

ULTRA LOW LEVEL MONITOR

PURPOSE

This wide range tritium monitoring station is designed to meet monitoring requirements established by NESHAP and EPA 40CFR or for DOE establishments for the determination of ultra low levels of airborne tritium.

SENSITIVITY AND RANGE

Limits of resolution attained by this instrument is 10^{-9} Ci/m³ or even lower. Using linear as well as proportional chamber technology, the upper limit of useful measurement can be extended to 10 Ci/m³ or higher.

DISCRIMINATION

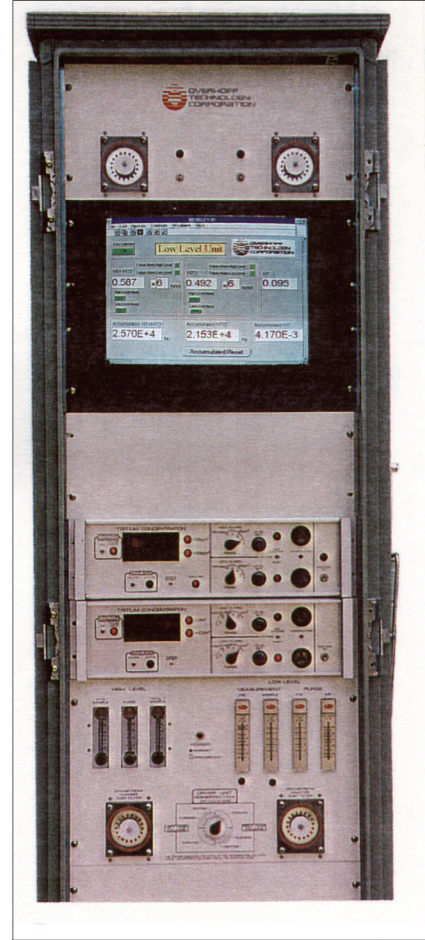
Separate measurements for the elemental as well as the oxide forms of tritium are provided. The instrument discriminates against all other airborne radioactive materials.

COMPUTER DATA ACQUISITION AND DISPLAY

A user friendly icon based P.C. system is used for the retention and display of all measurement, supervisory and alarm status information.

METHOD

Two high level linear ionization chambers and two low level proportional counters are used to span the total range of measurement. One pair of high and low level units are used to measure total tritium concentration and the other pair is used to measure the elemental form only. An automatically regenerating drying systems is used for separation of the chemical forms.



MODEL 93 -WR - T - HTO

SEPARATE SAMPLE LINES FOR ELEMENTAL AND OXIDE FORMS, ULTRA HIGH SENSITIVITY TO 10^{-9} Ci/m³, WIDE RANGE TO 10 Ci/m³ STATION BY USING BOTH PROPORTIONAL COUNTERS AND LINEAR IONIZATION CHAMBERS

TECHNICAL SPECIFICATIONS SHORT FORM

Range	0 - 10 Ci/m ³
Sensitivity	1 x 10 ⁻⁹ Ci/m ³
Display measurements,	19" color video terminal showing all current and trend data for and supervisory information.
Accuracy	±10 %, and/or 10 ⁻⁹ Ci/m ³
Response Rate 30 second	Varies with measurement level, up to minutes at very low levels to 1 at the upper end of the range
Alarms	Set point alarms for each channel, supervisory alarms for sample flow counter for flow failure
High/Low Change Over	Automatic changeover to prevent contamination of the low level measurement system
Volumes of Chambers	Linear: 2 liters nominal Proportional: 4 liters nominal
Counter Gas Flow	Adjustable from 0.1 lpm to 1 lpm
Enclosure	Standard 19" relay rack NEMA 12 enclosure, 72" high



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