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HEALTH INSTRUMENT GROUP - CMR-12

September 3, 1947

Subject: Progress Report on Project Authorization CMR-12-4, Alpha Monitoring Instrument (Poppy) for Salvage

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A non-portable poppy type alpha survey instrument was needed for monitoring project salvage material. An instrument to fit the specifications was designed and built.

This instrument receives its total high and low voltage power supply from a 110 volt A.C. line. The amplifier is a radio frequency type, the signal being superimposed upon a constant frequency, constant amplitude carrier wave. The signal is detected, and used to actuate a trigger tube which in turn operates an audio system and an integrating circuit.

The integrating circuit consists of a rectifier tube with a milli-ammeter in the cathode paralleled with a high capacitance condenser. The instrument is provided with two scale ranges. One registers from 0 - 3000 alpha counts per minute, and the other from 0 - 30,000 alpha/counts per minute. Each of these two scales can be adjusted individually.

The high voltage necessary to operate the chamber in the proportional range is obtained from a 60 cycle A.C. power supply. This is a standard regulated power supply, capable of delivering well regulated stable voltage over a range of 1500 volts to 2500 volts.

Three types of chambers are used with this instrument. A 4" x 6" chamber is used for monitoring large surfaces, and a pencil type chamber and a bent pencil chamber is used for small articles. The instrument is housed in a standard single panel rack.

A more detailed report on this instrument will be submitted in the near future. This instrument was completed March 16, 1947.

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