HOW TO SUCCESSFULLY INCREASE THE REVENUE OF WASTE-TO-ENERGY FOR THE LONG TERM

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Abstract

The objective of the paper is to outline a new business-oriented methodology based on the principle of diagnosing before improving and with the aim to produce long-term results that mutually benefit the owner and the operator of a Waste-to-Energy or biomass plant.

The scope covers (1) the determination of correction curves and coefficients for various operating conditions to compare actual equipment performance with design one (with illustration for a steam turbine); (2) the mapping of the yearly plant operation schedule into different operating modes, for a better evaluation of dollar benefits of improvement solutions; (3) the use of a computerized plant simulator model that performs heat and mass balances and translates available monitoring data into dollar value.

When benchmarking the illustrated plant case study with industry standards, we found out that reducing the Deaerator pressure by 40 psi (by 2.7 bar) would translate into an expected additional $850k of total benefits a year.

1. Introduction

This paper presents a result oriented methodology aimed at improving the performance of waste-to-energy and biomass power plants. Despite being a top performer in its industry (see Fig. 1), SERRF (South East Resource Recovery Facility, the city of Long Beach-owned waste-to-energy facility) chose to launch in late 2003 a performance improvement program based on this new methodology. For information, an historical review of key performance data of the SERRF plant is given in Table 1.