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WANL-TME-234

(Serial: CD-1147)

December 21, 1962

**ACTION ITEM NO. 358; REPLY TO AEROJET RE:
REQUEST FOR DEFINITION OF TERMS USED ON THE
NEUTRON DETECTOR DATA SHEETS IN THE INSTRUMENT DATA BOOK**

With reference to Action Item No. 358 of the Minutes of the Technical Direction Meeting at WANL on November 1-2, 1962, the following list of definitions is provided.

DEFINITIONS OF TERMS FOR NEUTRON DETECTOR SPECIFICATIONS

Neutron Sensitivity: Either amperes/nv for an ionization chamber or pulses/nv for a fission counter or proportional counter, where $nv = \int_E n(E) \sqrt{dE}$.

Pulse Rise Time: Electron collection time, measured from 10% to 90% of pulse height.

Current Per Pulse: Minimum charge (coulombs) per fission event.

Fill gas and pressure: Gaseous elements used in the detector and the absolute pressure, psia.

Capacitance: Interelectrode capacitance and signal electrode to ground capacitance.

Vibration Noise: Noise generated in a polarized detector as a function of vibration.

Temperature Minimum: Lowest temperature that can be maintained without liquifying the gases in the detector.

Temperature Maximum: Temperature at which seals will rupture or the electrical leakage resistance becomes too low.

Insulation Resistance: Electrical resistance of signal lead to ground at stated temperatures (25°C., 100°C., 250°C., 400°C.).

Polarizing Voltage: Applied voltage for proper operation of the detector.

Neutron Activation-Maximum: Gamma and beta internal dose rates due to a given integrated neutron flux.

Breakdown Voltage: The applied voltage at which electron multiplication begins between the electrodes.

Gamma Sensitivity: Amperes/Roentgen/hr for an ionization chamber.

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Sensitive Coating: The isotope used to obtain charged particles from neutron interactions.

Connector: Type of connector for applied external circuitry.

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Reactor Instrumentation
Control Development

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