...tion dust obeys a simple exponential size-distribution law. (3) Average beta-values for this exponential function vary with locality. (4) At any one colliery, the average beta-value is reasonably constant regardless of location and shift. Evidence in support of the first conclusion is largely of an indirect nature, but it is in complete accord with previous results. The other 3 conclusions relating to size-distribution of the above 1 micron component, seem well established and sufficiently convincing to be accepted as generalizations. The evaluation of the samples was carried out using the optical microscope, the particles were sized in terms of the diameters of circles of equivalent projected areas. The implications of the results are discussed and it is shown that the 1 to 5 micron particle number count is a satisfactory parameter for the measurement of the hazard associated with air-borne dust. -- APCA Abstr.

PREVENTIVE ENGINEERING

The Reduction of Smoke from a Vertical Boiler Fired by an Underfeed Stoker. D. L. R. Bailey and L. E. Reed. J. Inst. Fuel 33, 188-192 (Apr. 1960).

A series of tests has been made to measure the smoke emitted under different conditions of operation from a vertical boiler fired by an underfeed stoker. The density of smoke was affected both by the quantity of air supplied and by the method in which it entered the combustion chamber. The introduction of secondary air either through the boiler door or through the back of the boiler was found to reduce the emission of smoke, but the minimum quantity of smoke was produced when using modulated control of both the rate of coal feed and the quantity of primary air. The latter method was found to be the most suitable to meet the requirements of the Clean Air Act. -- APCA Abstr.

...ethods of Dust and Fume Disposal. W. A. Darrah. Ind. Heating 27, 70-82 (Jan. 1960).

Most fumes are largely diluted; usually with air, but sometimes with steam or other gases. Fumes may consist of either organic or inorganic compounds. Smoke is an example of a common fume composed of carbon and droplets of tar. Paint fumes, baked Japan, or solvent vapors, are examples of fumes in vapor stages. Each of the various types of air cleaning devices have a field of use peculiarly its own. Filtration, combustion, and catalytic methods for removal of different types of fumes are discussed. Another method of removing fumes and vapors is by absorption in activated charcoal. This material, made from coconut shells, will absorb various fumes and even some air-borne odors. -- APCA Abstr.

...r Versus Environment. Twenty-Seventh Research Report of the Committee on Sanitary ...gineering Research of the Sanitary Engineering Division. Proc. Am. Soc. Civil Engrs. ... Sanitary Engr. Div. 86, No. SA4 Part 1 13-23 (July 1960).

Sanitary engineers should provide the leadership in the entire area of environmental control. Complete integration and coordination of the broad areas of water usage and water pollution is needed. Research on problems of water pollution should be [illegible] ...ported by the Public Health Service. Water quality criteria should be reviewed and defined, as an important guide for regulatory agencies, and economic considerations should be evaluated. Research is needed in the catagorical relationships of health effects of atmospheric pollutants in the physical science involved and in engineering studies. To meet evident needs in this field, available resources should be channeled to specific projects on the basis of urgency of need and expected productivity. Food constitutes a dominant component of man's environment that is continuously undergoing change. A broad program of research in food technology is urged so that these changes may be properly appraised before they reach the application stage. Team approach and interchange of information should be emphasized among