OBJECTIVE OF THE STUDY

The past information and experience as discussed in previous sections indicate and elaborate the need of taking up a study to provide information on the air quality status of city, Delhi with special reference to particulates suspended and gases, for this study, Delhi has its own climate, influenced by hilly regions and desert areas of Rajasthan. The anthropogenic emissions coupled with natural activities give a complex nature to its air quality. The following study was undertaken to assess the status and behaviour of nitrate as particulate, its size distribution and correlation with NOx in the atmosphere of Delhi. Also it would be necessary to understand other factors like photochemical reactions, relative humidity which affect transformation rate significantly.

The work programme includes the monitoring of total suspended particulates, NO2, NO3, ozone, wind velocity, relative humidity, temperature. The overall study period was divided into two phases owing to the nature of the study.

The study period of phase one (April 85 to Dec 85) include sampling and analysis of data obtained
at two sampling stations. Jawahar Lal Nehru University (JNU) Moti Nagar (MN). The main objectives of the study include

1. Monitoring and analysis of 
   T S P and gases in the composite aerosols through hi-vol sampling and to know the status of these at selected sampling sites.

2. To obtain information whether any relationship existed between these sampling sites, as they represent areas of different anthropogenic activities.

On the basis of the findings of the study of phase one and earlier studies (Dave et al. 1985) carried out at these sampling sites, Motinagar and Jawahar Lal Nehru University were selected to obtain data on size distribution pattern of particulates. Motinagar represents as a source and JNU exhibits as a receptor. Both they give source-receptor relationship which is also supported by wind data obtained from Indian Meteorological Department (IMD), New Delhi.

The study period of Phase II (Jan 86 to Feb.87) includes sampling at Motinagar and JNU through 8-stage cascade impactors (Andersen, Mark II) to obtain data on size distribution pattern of particulates in various size ranges. This was
understood to give right evaluation of health risks to the general public of TSP in ambient air associated with the respirable fraction (10 \text{ Um in diameter}). The main objective of this study include

1. To understand the size distribution patterns of the urban aerosol.

2. To obtain information whether fine particulate fractions (2.1 \text{ Um in diameter}) constitute a substantial portion of particles less than 10 \text{ Um in diameter}. As information on fine particulates may be helpful in assessment of respiratory effects on human beings.

3. Whether data obtained through particle sizing of the aerosols provide any information of its emission sources?

4. To find out what percentage of particulates below 10 \text{ Um in diameter} present in the composite aerosols (hi. vol. samples). As particles below 10 \text{ Um in diameter} (PM_{10}) are considered as inhalable particles. And, whether PM_{10} study will be helpful in evaluation of existing ambient air quality standards of particulates?