this period is one time step (typically 6 hours), after which k_S is modified. For those that use a constant oxidation rate, the period is the duration of complete scenerio, which may be many days long.

At present, the LRT models identified in Table III make no attempt to account for the acidification due to HNO_3 and organic acids, nor the basification due to NH_3 and basic minerals.

In the review that follows, it will be demonstrated that the major SO_2 oxidation reactions are first order in SO_2, which satisfies condition "a." However, these reactions are not linear, and when the rates are expressed as pseudo-first order, their rate constants vary significantly over time steps of $\geq$6 hours. Thus, for all important SO_2 oxidation reactions, condition "b" is violated.

CHEMISTRY OF THE OXIDES OF NITROGEN AND THE PRODUCTION OF OXIDANTS

In this section, the following topics are reviewed: oxidant and free radical production in the clean and polluted lower troposphere, laboratory evidence of the NO_2-to-precursor relationships, computer simulation of the atmospheric chemistry of these chemicals, and nitrite and nitrate formation.

Clean Tropospheric Chemistry

The chemistry of the clean troposphere and its mathematical simulation have been studied extensively by Levy (1971), Wofsy et al. (1972), Crutzen (1974), Fishman and Crutzen (1977), Chameides and Walker (1973, 1976) and Stewart et al. (1977).

The photochemistry of the unpolluted troposphere develops around a chain reaction sequence involving NO, CH_4, CO and O_3. The photochemical reaction chain sequence in the troposphere is initiated by hydroxyl radicals (HO) formed from the interaction of $O(^1D)$, the product of photolysis of ozone in the short end portion of the solar spectrum, with water.