



NexTritium-H2O Electronics



Two Pairs of Matched Photo Multiplier Tubes

## Features

- Low Level Tritium
- Sensitive to 0.2  $\mu\text{Ci/l}$  Tritium
- Real Time – Automatic
- Excellent Long Term Stability
- Continuous Monitoring
- Not Influenced by other Nuclides
- No Liquid Scintillant Required
- Easy Calibration
- New Statistical Significance Display
- Rugged
- Mounted: Caster, Skid, or Table Top
- **IP42**

## Application

- Meets EPA Drinking Water Levels
- Monitor Leaks in Candu Type Reactors Monitor Tritium
- Contamination in Ground Water
- Monitor Laboratory or Plant Liquid Waste Stream

# Automated Low Level Tritium In Water Monitor Real Time Continuous Model - NexTritium-H<sub>2</sub>O

## Description

This system consists of a light tight detector assembly which is interfaced with the sample via male 1/8" pipe fittings with the readout and processor assembly via two BNC connectors.

The sample is passed through a filter and thence to the detector assembly, where it is viewed by two pairs of matched photo multiplier tubes.


The table top or rack mounted processor and display portion of this system conditions and analyzes the output from the photo multiplier tubes by pulse height and validated by a coincidence circuit, thereby permitting the system to eliminate counting most background (noise) counts.

**Meets CFR/NRC Regulation of 1.0  $\mu\text{Ci/L}$  (H-3)  
NexTritium-H<sub>2</sub>O includes unique statistical  
Significance Display.**

- This function rates strength of the data preventing most false positives or negatives:
  - Significance: **High, Low, or Not Significant**



**TECHNICAL ASSOCIATES  
OVERHOFF TECHNOLOGY**

DIVISIONS OF  
 US NUCLEAR CORP

7051 ETON AVENUE, CANOGA PARK, CA 91303 | 818-883-7043 | F: 818-883-6103  
SALES@TECH-ASSOCIATES.COM | TECH-ASSOCIATES.COM | USNUCLEAR.COM

# Automated Low Level Tritium In Water Monitor Real Time Continuous

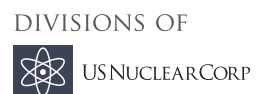
## Model - NexTritium-H<sub>2</sub>O

### Unique Nextritium-H<sub>2</sub>O Detector Characteristics

FEATURE	PURPOSE
<b>Ultra High Sensitivity Achieved Through the Following Physical Features:</b>	
Custom Made Anthracene Scintillation Crystals in Technical Associates' Laboratories	High Beta Sensitivity
Two (2) 5" Diameter Optical Sensor Arrays (Totaling 200 cm <sup>2</sup> ) Sensitive Area	High Count Rate
Special Data Analysis	As Described in Sensitivity Chart
Guard Detector	Cosmic Ray Rejection
Four (4) Photo Sensors	True Tritium Pulse Validation
Five (5) Flow Channels	Assures Smooth Continuous Flow
Temperature Controlled Detector Cooler	Long Term Accurate Signal Stability
Steel, Bronze, and Lead Shielding	Gamma Ray Background Rejection
Real-Time Temperature Compensation Sensor	Improved Sensitivity and Stability



**TECHNICAL ASSOCIATES  
OVERHOFF TECHNOLOGY**



7051 ETON AVENUE, CANOGA PARK, CA 91303 | 818-883-7043 | F: 818-883-6103  
 SALES@TECH-ASSOCIATES.COM | TECH-ASSOCIATES.COM | USNUCLEAR.COM

# Automated Low Level Tritium In Water Monitor Real Time Continuous

## Model - NexTritium-H<sub>2</sub>O

<b>TRITIUM SENSITIVITY</b>		
<b><u>PicoCuries</u></b>	<b><u>MicroCuries</u></b>	<b>Time to Count</b>
2,000,000 pCi/l	2.0 µCi/l	2 minutes
500,000 pCi/l	0.5 µCi/l	20 minutes
200,000 pCi/l	0.2 µCi/l	3 hours
100,000 pCi/l	0.1 µCi/l	24 hours
20,000 pCi/l	0.02 µCi/l	7 days
10,000 pCi/l	0.01 µCi/l	14 days
<b>Display updates every 2 minutes</b>		

### Flow Chart

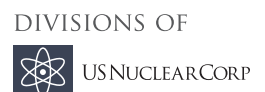
1. Chiller
2. Refrigerated Detector and Amplifiers to Sustain Constant Low Temperature
3. Flow Cell – 5" Diameter
4. Photo Multiplier Tube
5. Guard Detector

### Features of Sensor System

- Real-Time Temperature Detection and Correction
- Real-Time Dynamic Gamma Background Detector



**TECHNICAL ASSOCIATES  
OVERHOFF TECHNOLOGY**



7051 ETON AVENUE, CANOGA PARK, CA 91303 | 818-883-7043 | F: 818-883-6103  
 SALES@TECH-ASSOCIATES.COM | TECH-ASSOCIATES.COM | USNUCLEAR.COM

# Automated Low Level Tritium In Water Monitor Real Time Continuous

## Model - NexTritium-H<sub>2</sub>O

### Specifications:

<b>Display Update:</b>	Every 2 minutes
<b>Tritium Sensitivity:</b>	See Tritium Sensitivity Chart above
<b>Range:</b>	20,000 - 20,000,000 pCi/liter <b>Optional:</b> Other ranges higher or lower
<b>Flow Rate:</b>	Minimum -1 ml/min
<b>Maximum:</b>	100 ml/min
<b>Sample Temperature: Standard:</b>	< 80° F (liquid); (Optional - to 115° F)
<b>Ambient Temperature:</b>	Detector - < 80° F (Optional - to 115° F) Readout - < 115° F
<b>Lead Shielding:</b>	1" thick is standard 2" thick is Optional

### Weight and Dimensions:

<b>Dimensions:</b>	Electronics:	23" H x 16" L x 21" W
	Detector:	12" H x 10" D x 27" W
	Pump:	10" H x 10" D x 6" W
<b>Weight (Standard Unit):</b>	Detector Housing:	35 lbs (Unshielded)
	Electronics Housing:	40 lbs
	Pump:	8 lbs
<b>Shipping Weight:</b>		90 lbs

» Weight and Dimensions shown above do not include Sample Chiller and Refrigeration Unit.

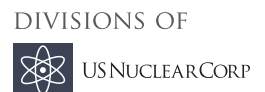
<b>Optional Shielding:</b>	65 lbs
<b>Display:</b>	5" color monitor

### OPTIONS

- » Data Archive and Data Retrieval; records readings for up to 5 years
- » Remote readout via Ethernet
- » Network reporting and communication via the ORO overdrive network
- » "Deionizer and Filter" specification (**SSS-33M8/D** and **SSS-33M8/F**)



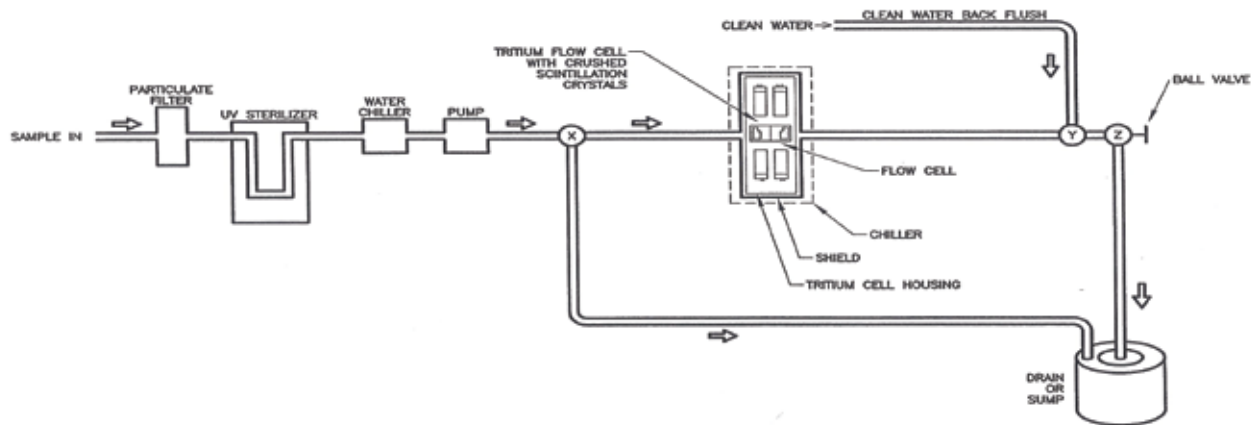
TECHNICAL ASSOCIATES  
OVERHOFF TECHNOLOGY



7051 ETON AVENUE, CANOGA PARK, CA 91303 | 818-883-7043 | F: 818-883-6103  
SALES@TECH-ASSOCIATES.COM | TECH-ASSOCIATES.COM | USNUCLEAR.COM

# Automated Low Level Tritium In Water Monitor Real Time Continuous


## Model - NexTritium-H<sub>2</sub>O



Please Contact Us if You Have Tritium in an Oil or Gaseous Situation.  
We Will Advise and/or Quote on a Suitable System to Obtain Your Objective.



**TECHNICAL ASSOCIATES**  
**OVERHOFF TECHNOLOGY**

DIVISIONS OF  
 USNUCLEARCORP

7051 ETON AVENUE, CANOGA PARK, CA 91303 | 818-883-7043 | F: 818-883-6103  
SALES@TECH-ASSOCIATES.COM | TECH-ASSOCIATES.COM | USNUCLEAR.COM