

Technology Portrait:

Doosan Lentjes SNCR Plants

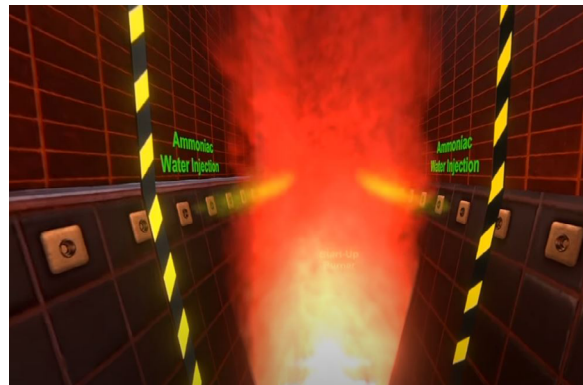
The SNCR process (selective non-catalytic reduction) reduces NO_x emissions by injecting a reducing agent into the first boiler pass. Either ammonia water or urea can be used for this, which react with the nitrogen oxides (NO, NO₂) to form nitrogen and water.

The process works in a temperature window between 850-1050 °C. Deviating temperatures lead to lower efficiency due to increasing side reactions, increased NH₃ slip and thus increased additive consumption. The slip must be minimised through coordinated process control or removed in a further cleaning stage.

The SNCR process reduces NO_x emissions in the flue gas to values at the upper end of the range specified in the BAT reference documents.

Optimised plants

Doosan Lentjes SNCR systems are optimised through both design and process engineering measures. The cross-section is divided into several zones and the injection point with the most suitable temperature window is selected by the arrangement of several injection levels and rapid, spatial temperature detection. Furthermore, the firing rate control as a primary measure ensures the most stable combustion possible with low NO_x emissions and temperature fluctuations. A special design of the secondary air injection ensures that the pollutant and temperature are distributed as uniformly as possible before entering the SNCR levels.



Features of the Doosan Lentjes SNCR systems:

- ▶ Low NO_x emissions combined with low NH₃ slip
- ▶ Efficient control through concentration measurements downstream of the boiler and at the stack, as well as elaborate temperature measurement
- ▶ Flexible dosing over several levels
- ▶ Good mixing of flue gases upstream of SNCR due to optimised secondary air injection
- ▶ Comparable process conditions thanks to good combustion control

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