Some additional support for these conclusions was provided recently by studies of actual ambient data on NO_x and hydrocarbon levels from a number of cities in the U.S. Using empirical modeling and historical trend analysis, Trijonis[38,39] concluded that the ambient data were generally consistent with the consensus of chamber results. The exact form of the NO_2/precursor relationship, however, was found to vary somewhat from one location to another, presumably depending on local hydrocarbon/NO_x ratios, on the details of the hydrocarbon mix, and on specific meteorological conditions.

Reference is made also to another body of data due to Pitts et al.[55] (collected for a different purpose) which also contains potential information on the relationship between NO_x and its precursors. However, the data have not been analyzed to date for its pertinence to the NO_x/precursor question.

6.1.3 NO_x Chemistry in Plumes

The atmospheric chemistry involving oxides of nitrogen in plumes from major fuel burning installations is essentially that described earlier. However, the relatively high concentrations of NO and NO_2 in such plumes compared with those in the ambient urban atmosphere leads to certain chemical phenomena particularly characteristic of plumes. For example, ambient ozone is quickly scavenged in the plume by the large quantities of NO through reaction 6-4. Because the rate of