

# ORNL INSTRUMENT EVALUATION SUMMARY

## Canberra Dineutron

**Description:** The Canberra Dineutron is a self-contained, portable dose-rate instrument for neutron dosimetry.

**Ranges Tested:** N/A

**Report Date:** June 11, 2003

**General Comments:**

1. Confidence intervals used to ascertain whether results are conclusive or inconclusive are determined using the 0.95 quantile of the student's t distribution (95% confidence interval).

### RADIATION RESPONSE

**Probe Surface Sensitivity:** N/A.

**Energy Response:** N/A

**Response Linearity:** N/A

**Radiological Calibration Observations:** The instrument was exposed to a moderated and unmoderated <sup>252</sup>Cf source. No unacceptable responses were noted in either test.

### ELECTRONIC and MECHANICAL REQUIREMENTS and TESTS

**Line Noise:** N/A

**Power Line Variations:** N/A

**Conducted Radio Frequency:** N/A

### INTERFERING RESPONSES TEST RESULTS

**Radio Frequency/Microwave:** Not performed

**Electric Fields:** Not performed.

**Magnetic Fields:** Not performed.

**Interfering Ionizing Radiations:** Not performed.

## **ENVIRONMENTAL FACTORS**

**Temperature:** Susceptibilities were observed over the temperature test range of -10 to 50 °C (+14 to +122 °F). Specific results are available in the test report.

**Temperature Shock:** Susceptibilities were observed when exposed to rapid temperature changes from 22 to -10, -10 to 22, 22 to 50, and 50 to 22 (in °C). Each change was performed within five minutes. Specific results are available in the test report.

**Humidity:** No susceptibilities were observed when exposed to a relative humidity level of 95% (non-condensing) for 24 hours.

**Vibration:** Not performed.