PINELLAS COUNTY RESOURCE RECOVERY FACILITY CAPITAL REPLACEMENT PROJECT "SECURING A RETROFIT INVESTMENT- A CAPITAL REPLACEMENT INITIATIVE"

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ABSTRACT

The Clean Air Act Amendments (CAAA) promulgated by the U.S. Environmental Protection Agency (EPA) in 1990 set new emission standards for Waste-To-Energy (WTE) plants throughout the United States. Pinellas County, Florida, has achieved compliance with the new emission guidelines by completing an Air Pollution Control Retrofit to their Resource Recovery Facility (PCRRF) in 2000. Pinellas County, the owner of the PCRRF, now faces the challenge of preserving this investment for the years to come. This paper describes the additional investments being made by Pinellas County as part of the Capital Replacement Project (CRP) to extend the operating life of PCRRF.

INTRODUCTION

The PCRRF is located on the 750-acre Bridgeway Acres Class I/III landfill site in mid-County, and is currently under an operating contract (Consolidated Management Agreement or CMA) with Wheelabrator Pinellas Incorporated (WPI). The PCRRF consists of three (3) combustion units (boilers), each having a rated capacity to mass-burn 1,050 tons per day of municipal solid waste (MSW), with a heating value (HHV) between 3,800 and 5000 BTU/lb. The steam supply from the boilers is directed to two (2) turbine-generators (T/G); T/G No. 1 and No. 2, nominally rated to generate 50 megawatts and 25 megawatts, respectively. The net electrical generation, after satisfying plant auxiliary load demands, is sold to Florida Power Corporation (FPC) under energy and capacity provisions of a Power Purchase Agreement. Boilers No. 1 and 2, T/G No. 1 and all supporting auxiliary systems were placed into operation in 1983. Boiler No. 3, T/G No. 2 and the required additional supporting auxiliary systems became operational in 1986. This is the largest WTE facility in the United States.

Each PCRRF boiler is rated to produce 261,400 pounds per hour of 615 psig, 750°F steam. Make-up to the boiler feedwater systems is supplied from an onsite two-train demineralizer system. The circulating water system for condenser cooling utilizes a five-cell mechanically induced draft, wood frame cooling tower with constant speed fans. Treated water from the landfill site and treated wastewater from local municipal supplies are the primary and secondary sources for cooling water make-up at the cooling tower basin.

In June 2000, a four-year Air Pollution Control (APC) Retrofit Project was completed, which replaced the original electrostatic precipitator on each unit with an emissions control system consisting of Spray Dry Absorbers (SDA), Fabric Filters (FF), a common Selective Non-Catalytic Reduction (SNCR) system and a common Powered Activated Carbon Injection System (PACIS) (Figure 1). This project, which has successfully complied with all new emission guidelines of the CAAA, involved an investment by Pinellas County of over $90 million.

PROJECT INITIATION

In May 2003, the facility will have been in operation for 20 years and the CMA will expire. Within the next year, Pinellas County anticipated that it would prepare a new CMA and solicit interest in the operation of the facility for another 20 years. Pinellas County also recognized that it should invest additional capital to extend the life of the aging facility.

Pinellas County had recently completed a highly successful APC Retrofit Project with a project team that remained largely intact. There was an issue between Pinellas County and the Operator (WPI) regarding interpretation of the Power Purchase Agreement and the CMA. A negotiation was