

## Chapter 2

### THE ROLE OF MODELING IN THE DEVELOPMENT OF EMISSION CONTROL STRATEGIES

#### Goals

Work Group 2 will provide several major output products to Groups 3A and 3B. One of these, a review of experimentally observed atmospheric loadings for hydrogen and sulfate ion, is discussed in Chapter 6 of this report. These loadings will be used by Group 3B as the starting point for planning strategies to reduce loadings in sensitive areas. A second major output is the transfer matrices (i.e., source-receptor relationships) for acid-deposition-related species. These matrices will be the major tool which Groups 3A and 3B will employ to develop strategies for the control of acid deposition species and precursors. Chapters 2 through 5 of this report discuss the development of these matrices in some detail in order that the present and future utility of this tool is well understood.

#### What is a Long Range Transport Model

Before introducing the concept of a transfer matrix, the concept of modeling in general will be reviewed.

A model is essentially a description of physical or chemical processes in the language of mathematics. Relationships between the variables of the system being modeled are