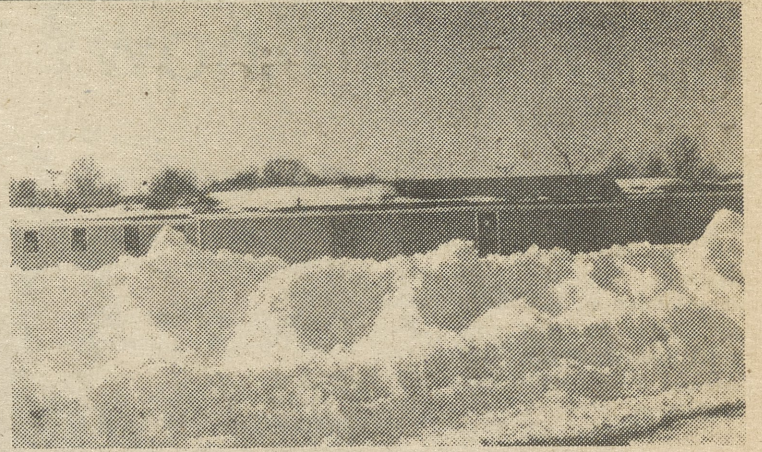


BLIZZARD OF '79
The Delaware Valley area was covered with a near-record snow fall on February 19 which forced the closing of the Delco Campus.
(Photos by Donna Curran)



Mobile Radioisotope Laboratory On Campus

The Mobile Radioisotope Laboratory (MRL), which is operated by the Nuclear Engineering Department of The Pennsylvania State University, has as its primary objective the familiarization of secondary school students and teachers with the concepts of nuclear science by providing a "hands-on" laboratory program utilizing a mobile radioisotope laboratory provided by the Department of Energy. Its secondary objective is the introduction to the general public to the concepts of nuclear science through a display of educational programs and techniques.

During the school year the MRL travels to six different locations and provides public

and/or parochial secondary students with 15 hours of formal instruction and 15 hours of laboratory work. In addition local secondary teachers receive 18 hours of instruction and/or laboratory work.

During their laboratory sessions, the students and teachers will use the Geiger counter, which is the most used instrument for the detection of radiation, as well as single and multichannel analyzers with which they can detect and observe the gamma-ray spectrum of a radioisotope. In addition to these the MRL contains a neutron howitzer to be used in a neutron activation experiment.

Experiments that the students and teachers will perform include: (A) the operating characteristics of Geiger-Mueller tube, (B) the determination of resolving time for a GM tube and the study of background radiation, (C) the statistics of counting, (D) the characteristics of alpha, beta and gamma radiation, (E) beta-ray backscattering, (F) the determination of the half-life of a radioisotope, (G) depth and density gauging, (H) the identification of a gamma-ray source and neutron activation to produce a radioisotope with a complex decay scheme.

In the lectures the topics covered are: (A) health physics, (B) nuclear terms and symbols,

(C) types of nuclear particles and radiations, (D) atomic mass and energy and interconversion with the use of Einstein's equation - $E = mc^2$ (E) the types of nuclear decay, (F) the interaction of radiation with matter, (G) radiation detectors, (H) sources of radionuclides and (I) the applications of radiation and radioactive materials.

During the laboratory sessions the students and teachers work with actual radioisotopes which are commercially available to schools and contain less radioactivity than is in older radium dial wristwatches.

Administration of the program is conducted by Mr. William Murray, Science-Mathematics

Specialist of the Northeastern Intermediate Unit #19 located in Scranton. The PSU Director is Dr. Warren F. Witzig, Chairman of Nuclear Engineering Department, and the PSU administrator is Mr. John McKee.

The present instructor (since September 1977) is Mr. Joseph Bonner, a staff member of the Nuclear Engineering Department at PSU. Mr. Bonner is a graduate of St. James High School (1955), the University of Villanova (B.S. in physics, 1964) and Franklin and Marshall College (M.S. in physics, 1973).

The MRL is on location at the Delco Campus from March 19 to April 30. An open house for campus students is planned.

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