

**thyssenkrupp Steel Europe AG / VPC GmbH
SCR RETROFIT ON POWER PLANT
“HERMANN WENZEL” UNIT III, DUISBURG-RUHRORT**



thyssenkrupp Steel Europe AG / VPC GmbH



Performance Data			
	Mixed operation	Coke gas, only	Coke gas Blast furnace gas min BK2
NOx raw gas (mg/Nm ³)	600	750	265
Warranty value NOx outlet Cat. (mg/Nm ³)	100 (dry, 11 Vol% O ₂)		
NH ₃ Slip (mg/Nm ³)	< 5 (dry, 11 Vol% O ₂)		
RG-Volume flow (Nm ³ /h)	282.000	319.000	487.000
NH ₄ OH-Evaporator	Steam operated contact evaporator		

THE TASK

thyssenkrupp Steel Europe AG operates the gas-fired "Hermann Wenzel" power plant with a total of four units at the Duisburg-Ruhrort location. Unit III is operated in mixed mode with blast furnace gas and coke oven gas. To match nitrogen oxide emissions requirements under the emission directives, a nitrogen oxide reduction system had to be retrofitted.

THE SOLUTION

To reduce nitrogen emissions, an SCR system was retrofitted in Unit III. In addition to the integration of the new SCR reactor, the scope of supply included the reducing agent supply up to the injection into the flue gas path, including the associated piping, control and measurement technology.

The load transfer of the required catalyst layer should not be directly into the boiler shell. In order to ensure this, the load of the SCR in Unit III is transferred directly into the boiler steel structure by means of additional structures according to the current state of the art.

Compliance with the required denitrification rate is achieved with only one layer of SCR catalyst. The catalyst level can be walked on.

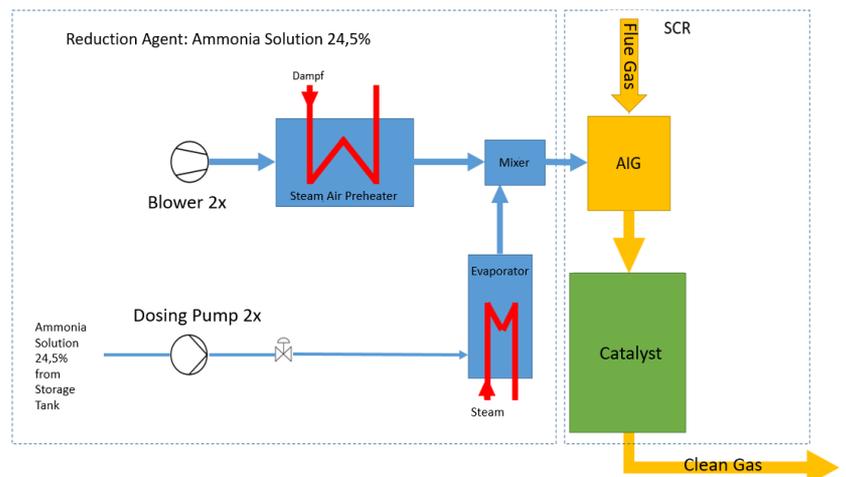
The integration of the SCR system into the existing power plant boilers has worked flawlessly. The stricter emission values are reliably maintained.

SCOPE OF SUPPLY

- SCR reactor
- DeNOx catalyst modules
- Reducing agent ammonia injection grid
- Statically mixer
- Carrier gas blower-/ Evaporator skid consisting off
 - Gas / Steam heat exchanger used to pre-heat the carrier gas
 - NH₄OH-Evaporator (steam operated direct evaporator)
- Instrumentation and plant control system
- NOx and NH₃ Analyser

ENGINEERING SERVICES

- Engineering
- Manufacturing and delivery
- Assembly supervision
- Commissioning



SCR Unit – Process Flow Sheet Block III