A Assemble historic exposure measurements.

The starting point will be the SMCDC database. From it, summaries of specific areas within covered factories will be completed. See Section 25.1 B for discussion of the initial data analysis. We will also seek prior records (before the database startup circa 1987) from the factories and summarize those data. Since methods have changed over time, we expect the need to demonstrate equivalence (or conversion factors) for any prior to current methods. We also expect a large number of area samples (instead of the preferable personal samples) and we will need to develop approaches to translate the area measurements (as feasible & as required) to better represent personal exposure estimates. The main approach will be a task-time weighted average approach (Smith 1991). The goal of the data assembly will be formation of a subject's job - exposure - time matrix.

B Develop facility timelines and history of key changes

We will develop and use standard questionnaires and data recording forms that are designed to assemble the history of key changes in the operations that could have altered exposure potential, generally in one of four categories:

Workplace/facility
Materials used
Environmental conditions
Tasks/work methods

Part of the effort will be identifying and investigating the key determinants of exposure. Within a given industry, there will be some consistency in these key determinants. Fortunately, operations have been rather stable in China until approximately the last decade. This relative stability should translate to simpler, fewer, and lesser magnitude changes to consider. Determinants of exposure are the factors that relate to the release, dispersal or contact with study chemicals leading to exposure of workers. Schneider (1991) discusses several "universal exposure modifiers." A few examples anticipated as applicable to Shanghai area industries are:

Workplace/Facility related
- process design - capacity, conditions, containment
- ventilation
- proximity to other contaminant sources

Materials related
- volumes of solvents used
- composition of solvents used

Environmental
- Climate - seasonal temperatures
- Local contaminant sources (other industry)

Tasks/work methods
- task duration and frequency
- work practices
- protective measures