has provided measurement systems to many coal-fired power plant FGD systems. We can provide our expertise and experience which include the following points within the Flue Gas Desulphurization unit:

- Limestone preparation and/or Reagent feed to absorber tower
- Recirculation lines
- Gypsum byproduct withdraw



Conclusion

Radiometric density measurement is a valuable tool in the operation of flue gas desulphurization units. By providing accurate, real-time data on slurry density, VEGA Americas MINITRAC 31 density meters enable efficient process control, enhance SO_2 removal efficiency, and ensure the reliability and safety of the FGD system. If you want to improve the operations of your unit for reagent slurry control, please contact VEGA Americas and let us help you find a solution.