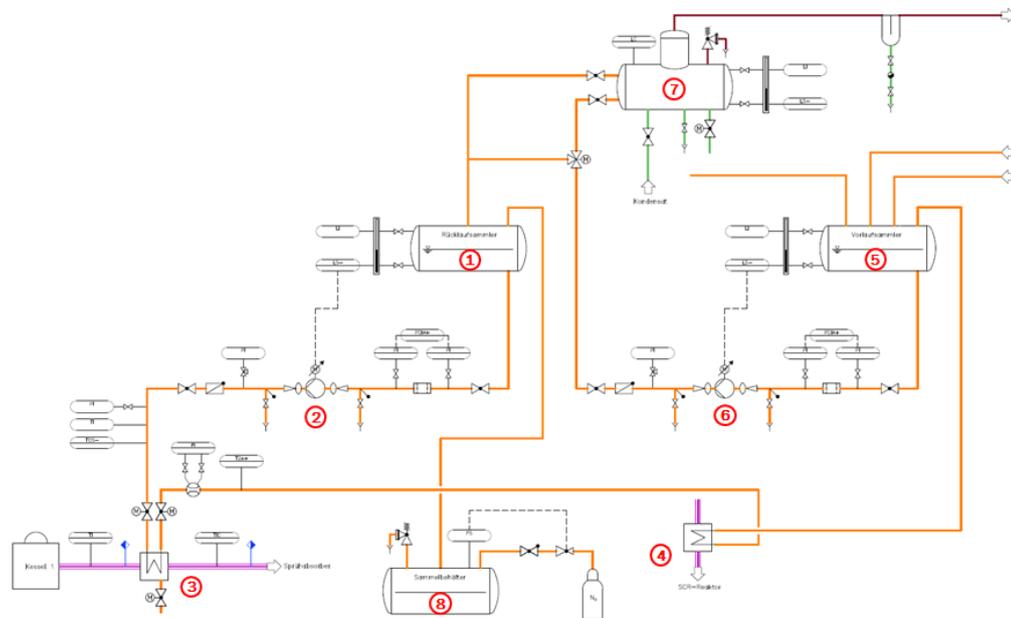


Client: Incineration plant MVA Hagen
Project: Thermal oil heat transfer system
Services: Draft planning, approval planning, tendering



General

The waste incineration plant in Hagen has three identical incineration lines, each of which has a separate flue-gas cleaning system fitted downstream. Currently, the flue gas leaves the boiler at a temperature of approx. 340°C and is fed into a spray absorber.

The proposed heat transfer system is intended to extract heat from the stream of flue gas upstream the spray absorber, using it to re-heat the flue gases upstream the catalyst. This means that in future normal operation of the SCR catalyst can take place without using gas burners. The parameters for the flue gas were selected to ensure that there is no negative impact on the separation capacity of the spray absorber or the components of downstream flue-gas cleaning system.

At the prevailing process temperatures, the system pressure would need to be above 70 bar if water was used. However, if an appropriate thermal oil is used, operation can be practically pressure-less. Therefore, for reasons of safety and economy, thermal oil was selected as the heat transfer medium and the process engineering concept was developed accordingly, providing for a line-oriented heat transfer system.

The amount of heat that can be extracted from the flue gas is so great at approx. 1 MW per line that not only can it be used to reheat the flue gas, but the surplus heat energy can also be utilized for the generation of steam.

The steam is to be generated in a primary plant that is fed by all three lines. The steam generator is to be supplied with feedwater from the existing plant.

No new plants or apparatus are required for the utilization of the additional quantities of steam. The generated steam is fed into the existing 14-bar saturated steam mains and can be used versatilely to supply the district-heat exchangers or the existing turbine. This ensures a better utilization of the steam turbine. Continuous operation is beneficial for the service life of the turbine.

Planning work

T&N's services cover the feasibility study, draft and approval planning as well as the implementation planning that is used as a basis for tendering.

Tendering and contract awarding are to take place in the course of 2019.