

pollution abatement. Also, the steel industry continues to be alert to pollution abatement advances made in foreign countries.

Let us now examine the projects sponsored by AISI.

First, in air pollution abatement.

As Max Howell of AISI reported to the National Conference on Air Pollution in 1958, the institute sponsored work on air-pollution abatement at the Industrial Hygiene Foundation at Mellon Institute for several years starting in 1950. At that time, it was difficult even to define the problem to be solved, inasmuch as simple, effective, and inexpensive instruments which could take a sample which was truly representative of either the ambient atmosphere or of stack gases had not been developed. Therefore, the Mellon Institute group set out to develop instruments and techniques which would be useful in these fields.

Among the instruments developed was an automatic smoke filter which samples the atmosphere for successive short time periods, measured in hours, and permits the tracing of the variations in smoke intensity, largely due to weather, making possible comparisons between different districts, and between different seasons.

A hydrogen sulfide sampler which continuously monitors the atmosphere and an instrument for measuring hourly dust-fall rates with a high degree of precision were also developed. Coupled with the work on the instruments was the development of the techniques required for their utilization. The production and sale of the instruments were undertaken by a commercial instrument maker and, to date, several thousand have been put into use.

At the same time a development program on stack sampling which included the evaluation of techniques for measuring particle size distribution of the recovered dust was conducted.

A training school to which the various members of the AISI sent men to be trained in the techniques used in air-pollution studies was established. The courses ran for 3 months and comprised formal and informal seminars, literature assignments, plant visits, and laboratory work.

In addition to these studies, existing cleaning equipment was critically examined with a view toward classifying it into groups of optimum usefulness. No single device was found which could do all the things necessary to meet air cleanliness requirements.

Therefore, it was decided that an attempt should be made to develop a new type of filter device which, hopefully, would fit into the metallurgical stack gas cleaning program somewhat better than did the conventional cleaning devices. To implement this idea, a research project which is still in operation was set up at the Harvard School of Public Health in 1953, under the late Dr. Silverman. Studies of various filtering devices were made and a new type of continuous self-forming filter made from slag wool was devised.

Three pilot filters were built and tested at an eastern steel mill. Unfortunately, this cleaner turned out not to have advantages over commercially available units, and the Harvard group began the development of an instrument for automatically measuring amounts of dust in stack gases. Final field testing of the unit was conducted this year, and the unit appears to work satisfactorily with the degree of reliability necessary for commercial application.