

Project Description



*Superheater Upgrade at Burnaby MSW Plant
Montenay Inc.
Burnaby, British Columbia*

Project Scope

Montenay Inc. operates a municipal solid waste (MSW) incinerator plant located in Burnaby, British Columbia. The facility operates three essentially identical boilers that were designed to generate 40.9 mt/hr (90,000 lb/hr) of slightly superheated steam at 248 °C (478 °F) and 3,140 kPa (455 psig).

The plant was originally sized to supply process steam for export to an adjacent industrial plant. The fraction of steam that was exported decreased in recent years to about 35% of the production with the remainder being condensed. This caused Montenay Inc. to initiate a power generation project with the goal to improve the plant's energy efficiency and generate additional revenues by operating a steam turbine generator.

The addition of new superheaters was required to raise the final steam temperature to a level that was suitable for use in an efficient steam turbine-generator. Jansen Combustion and Boiler Technologies Inc. (JANSEN) was contracted to perform the process and design engineering for the required boiler modifications.

The project work included defining target process conditions, deriving conceptual design options, sizing the new superheaters, material selection, preparing equipment specifications, and supplying the fabrication and installation drawings.

The boiler modifications were implemented in all three units in spring 2003. Power production started in the summer 2003.

Results

The new primary and secondary superheaters were designed to fit in the second gas-path cavity. After three years of service all three boilers meet the target steam temperature of 341 °C (646 °F). The Inconel 625 overlay materials have held up well in the corrosive environment.

