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1000 A Comparison of the Composition of Reactor Waste Solutions and Radioactive Fallout. W. J. Lacy. Am. Ind. Hyg. Assn. J. 21, 334-339 (Aug. 1960).

Both fallout and power reactor wastes constitute hazards to the population. All radiation is damaging, however, the relative danger will depend on the length of time and level of exposure. Hazards due to radiation and chemical toxicity in a chemical processing plant under conditions of normal operation can be controlled. General radiation levels for radioactive fuel processing equipment can be reduced with proper shields. Ingestion and inhalation of radioactive material either reactor-produced or from the fallout of a nuclear detonation may be detected and controlled. The major biological hazards in the reactor waste after a 30-year accumulation period and a 5-year decay following accumulation, are the fission products in the following order: Sr^{90}, Cs^{137}, Ce^{144}, and Pm^{147}. All these radionuclides are also formed in a nuclear detonation and are the most hazardous of the long half-life fission products in fallout, as well as in reactor waste. Chemically, both qualitatively and quantitatively, the accompanying or carrier material usually is a different compound. This is the type of complicated, diversed problem involving many fields of science that members of the American Industrial Hygiene Association have been dealing with and will continue to be challenged with for some time to come. -- Author's summary

1001 Method for Photographic Identification of Microscopic Radioactive Particles. J. Sisefsky. Brit. J. Appl. Phys. 10, 526-529 (Dec. 1959).

A method is described for identification and microscopy of small radioactive particles mixed with a large amount of inactive ones. The particles are prepared on a celluloid coating on a glass plate. The plate is coated with a nuclear emulsion in gel form which is reversal developed in situ leaving the active particles visible, in the centers of clear circular spots against a brown transparent background. -- Bull. Hyg.

ENVIRONMENTAL MEASUREMENTS

1002 Instruments for Air Pollution. R. L. Swift. Air Engineering 2, 27-30 (Jan. 1960).

The author presents a round-up of modern instruments used in air pollution control and for the fast detection and measurement of contaminants from industrial processes. Instruments are divided into 2 groups, collection devices and indicating devices. The electrostatic precipitator, electrostatic sampler, fixed flow air sampler, cascade impactor and thermal precipitator are collection instruments which can be employed to collect samples of airborne dusts and aerosols for analysis and identification. A portable hand operated midget impinger may be used for dust sampling in any location. It is also used for dust survey work and by industrial plants for in-plant sampling. Direct measuring instruments are of 3 categories: Glass Tube Detectors; Filter Reagent Samplers; and Hot-Wire Catalytic Combustible Gas Indicators; these are adaptable for general industrial testing. Tube type detectors are those in which the gas of interest reacts with a chemically impregnated gel to give either a length of stain or color change. The tubes are sensitive to carbon monoxide concentrations from 0.001 to 0.10% by volume. Stain type detectors are made for hydrogen sulfide, chlorine, mercury vapor, halogenated hydrocarbons, nitrogen dioxide and others. -- Public Health Eng. Absts.

1003 Developments in the Use of the A.I.S.I. Automatic Smoke Sampler. J. C. Park, D. M. Keagy and W. W. Stalker. J. Air Pollution Control Assn. 10, 303-306 (Aug. 1960).

Eleven American Iron and Steel Institute (A.I.S.I.) automatic smoke samplers are in continuous and simultaneous operation as part of a year-long Public Health Service field study in Nashville, Tennessee. The heavy load of reading so many tapes prompted the development

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