

Was the EPA Right?

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Abstract

Polk County owns and operates two starved air mass burn municipal solid waste combustors serving a five County region in rural Northwest Minnesota. The plant was constructed in 1987 and began burning MSW in 1988. Each unit has a combustion capacity of 40 tons per day producing energy in the form of saturated steam for two customers in the adjacent industrial park. The plant utilizes a two field electrostatic precipitator (ESP) as the air pollution control device for each unit. In 1996, a materials recovery system was constructed in front of the waste combustors to remove problem/objectionable items. This facility is providing many benefits including reduced stack emissions, lower O & M costs for the WTE units, and revenues from the sales of extracted recyclables. Both facilities have operated successfully since startup. EPA emission guidelines for existing small waste combustors were originally promulgated in December 1995. These guidelines set more stringent limits for pollutants currently regulated and added limits for several other pollutants previously unregulated. However, litigation set aside these 1995 emission guidelines for small waste combustors until they were re-established by EPA in December 2000. Pending release of the year 2000 emission guidelines, the Minnesota Pollution Control Agency stayed the State rule and issued a Rule variance in 1998 that included new limits for mercury, and dioxins/furans. In order to attain compliance with the new State limit for dioxin/furans, Polk began injecting powdered activated carbon into the flue gas of each unit upstream of the ESP. The emission guidelines are technology based, and EPA concluded that small existing waste combustors could maintain operation of the electrostatic precipitators. Compliance with the guidelines could be attained with an ESP upgrade or added collection field in conjunction with the addition of other pollution control equipment. Was the EPA right? Can this technology comply with the guidelines? This paper will discuss the development of an APC retrofit project for a small waste combustor whose goal was to attain full compliance with the revised air emission guidelines while maintaining operation of the existing electrostatic precipitators.

1.0 Introduction

Beginning in the early 1990's, guidelines for small existing municipal waste combustors were under development and were finally adopted in 1995. However legal action resulted in the guidelines being vacated. EPA was required to re-propose and re-adopt the guidelines because of procedural errors.

In December 2000 the guidelines were re-established. In 1998, the Minnesota Pollution Control Agency (MPCA) issued a Rule variance that stayed the State rule but included a new emission limit for dioxins/furans. In 1998 Polk County began

injecting powdered activated carbon into the flue gas stream of each combustor to attain compliance with the new limits.

Knowing that State guidelines would again be promulgated and with the encouragement of the MPCA, Polk began the process of planning an air pollution control (APC) retrofit project designed to meet the 1995 emission guidelines. The MPCA committed that the State would adopt the EPA guidelines, but would look for compliance in a shorter timeframe than required under the federal rule. This action gave Polk the direction it needed to move ahead with the APC project.