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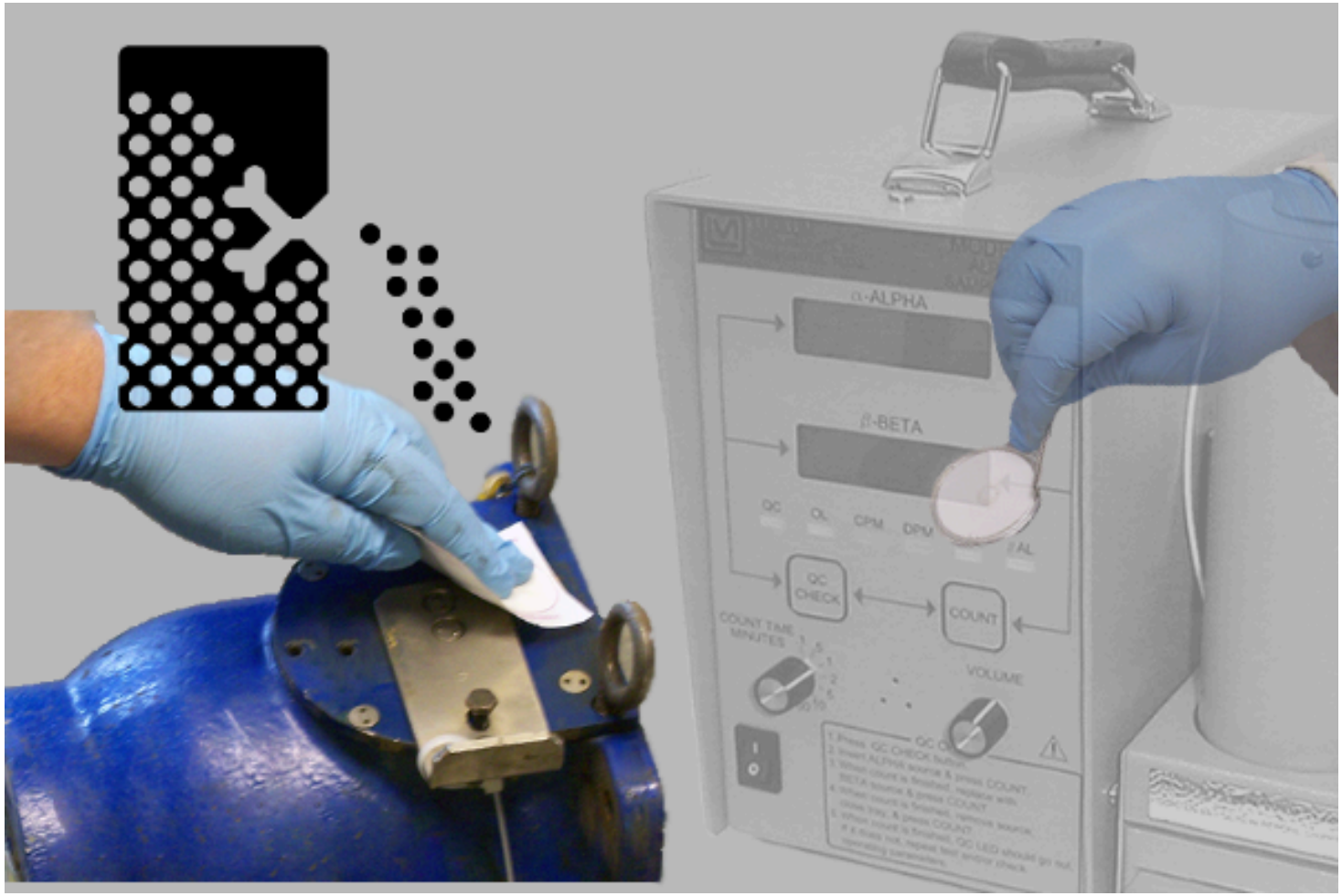
Leak Testing Gauges



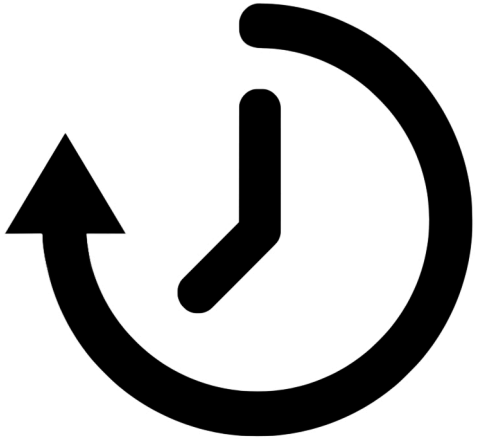
Regulatory Requirements

The regulations covering leak testing can be found in:

- 10 CFR 20.1501
- 10 CFR 20.2103
- 10 CFR 30.50(c)(2)
- 10 CFR 30.53

It's always advisable to have the latest copy of all pertinent regulations on hand at your facility.

Leak Test Frequency



- Frequency requirements are identified in your Radioactive Material License (RAM)
- Intervals are typically those specified on the nuclear gauge SSD registration certificate
- Typical cycles are every six months

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Leak Test Process

Leak testing is a multi-step process that includes:

1. Acquiring the samples, also called smears and wipes
2. Analyzing the samples
3. Reviewing the test analysis results report
4. Taking immediate remedial actions if the report indicates a leaking source
5. Storing the analysis reports

Who can Perform the Leak Tests?

- Licensees have the option to either hire a licensed entity like Radiation Solutions to acquire the test samples or acquire it themselves as this type of activity falls under routine maintenance.
- Sample analysis, must however be performed by an entity possessing low level counting instrumentation and accompanying procedures and be licensed by either the NRC or Agreement State. While most fixed gauge operators are licensed to acquire the test samples, they are not licensed or allowed to perform the analysis.
- NUREG 1556 Vol 4, Appendix I presents criteria that a leak test program requires to qualify for inhouse leak test analysis.

Obtaining Leak Test Demo

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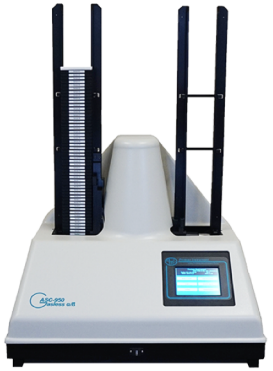
Leak Test Sample Analysis

PASS: < 185 becquerels [0.005 microcuries]

FAIL: > 185 becquerels [0.005 microcuries]



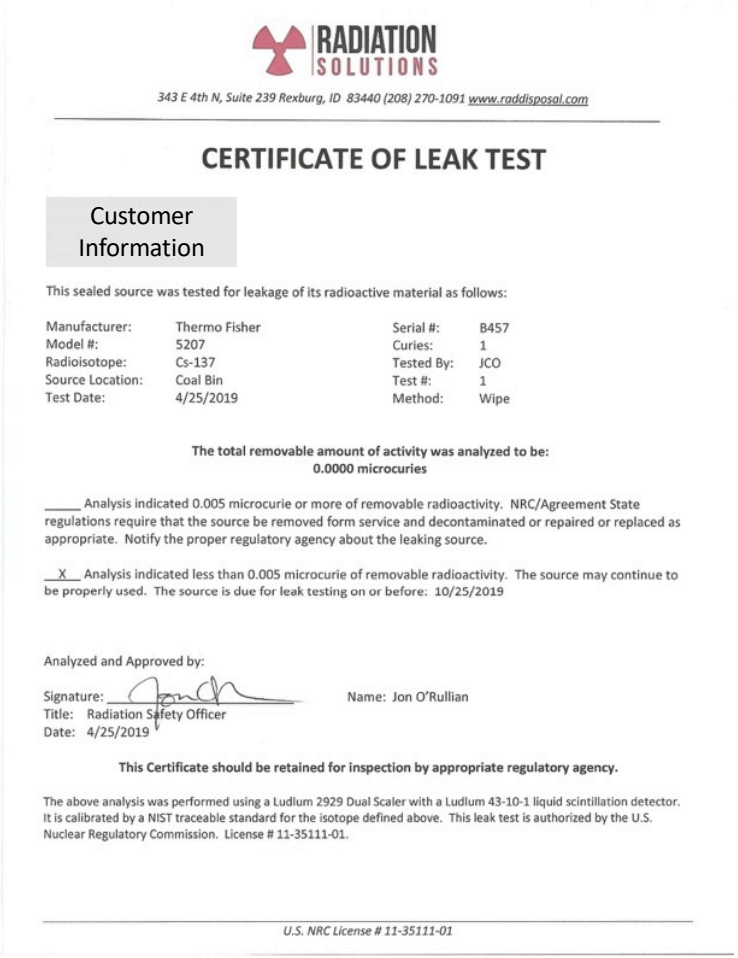
Leak Test Certificate

Specific Nuclear Gauge Info →

Analysis Test Result →

Authorization →

Lab Test Equipment & License Number →



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343 E 4th N, Suite 239 Rexburg, ID 83440 (208) 270-1091 www.raddisposal.com

CERTIFICATE OF LEAK TEST

Customer Information

This sealed source was tested for leakage of its radioactive material as follows:

Manufacturer:	Thermo Fisher	Serial #:	B457
Model #:	5207	Curies:	1
Radioisotope:	Cs-137	Tested By:	JCO
Source Location:	Coal Bin	Test #:	1
Test Date:	4/25/2019	Method:	Wipe

The total removable amount of activity was analyzed to be: 0.0000 microcuries

____ Analysis indicated 0.005 microcurie or more of removable radioactivity. NRC/Agreement State regulations require that the source be removed form service and decontaminated or repaired or replaced as appropriate. Notify the proper regulatory agency about the leaking source.

__X__ Analysis indicated less than 0.005 microcurie of removable radioactivity. The source may continue to be properly used. The source is due for leak testing on or before: 10/25/2019

Analyzed and Approved by:

Signature: _____ Name: Jon O'Rullian
Title: Radiation Safety Officer
Date: 4/25/2019

This Certificate should be retained for inspection by appropriate regulatory agency.

The above analysis was performed using a Ludlum 2929 Dual Scaler with a Ludlum 43-10-1 liquid scintillation detector. It is calibrated by a NIST traceable standard for the isotope defined above. This leak test is authorized by the U.S. Nuclear Regulatory Commission. License # 11-35111-01.

U.S. NRC License # 11-35111-01

Record Keeping

Licensees must maintain records of leak test results for three years or as otherwise stated in the site license.

Having all reports well organized will be key to a better outcome if and when you are inspected by your regulating body.

This completes this section.
Proceed to the next one when you are ready.

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