Further Study

Three portable HPICs will be used during the next LAMPF operating cycle. The instruments will be placed in the directional sectors of north, north-northwest, and northeast from the LAMPF stack toward East Gate. A TLD will also be placed by each HPIC. It is hoped that the dimensions of the plume can be better defined over short time periods. Also, the short-term model's accuracy and precision can be tested further. Finally, comparisons of HPIC data with TLD data of model predictions will be made.

DELTA COUNT-RATE MONITORING S`

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Funding Organization: Los Alamos National Laboratory

Detection of radioactive contaminants in the environment often requires surveying large areas. A need for a more effective way to rapidly search for gamma-ray contamination over large areas led to the design and construction of a very sensitive gamma detection system.[1] This system alerts the user to small changes in the count rate, or delta, which can locate areas of potential radioactive contamination.

Environmental surveys are frequently done in areas with rugged off-road conditions in adverse weather. For this reason, the delta count-rate monitoring system was installed in a four-wheel-drive van instrumented for environmental surveillance and accident response.

The system consists of four main sections: (1) two scintillation detectors, (2) high-voltage power supply amplifier and single-channel analyzer, (3) delta count-rate monitor, and (4) count-rate meter and recorder. The van's 6.5-kW generator powers the standard nuclear instrument modular design system. The two detectors are mounted in the rear corners of the van and can be run singly or jointly. A solid-state bar-graph count-rate meter mounted on the dashboard can be read easily by both the driver and passenger. Mounted just to the right of the driver is a solid-state strip chart recorder, which shows trends and provides a permanent record of the data. An audible alarm is sounded at the delta monitor and at the dashboard count-rate meter if a detected radiation level exceeds the set background level by a predetermined amount.

Reference

1. D. Van Etten and W. Olsen, "Delta-Count Rate-Monitoring System," Los Alamos National Laboratory report LA-9855-M (September 1983).

SAMPLING AND INSTRUMENTATION REQUIREMENTS FOR LONG-RANGE D&D ACTIVITIES AT INEL

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Assistance was requested to help determine sampling and instrumentation requirements for the long-range decontamination and decommissioning activities at the Idaho National Engineering Laboratory. Through a combination of literature review, visits to other DOE contractors, and a