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ABSTRACT

Public private partnership has played a mayor role in development and successful operation of the current KMS Peel Waste-to-Energy Plant located in Peel Region, Ontario.

On December 10, 1998 KMS Peel Inc. and the Region of Peel entered into an agreement to expand the waste-to-energy facility by 36,000 tonnes (one additional incineration unit). Due to expansion, new, more stringent emission limits were imposed by the latest Ontario Ministry of Environment A-7 Guideline and the Canada-Wide Standards developed by Canadian Council of Ministers of Environment. A Selective Catalytic Reduction (SCR) system with a sodium tetrasulphide injection was selected to supplement the existing dry scrubber/fabric filter air pollution control system for additional reduction in mercury, nitrogen oxides and dioxins/furans emissions. With the upgraded air pollution control technology, the facility will be able to meet the latest emission standards and, to a certain degree, any new standards that may be enforced in future years.

This paper outlines a partnership model that has been successfully implemented in Ontario and has contributed to the public accepting waste-to-energy as integral part of the waste management system, ultimately resulting in facility expansion. It also describes the current facility and upgrade to the existing air pollution control system.

INTRODUCTION

In mid 80s, the Region of Peel (Region) decided to add a waste-to-energy (WTE) plant into their integrated waste management system. The Region's prime goal was to have an environmentally sound municipal solid waste (MSW) disposal method that will reduce their dependence on landfill while they continue to promote and expand the 3 Rs (reduce, reuse, recycle) program.

KMS Peel Inc., formerly Peel Resource Recovery Inc. (PRRI) proposed to the Region to design, build and operate a WTE plant. The WTE plant was sized to handle approximately 30% of the Region's MSW, thus avoiding competition with the Region's recycling effort.

The Region retained MacViro Consultants Inc., an independent consulting firm, to assist them in development of the facility, and defining the roles and responsibilities of the partners, as well as the expected environmental performance of the WTE plant. This agreement became a comer stone of the relationship between the partners; a relationship that is based on trust and commitment towards achieving a common goal having a state-of-the-art facility that operates under the highest environmental standards.

KMS Peel Inc. constructed the 400 tpd WTE facility in Brampton, Ontario (northwest of Toronto) in 1991, and started commercial operation in 1992. Since then, the facility typically has processed approximately 145,000 tonnes of MSW each year, of which approximately 130,000 tonnes is residential waste from the Region of Peel. The other 15,000 tonnes a year is comprised of the selected industrial, commercial and institutional (IC&I) solid waste. The facility generates approximately 8 MW of electricity.

Most recently, in an effort to manage an increased quantity of solid waste generated in the Peel Region due to rapid population growth, and with the main Region's sanitary landfill site closure in the near future, Peel Regional Council decided, based on 8 years of positive experience with waste-to-energy, to expand the existing WTE facility capacity by 25%. This amounts to expansion from 145,000 tonnes per year to 180,000 tonnes. It was also decided to upgrade the existing air pollution control system to satisfy the most stringent emission standards.

PUBLIC PRIVATE PARTNERSHIP

In 1984, the Region of Peel began the process of developing a waste-to-energy facility to handle approximately one third of the Region's non-hazardous solid waste, thereby extending the life of the landfill and generating electricity for distribution to the grid. The strategy the Region adopted to obtain environmental approval, design, construct and operate the facility for a