BRIEF SUMMARY OF AIR CLEANING PROGRAM AT WESTINGHOUSE ATOMIC POWER DIVISION, PITTSBURGH, PA.

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Until recently the Westinghouse Atomic Power Division experimental facilities were largely devoted to the development and manufacture of the submarine thermal reactor (STR) power plant. During the first phase of our program, which involved constructing new facilities and doing research, development and design work; considerable effort was expended not only in controlling the hazards during this work, but also in developing processes which would minimize the production or dispersion of dust or fumes.

Currently a wide variety of research and development work is being done involving such activities as chemistry, chemical engineering, physics, metallurgy, engineering and electronics. Also, manufacturing operations are being done which involve a variety of processes and machines. Radiation or radioactive materials are used in many phases of these operations.

A considerable variety of dusts and fumes are evolved which require the use of some form of dust or fume collecting equipment; but, with a few exceptions, high dust loadings or high levels of

radioactivity are not encountered. Some of the facilities which require exhaust ventillation and dust collecting equipment are metallurgical and machining operations, analytical chemistry laboratories, physics activities and a five-cell Hot Laboratory.

At the present time there are 17 Type "N" Rotoclones in use ranging in size from No. 1½ to No. 6 with a total capacity of approximately 70,000 cfm. Precipitrons having a capacity of 7,500 cfm are in use for dust control. A specially designed filter is used on certain metallurgical and machining operations. We refer to this as an "accountability filter", and it was designed primarily for the collection of dusts which might need to be recovered.

These units consist of a rectangular case with air entering at the top and passing downward through two layers of FG-50 fiberglass filter media supported horizontally on a screen. The filter media is operated at 100 cfm per square foot. Immediately beneath the filter is a plenum chamber containing an exhaust fan. The flat top of the case is removable to permit access directly to the filter media so that it can be rolled up and retain all the dust in it. This arrangement permits cleaning of duct work and opening the top of the filter to clean down the vertical surfaces on the dirty side of the filter media while the exhaust blower is operating. This prevents any dispersion of the dust, as well as depositing it all directly on the filter media. The dust loadings on these operations are low. Thirteen of these units are in use: 10 - 500 cfm units, 1 - 2500 cfm unit and 2 - 5000 cfm units.

In addition to this dust collecting equipment, there has been need for a number of "clean rooms", and these are furnished with air which has been cleaned by Precipitrons.

Stacks from some dust collectors are sampled continuously during their operating period using filter paper samplers which have been permanently installed. Such monitoring is done on only those stacks where it has been demonstrated that radioactive materials may pass through filters in significant concentrations. Other dust collectors are periodically inspected to insure satisfactory operation.

In general it can be said that the dust collecting equipment which we are using at the present time is taking care of a wide variety of dust, fumes and vapors; and serious difficulties are not being experienced.