

# ORNL INSTRUMENT EVALUATION SUMMARY

## Eberline ESM Teleprobe FH40G-L

**Description:** The Eberline ESM Teleprobe FH40G-L is a gamma/neutron detector extendable dose rate instrument.

**Ranges Tested:** N/A

**Report Date:** June 12, 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).
2. The instrument was evaluated in the field. User comments were reported.

### RADIATION RESPONSE

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

**Energy Response:** Performed as part of the calibration process.

**Response Linearity:** Performed as part of the calibration process.

### 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:** No susceptibilities were observed when exposed to an RF scan from 100 kHz to 1000 MHz at  $20 \pm 2$  volts/meter amplitude modulated with 1 kHz at 80%.

**Electric Fields:** Not performed.

**Magnetic Fields:** Not performed.

**Interfering Ionizing Radiations:** Not performed.

## **ENVIRONMENTAL FACTORS**

**Temperature:** No susceptibilities were observed over the temperature test range of -10 to 50 °C (+14 to +122 °F).

**Temperature Shock:** No unacceptable responses 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.

**Humidity:** Susceptibilities were observed when exposed to a relative humidity level of 95% (non-condensing) for 24 hours. Specific results are available in the test report.

**Vibration:** Not performed.