

## Boiler Rebuild and Upgraded Design for Pinellas County MSW

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### ABSTRACT

This paper discusses the Boiler Rebuild and Upgraded design features of the Pinellas County Solid Waste Recovery Plant located in Pinellas County, Florida. The Pinellas County Solid Waste Recovery plant consists of three 1000 Tons/Day Bulk Refuse fired boilers each designed to generate a nominal 250,000 lbs. of steam per hour (pph), at 750° F/615 psig. The boilers have been in operation since the early 1980's and had come to the end of their reliability life. Based on the previous years of operating experience, specific areas of improvement were established. Desired improvements included; reduce tube bundle fouling, increase the length of time between the off-line cleaning cycles, reduce economizer exit gas temperature and increase steam capacity while achieving unit design steam conditions.

Design options were evaluated using a computerized heat transfer mathematical model calibrated to the current level of boiler performance. The model enabled design modifications to be evaluated and optimized with respect to performance, maintenance and cost. Considering both the performance and maintainability allowed the design team to make a final evaluation and design selection that provided the greatest value over a long-term period.

The unit was designed, fabricated and erected within an 18-month schedule. Performance and optimization testing was accomplished 8 weeks after start-up. The unit has met all of its performance guarantees and is fully operational.