rest conditions. This may explain in part why no significant difference exists between half facepiece negative pressure and pressure-demand respirators.

PROCEDURE

Prior to testing, each person was trained in the selection and fit testing of respirators using the National Paint and Coatings Association Training Program[4]. Each was then fit tested using the saccharin fit test[4]. Respirators selected for use by participants are listed above and in Table I.

Two individuals were also trained in use of a pressure-demand self-contained breathing apparatus. Fit testing was not done, as it is not required for pressure-demand equipment in the ANSI Z88.2 (1980) standard.

During sample collection, each participant was observed continually to ensure that the sample train remained intact and did not interfere with the respirator seal on the face, and to note occurances which might have affected respirator performance, such as movement of the respirator on the face. The participants were very busy with their work activities and soon ignored the presence of the researchers.

AIR SAMPLING AND ANALYSIS

To determine the workplace protection factors, concurrent samples were taken from inside the respirator (in-mask) at nose level and outside the respirator at the