Power Wastewater Treatment

Austrian Thermal Power, Mellach, Austria

How we created value

- Efficiency: treating and recycling 156m³ wastewater per day
- Effectiveness: achieved all guaranteed values from inception
- Reliability: operation has been uninterrupted since start-up

Installation Date: 2003
Project Location: Mellach, Graz-Umgebung, Austria

Updated wastewater treatment processes give ATP's ageing Mellach district heating plant an extended lease of life.

Background

Austrian Thermal Power (ATP), a subsidiary of Verbund, is one of the largest producers of power and district heat in Austria.

Following changes to Austrian regulations for the discharge of waste water from thermal power plants, ATP wished to adapt its ageing flue gas washing water plant at Mellach to the meet these new industry standards.

Process

Flue gas washing water is continually recycled within a washing tower. This circulation results in wastewater blown down for treatment bearing a high concentration of soot, organic residues of combustion, sulphurous acid, sulphuric acid and many heavy metals such as lead, cadmium, arsenic and mercury. All such environmental poisons must be reduced below relevant maximum values before any wastewater can be discharged to a sewer or into receiving water.

The plant includes several steps during which heavy metals are precipitated from flue gas washing water partly as metal hydroxides and metal sulphides. The precipitated sludge is separated and dewatered by a plate-and-frame press. A new circular sedimentation tank improves reduction of heavy metals. As DENOX-catalysts age there is also an increasing amount of ammonium in the flue gas washing water, dealt with by an ammonia desorption and absorption plant. New chemical dosing stations, a precoat cartridge filtration unit, and a final neutralisation complete the wastewater treatment process.

An automatic sampling unit takes measurements for audit by the regulatory authorities.

Performance

The plant has a net wastewater production of 156m³ per day which Ovivo's treatment processes cleans and recycles as rinsing and dilution water for chemicals in order to improve the overall water balance. Start-up of the new plant was in December 2003. It achieved all guaranteed values from inception and has operated since then without any interruption on rated load.

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