

Portable Gauges
Inspection Checklist

Attachment 2.6-3 Vermont Department of Health Radioactive Materials Program Inspection Checklist Portable Gauges	
Licensee:	License No.:
Licensee Contact: Telephone Number: Email Address: Last Inspection Date: Priority:	
Location (Authorized Site):	Inspection Date:
Inspector:	
Inspection Procedure(s) used: 83822, 87124, 86730 , 86740, 87137	
Inspection Objectives: <ul style="list-style-type: none"> To determine if licensed activities are being conducted in a manner that will protect the health and safety of workers and the general public. To determine if licensed activities are being conducted in accordance with Vermont Department of Health regulations <u>and requirements.</u> 	
Focus Elements: <ol style="list-style-type: none"> Security and Control of Licensed Materials: <u>The licensee should control access to and prevent loss of licensed material so as to limit radiation exposure to workers and members of the public to values below 10 CFR Part 20 limits.</u> Shielding of Licensed Materials: <u>The licensee should maintain shielding of licensed materials in a manner consistent with operating procedures and design and performance criteria for devices and equipment.</u> Comprehensive Safety Measures: <u>The licensee should implement comprehensive safety measures to limit other hazards from compromising the safe use and storage of licensed material.</u> Radiation Dosimetry Programs: <u>The licensee should implement a radiation dosimetry program to accurately measure and record radiation doses received by workers or members of the public as a result of licensed operations.</u> Radiation Instrumentation and Surveys: <u>The licensee should provide radiation instrumentation in sufficient number, condition, and location to accurately monitor radiation levels in areas where licensed material is used and stored.</u> Radiation Safety Training and Practices: <u>The licensee should ensure that workers are:</u> <ol style="list-style-type: none"> <u>knowledgeable of radiation uses and safety practices;</u> <u>skilled in radiation safety practices under normal and accident conditions; and,</u> <u>empowered to implement the radiation safety program.</u> Management Oversight and Program Scope: <u>The licensee's management system should be appropriate for the scope of use and should ensure:</u> <ol style="list-style-type: none"> <u>awareness of the radiation protection program;</u> <u>that audits for ALARA practices are performed; and,</u> <u>that assessments of past performance, present conditions and future needs are</u> 	

Commented [MK1]: Make sure you cite the correct regulation.

For portable gauges, you have to include 10 CFR 30.34(i) for security. If you've seen the NRC event reports, we get a lot of lost portable gauge reports...they fall off of trucks and get stolen from vehicles. So this is important. See edits

Also they get run over by heavy construction equipment. This should be included in your list of incidents. See edits

"Operating and Emergency Procedures" have changed to "Operating, Emergency and Security Procedures" in the latest NUREG-1556 Series revisions. Please update to include security.

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performed and that appropriate action is taken when needed.

~~8. Licensed Activities Performed by Contracted Personnel~~

Inspection Site Address (authorized use or storage):		
Type of Inspection: <input type="checkbox"/> Announced <input type="checkbox"/> Unannounced <input type="checkbox"/> Initial <input type="checkbox"/> Routine <input type="checkbox"/> Other	Date of Last Inspection:	
Amendments and Significant Program Changes (Review from last license renewal)		
Amendment #:	Date:	Amendment Item(s):
Note:		
Program Inspection History		
Is this an initial inspection? List previous open items of violations: Have previous violation(s) been properly corrected? If no, list those items not corrected with an explanation. List previous items of recommendations: Did licensee address previous recommendation(s)? If no, explain.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Organization [Note: Request organization chart]		
Briefly describe licensee organizational structure as it pertains to licensed activities. [L/C]		
Organizational structure meets requirements as identified on license. Radiation Safety Officer (RSO) identified on license. [L/C, 10 CFR 30.33(a)(3)] RSO fulfills his/her duties as required. [L/C, 10 CFR 30.33, 10 CFR 20.1101] To whom in the organization does the RSO report? _____ The RSO has sufficient access to licensee's senior management?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No	

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Were deficiencies found in the program following a self-audit? If yes, have the deficiencies been corrected? Note: The inspector should look for repeat deficiencies. Audit records were reviewed by Department inspector. Performance Evaluation Factors (PEF) Note: PEF evaluations are best accomplished by interviewing management, RSO, ANPs , AUs, <u>gauge users</u> , and other licensee personnel. Senior management is involved with radiation safety program and RSO oversight. The RSO has sufficient time to perform his/her radiation safety duties. The licensee has sufficient staffing to support its activities and radiation protection programs. Adequate audits are being implemented.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No																																			
Briefly describe the licensed material program (who, what, when, how.) Note: Request a copy of the licensee's most recent inventory of radioactive material. <u>Compare with license. Ensure use is in accordance with Sealed Source and Device Registration.</u>																																				
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Manufacturer</th> <th style="width: 15%;">Model #</th> <th style="width: 15%;">Serial #</th> <th style="width: 15%;">Isotope</th> <th style="width: 15%;">Date of Last Leak Test</th> <th style="width: 15%;">Receipt Date</th> <th style="width: 15%;">Transfer Date</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>		Manufacturer	Model #	Serial #	Isotope	Date of Last Leak Test	Receipt Date	Transfer Date																												
Manufacturer	Model #	Serial #	Isotope	Date of Last Leak Test	Receipt Date	Transfer Date																														
Does the licensee maintain a utilization log for each gauge? [L/C]		<input type="checkbox"/> Yes <input type="checkbox"/> No																																		
Staff Training Program																																				
Training course for gauge users provided by manufacturer. Does the licensee have an equivalent course approved by the Department? If yes, who is the trainer/instructor? _____ Subjects/topics covered: Did the course exam consist of 25-50 questions/closed book and a passing grade of 70% or above?		<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No																																		
All trained authorized users have been approved in writing by the RSO. [L/C]		<input type="checkbox"/> Yes <input type="checkbox"/> No																																		

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<p>Note: Attach list of authorized users.</p>	
<p>Documentation of training for authorized users is available for Department review.</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>During Department inspection, workers were interviewed and observed using the gauge.</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>If yes, briefly describe who was interviewed and what was observed.</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>Are individuals authorized to perform non-routine maintenance on gauges?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>If yes, list the individual(s) and review the documented training and procedures used.</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>Are there written procedures?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>Does the gauge user know what to do in case of an emergency?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>Do users have a copy of NUREG-1556 Volume 1 Appendix G₂ <u>“Operating, Emergency, and Security Procedures”</u>?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
Posting	
<p>Is posting required? [10 CFR 20.1902]</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>Note: “Caution, Radiation Area” sign is required when exposure levels are greater than 0.05 mSv (5 mR) per hour at 30 cm from the source.</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>“Caution, Radioactive Material” signs are posted where required. [10 CFR 20.1902]</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>Note: The Department recommends that licensees post this sign wherever portable gauges are stored.</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>“Caution, Radiation Area” sign posted where required. [10 CFR 20.1003 & 20.1902]</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>“Notice to Employees” is posted in an appropriate area?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>Rules and license are posted, or a posting indicating where these documents can be reviewed? [10 CFR 19.11]</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
Labeling	
<p>All labels for gauge containers are properly attached and legible. Labels must include symbols, isotope, activity, etc.</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
Leak Tests	
<p>Leak test performed on each sealed source at six-month intervals or as specified in SSD certificate? [10 CFR 31.5]</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>

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Test kit model number: _____ Kit manufacturer: _____	<input type="checkbox"/> Yes <input type="checkbox"/> No
The Department inspector observed a user taking leak test samples?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Records of leak tests are maintained for three years from the date they were created. [10 CFR 31.5]	<input type="checkbox"/> Yes <input type="checkbox"/> No
Leak test results are reported in becquerels or microcuries.	<input type="checkbox"/> Yes <input type="checkbox"/> No
Report of leaking source made since last inspection?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Facilities, Materials, and Equipment	
Describe use and storage area(s).	
Same as described in license? [L/C]	<input type="checkbox"/> Yes <input type="checkbox"/> No
Radioactive material, not in storage, is secured against unauthorized removal from a restricted area. [10 CFR 20.1802]	<input type="checkbox"/> Yes <input type="checkbox"/> No
Adequate controls in place to prevent unauthorized access to radioactive materials that are in storage. [10 CFR 20.1801 and 10 CFR 30.34(i)]	<input type="checkbox"/> Yes <input type="checkbox"/> No
Survey meters Note: Survey instruments are not required for portable gauge licensees. Do portable gauge licensees have a survey meter available for use at each field site?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If no, does the licensee have a procedure which describes how a survey instrument will be transported to a field site if needed?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Surveys are performed to ensure that public dose will not exceed 100 mrem <u>in a /year</u> or 2 mrem in any one hour. [10 CFR 20.1301]	<input type="checkbox"/> Yes <input type="checkbox"/> No
Survey records are kept for three years.	<input type="checkbox"/> Yes <input type="checkbox"/> No
Instruments are calibrated annually. [L/C & 10 CFR 20.1501] Calibration reports are kept for three years.	<input type="checkbox"/> Yes <input type="checkbox"/> No
Radiation Protection Procedures	
Gauges are used in accordance with their SSD certification.	<input type="checkbox"/> Yes <input type="checkbox"/> No
Workers have an adequate understanding of the procedures and the rules for the safe use of radioactive materials.	<input type="checkbox"/> Yes <input type="checkbox"/> No
The user understands the Operating, and Emergency, <u>and Security</u> Procedures Manuals?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Any changes in Operating, and Emergency, <u>and Security</u> Procedures since the last inspection?	<input type="checkbox"/> Yes <input type="checkbox"/> No

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<p style="text-align: center;">Were changes authorized by the Department?</p> <p style="text-align: center;">If yes, describe the changes.</p>	
Receipt and Transfer of Radioactive Materials	
<p>Describe how packages are received, including who receives them.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>The licensee has package receipt procedures in place?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>Transfer of radioactive material is authorized? [10 CFR 30.41]</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>Records of receipts, transfers, and disposals of licensee's radioactive material are maintained for three years? [10 CFR 30.51]</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
Independent Survey Measurements by the Department Inspector	
<p>Inspector performed independent confirmatory measurements.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>If yes, record:</p> <p style="margin-left: 20px;">Highest radiation level in an unrestricted area: _____ mR/hr</p> <p style="margin-left: 20px;">Highest radiation dose rate at 30 cm from a storage container: _____ mR/hr</p> <p style="margin-left: 20px;">Reading at external surface of transport container: _____ mR/hr</p> <p>Inspector's survey instrument(s) used:</p> <p style="margin-left: 20px;">Mfg./Make:</p> <p style="margin-left: 20px;">Model #:</p> <p style="margin-left: 20px;">Serial #:</p> <p style="margin-left: 20px;">Last calibration date:</p> <p>Licensee survey instrument (if available):</p> <p style="margin-left: 20px;">Mfg./Make:</p> <p style="margin-left: 20px;">Model #:</p> <p style="margin-left: 20px;">Serial #:</p> <p style="margin-left: 20px;">Last calibration date:</p> <p>Describe inspector instrument readings as compared to licensee instrument readings.</p>	

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Radiation levels in all unrestricted areas do not exceed 2 mrem in any one hour or 100 mrem <u>in a</u> /year.	<input type="checkbox"/> Yes <input type="checkbox"/> No
Personnel Monitoring	
Is dosimetry provided to workers? <input type="checkbox"/> Film <input type="checkbox"/> TLD <input type="checkbox"/> OSL <input type="checkbox"/> Other Frequency of dosimetry reports? <input type="checkbox"/> Monthly <input type="checkbox"/> Quarterly Dosimetry supplier: _____ Supplier NVLAP certified? [10 CFR 20.1501]	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No
Monitoring results reviewed by licensee: <input type="checkbox"/> Monthly <input type="checkbox"/> Quarterly <input type="checkbox"/> Annually Personnel monitoring records recorded on Department form or equivalent method? Monitoring results are reported in Sv or rem. [10 CFR 20.2101]	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No
Inspector reviewed personnel monitoring records, from _____ to _____ Maximum DDE: _____ mSv _____ mR <input type="checkbox"/> Month <input type="checkbox"/> Quarter <input type="checkbox"/> Annual Did any worker's occupational dose exceed regulatory limits? [10 CFR 20.1201]	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No
Is licensee retaining records of personnel occupational dose? [10 CFR 20.2104] Note: Licensee must keep records until Department terminates license.	<input type="checkbox"/> Yes <input type="checkbox"/> No
Instructions to Workers	
Training is provided to all individuals who are likely to receive an occupational dose >100 mrem/year.	<input type="checkbox"/> Yes <input type="checkbox"/> No
Workers are kept informed of their occupational exposures. [10 CFR 19.12]	<input type="checkbox"/> Yes <input type="checkbox"/> No
Workers are provided refresher training as needed.	<input type="checkbox"/> Yes <input type="checkbox"/> No
Required monitoring records are maintained for three years. [10 CFR 20.2102]	<input type="checkbox"/> Yes <input type="checkbox"/> No
Notifications and Reports	

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Does the licensee provide all gauge users with an annual written report of their radiation exposure? [10 CFR 19.13]	<input type="checkbox"/> Yes <input type="checkbox"/> No
At termination of employment, are exposure records available to workers upon request? [10 CFR 19.13]	<input type="checkbox"/> Yes <input type="checkbox"/> No
Incidents since the last inspection?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Has any licensed material been lost or stolen?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Have there been any occupational overexposures or excessive levels of radiation?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Any other incidents?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe the root cause and corrective actions taken for each incident.	
Have all reportable incidents been reported?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<u>Damaged gauges (e.g., run over by heavy construction equipment)</u>	

Transportation of Radioactive Materials

Does the licensee make shipments of radioactive material?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are security and all applicable regulations followed?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are shipments made through common carriers?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are shipments transported in private vehicles?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are devices packaged and shipped according to regulatory procedures?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Package is labeled properly (e.g., Yellow-II, TI, nuclide, activity, etc.)	<input type="checkbox"/> Yes <input type="checkbox"/> No
All proper shipping requirements are met (shipper's name, RQ, description, hazard class, UN number).	<input type="checkbox"/> Yes <input type="checkbox"/> No
Emergency procedures and response telephone number(s) are available. [49 CFR 172.604]	<input type="checkbox"/> Yes <input type="checkbox"/> No
Shipping papers readily available during transportation? [49 CFR 177.817(e)]	<input type="checkbox"/> Yes <input type="checkbox"/> No
Gauge is properly blocked, braced, and secured in vehicle, with two tangible independent barriers? [49 CFR 173.842(d) & 10 CFR 30.34(i)]	<input type="checkbox"/> Yes <input type="checkbox"/> No
Driver has HAZMAT training? [49 CFR 172.704]	<input type="checkbox"/> Yes <input type="checkbox"/> No

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Security Inspection	
<p>On-site Security Review: If this licensee is authorized for possession of material equal to or exceeding the Category 2 threshold, complete an on-site security review per 10 CFR 37.43.</p> <p>If yes,</p> <p>Licensee Contact Name:</p> <p>Contact Telephone Number:</p> <p>Contact Email Address:</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p>
Summary of Observations, Findings, and Conclusions	
<p>Business Operations:</p> <p>Facility – Visit all storage and use locations identified on the application.</p> <p>Radiation Safety Operations</p> <p>Personnel</p> <p>Overall Assessment Note: If there is not sufficient information to conclude that licensed material will be used as specified on the license, immediately notify Department supervision.</p>	
License Conditions/Tie-downs	
Were all license conditions reviewed?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the licensee’s activities conducted in accordance with license conditions?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Bulletins and Information Notices	
Is the licensee reviewing the Department bulletins and information notices?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Has the licensee taken appropriate action in response to the bulletins and notices?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Exit Meeting at Conclusion of Inspection	
Identify and list the individuals in attendance:	Date Meeting Conducted:
List those issues discussed at the exit meeting.	

Commented [MK2]: Revise section for security in reference to 20.1801 and 1802 as well as 30.34(i). You will not get risk significant quantities for portable gauges.

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Summary of Violations and Recommendations

