

ORNL INSTRUMENT EVALUATION SUMMARY

Thermo Eberline Alpha-7A Air Monitor

Description: The Thermo Eberline Alpha-7A is a continuous air monitor that measures alpha-emitting isotopes.

Ranges Tested: N/A

Report Date: July 23, 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. Observation of PU-239 concentration, mev spectrum, alarm & display were included in the acceptance criteria for these tests.

RADIATION RESPONSE

Probe Surface Sensitivity: N/A.

Energy Response: N/A

Response Linearity: N/A

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: Susceptibilities were observed when exposed to an RF scan from 25 MHz to 1000 MHz at 20 ± 2 volts/meter amplitude modulated with 1 kHz at 80%. Specific results are in the test report.

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: Not performed.

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

Vibration: Not performed.