

ABSTRACT FOR AWMA 2007 CONFERENCE:

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**A Modeling Methodology to Estimate the Potential for Ground-Level Fogging from Wet-Scrubbed Plumes**

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New federal and state requirements for major SO<sub>2</sub> emission reductions such as the CAIR program have resulted in an increase in the use of wet Flue Gas Desulfurization (FGD) systems, particularly for electric generating units. The installation of the wet FGD systems results in a substantial increase in the emissions of water vapor and liquid water, which raises the concern of the potential for plume-induced ground-level fogging in the vicinity of these plants.

A modeling methodology was developed to estimate the potential for the occurrence of ground-level fogging due to this increased water vapor and liquid water emissions from wet-scrubbed plumes. This methodology can be applied to assist the source in the determination of a stack height that will minimize the fogging impacts of wet-scrubbed plumes.

This methodology consists of two main elements:

1. Air dispersion modeling of the water vapor and liquid water emissions from the source
2. Post-processing of model-predicted ground-level water vapor concentrations to determine the probability of fogging and/or icing occurrence.

This paper discusses this methodology and provides examples of its application. It is directed to those government and private sector officials as well as those environmental groups and the general public concerned with the impact of new FGD systems on plume fogging in the surrounding area.

