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ledge of radioactivity levels present before operation begins. A pre-operational survey of environmental radioactivity has been in progress for 2 years in the vicinity of the power reactor being constructed in Southeastern Michigan by the Power Reactor Development Company. Environmental radioactivity has demonstrated a general increase throughout 1958, continuing into the spring of 1959, and a general decrease thereafter throughout 1959.

-- Nuclear Sci. Abats.

ENVIRONMENTAL MEASUREMENTS

- 136 Improved Smoke Density Recorder. R. Lambiv.
J. Sci. Instr. 37, 144-146 (Apr. 1960).

A smoke density recorder is described in which high stability is achieved by the use of stabilized circuits for the light source and head amplifier. A method of calibration by means of optical density screens standardized for the type of photocell used is given. Drift caused by deposition of smoke on the optical system was overcome by the use of hot air jets. During extended tests on laboratory and industrial installations, stable operation with negligible drift was obtained.

-- APCA Abats.

- 137 A New Gas Absorption Device, Its Application to Titrimetric and Conductometric Micro Determination of Carbon Dioxide in Air. Ib Holm-Jensen.
Anal. Chim. Acta 23, 13-27 (July 1960).

A gas absorption device is described which is capable of absorbing gases from a stream of air (up to 15 ml./min.) in a small volume (about 0.5 ml.) of absorbing fluid. The absorbing area of contact between air and liquid is about 150 sq. cm. The apparatus is provided with electrodes for measuring the electrolytic conductivity of the absorbing liquid. It can be used in the determination of carbon dioxide in air by means of conductometric titrations; visual titrations with air by means of thymolphthalein are also possible. No back-titration of the strontium hydroxide is needed.

-- Public Health Eng. Abats.

PREVENTIVE ENGINEERING

- 138 Solving Your Air Pollution Problem. G. Gould. Power 104, 69-71 (July 1960).

Typical partial analyses of coals, oil and gas are given. Pollutants accompanying combustion include smoke and fumes, fly ash, various gases, organic vapors and acid mists. The 2 basic techniques for air pollution abatement are to minimize formation of these and to minimize those formed. Variation of heating values in coals is significant—in gas and oil it is of much less importance. Sulfur in coal occurs as iron sulfide and organic forms—in oil as mercaptans, sulfides and disulfides. Sulfur dioxide is obnoxious and can be detected in concentrations as low as 1 ppm. Sulfur trioxide reacts with moisture to form sulfuric acid. This is irritating to the respiratory system in concentrations of 3 ppm. Some relationship exists between volatile content of fuel and smoke. Rapid and complete combustion of fuel is essential. High ash content increases the air pollution possibilities of the fuel. Dust from coal storage and handling is a problem. Wetting or treating with oil will assist in controlling this nuisance. High moisture content in coal can cause heavy smoking.

-- Public Health Eng. Abats.