

Nuclear Medicine Programs – Diagnostic & Therapeutic  
Inspection Checklist

<b>Attachment 2.6-2 Vermont Department of Health Radioactive Materials Program Inspection Checklist</b>		
<b>Nuclear Medicine Programs – Diagnostic &amp; Therapeutic</b>		
<b>Licensee:</b>		<b>License No.:</b>
<b>Licensee Contact: Telephone Number: Email Address: Last Inspection Date: Priority:</b>		<b>Inspection Date:</b>
<b>Inspector:</b>		
<b>Inspection Procedure(s) used: 83822, 87131, 87132, 86730, 86740</b>		
<b><u>Inspection Objectives:</u></b>		
<ul style="list-style-type: none"> <li>• To determine if licensed activities are being conducted in a manner that will protect the health and safety of workers, the general public, and patients.</li> <li>• To determine if licensed activities are being conducted in accordance with Vermont Department of Health regulations.</li> </ul>		
<b><u>Focus Elements:</u></b>		
<ol style="list-style-type: none"> <li>1. Security and Control of Licensed Materials</li> <li>2. Shielding of Licensed Materials</li> <li>3. Comprehensive Safety Measures</li> <li>4. Radiation Dosimetry Programs</li> <li>5. Radiation Instrumentation and Surveys</li> <li>6. Radiation Safety Training and Practices</li> <li>7. Management Oversight and Program Scope</li> <li>8. Licensed Activities Performed by Contracted Personnel</li> <li>9. Other Medical Uses of byproduct Material or Radiation from Byproduct Material</li> </ol>		
<b>License Number:</b>		
<input type="checkbox"/> In Vitro [10 CFR 31.11] <input type="checkbox"/> Limited Scope [10 CFR 30.33] <input type="checkbox"/> Broad Scope [10 CFR 33.11]		
<b>Type of Inspection:</b>		<b>Date of Last Inspection:</b>
<input type="checkbox"/> Announced <input type="checkbox"/> Unannounced <input type="checkbox"/> Initial <input type="checkbox"/> Routine <input type="checkbox"/> Other:		
<b>Significant Program Changes (Review from last license renewal)</b>		
Amendment #:	Date:	Amendment Item(s):
Notes:		

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<b>Program Inspection History</b>	
<p>Is this an initial inspection?</p> <p>List previous open items of violations:</p> <p>Have previous violation(s) been properly corrected?</p> <p style="padding-left: 20px;">If no, list those items not corrected with an explanation.</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p>
<p>List previous items of recommendations:</p> <p>Did licensee address previous recommendation(s)?</p> <p style="padding-left: 20px;">If no, explain.</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p>
<b>Organization</b> [Note: Request organization chart]	
<p>Briefly describe licensee organizational structure as it pertains to licensed activities. [L/C]</p>	
<p>Organizational structure meets requirements as identified on license.</p> <p>Radiation Safety Officer (RSO) identified on license. [L/C]</p> <p>RSO fulfills his/her duties as required. [L/C, 10 CFR 20.1101, 35.24, &amp; 35.26]</p> <p style="padding-left: 20px;">To whom in the organization does the RSO report? _____</p> <p>The RSO has sufficient access to licensee's senior management?</p> <p>Has there been a change in the RSO? [10 CFR 20.1101, 35.24, &amp; 35.26]</p> <p style="padding-left: 20px;">If yes, has the license been amended? [10 CFR 35.11, 35.12, &amp; 35.15]</p> <p>RSO has sufficient authority to manage the licensee's radiation safety program. [10 CFR 35.24 &amp; 35.26]</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p><b>Note:</b> Confirm through discussions with management and licensee personnel whether changes have occurred in licensee ownership, changes in the RSO authority, or duties that may impact his/her ability to safely conduct the licensee's radiation protection program.</p>	
<b>Scope of Licensee Program</b>	
<p>Check all applicable modalities for this licensee:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> In-Vitro Studies</li> <li><input type="checkbox"/> Nuclear Medicine (Diagnostic)</li> <li><input type="checkbox"/> Nuclear Medicine (Therapeutic)</li> <li><input type="checkbox"/> Mobile Nuclear Medicine</li> <li><input type="checkbox"/> Sealed Sources for Diagnosis</li> <li><input type="checkbox"/> Manual Brachytherapy</li> </ul>	

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- Remote Afterloaders
- Teletherapy
- Gamma Stereotactic Radiosurgery

Describe the licensee’s radioactive materials program(s). **[L/C, NUREG-1556 Volume 9 Appendix C]**  
Note: Include frequency of use, staff size, number of studies, etc. to determine the scope of the program.

Personnel interviewed at licensee address during the inspection (\*\*indicates those in attendance at exit meeting):

- Individual 1:
- Individual 2:
- Individual 3:
- Individual 4:

Are location(s) of use and storage as identified on license? **[L/C]**

Yes  No

Radioactive materials in licensee possession are as indicated on the license. **[L/C]**  
Note: Request a copy of licensee’s most recent inventory of radioactive materials, including sealed sources.

Yes  No

Review Authorized Users (AU)  
Note: Review weekend and emergency schedule AU coverage.

Are the AUs named on the license or authorized by the RSC (broad scope)? **[10 CFR 35.24 Subpart B]**

Yes  No

If no, was an amendment request made within the past 30 days? **[10 CFR 35.14]**

Yes  No  
 N/A

Description of any special programs authorized.

Does the licensee have a radio-pharmacy for in-house use (i.e. PET)?

Yes  No

Does the licensee conduct research on human subjects? **[10 CFR 35.6]**

Yes  No

Is the research authorized by license (specific) or by RSC (broad scope)?

Yes  No

Does the licensee have a written and signed informed consent from research subjects? **[10 CFR 35.6]**

Yes  No

Is an Authorized Nuclear Pharmacist (ANP) named on the license or authorized by the RSC (broad scope)? **[NUREG-1556 Volume 9 Appendix D]** [Note: Optional unless commercial distribution for radiopharmaceuticals.]

Yes  No



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<p>If yes, have the records of the medical event been maintained for three years? <b>[10 CFR 35.3045]</b></p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p>
<b>Mobile Medical Services</b>	
<p>Authorized Uses.</p> <p>Is the licensee authorized for mobile medical services? [Note: If yes, complete this section.]</p> <p>The mobile service is licensed to possess and use:</p> <p><input type="checkbox"/> Unsealed material for uptake, dilution, and excretion studies. <b>[10 CFR 35.100]</b></p> <p><input type="checkbox"/> Unsealed material for imaging and localization studies. <b>[10 CFR 35.200]</b></p> <p><input type="checkbox"/> Mobile Remote Afterloaders. <b>[10 CFR 35.600, 35.604, 35.605, 35.615, 35.632, &amp; 35.633]</b></p> <p><input type="checkbox"/> Calibration and Reference Sources &gt; 30 mCi / source (including Transmission)</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>Scope of Licensee's Program.</p> <p>Is the mobile service responsible for all licensed activity?</p> <p style="padding-left: 20px;">If no, describe the specific responsibilities of the client (e.g., package receipt, surveys, waste disposal.)</p> <p>Is the mobile service authorized for PET? [Note: Mobile PET Inspection Form can be used.]</p> <p>General Requirements.</p> <p>Is a letter on file from each client authorizing the use of radioactive materials at their facility by the mobile service? <b>[10 CFR 35.80(a)(1)]</b></p> <p>Is the radioactive material delivered directly to the mobile nuclear service? <b>[10 CFR 35.80(a)(1)]</b></p> <p style="padding-left: 20px;">If not, does the client have a license authorizing possession of the radioactive material? <b>[10 CFR 35.80(b)]</b></p> <p>Is all radioactive material removed from client's facility before leaving? <b>[L/C]</b></p> <p>Is a calibrated survey meter available for use at the client's facility? <b>[10 CFR 35.80(a)(3)]</b></p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>

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<p>Is a constancy test for the dose calibrator performed before use at each client's address? <b>[10 CFR 35.60 &amp; Reg. Guide 10.8 Appendix C]</b></p> <p>Have surveys been performed of all areas of use before leaving the job site? <b>[10 CFR 35.80]</b></p> <p style="padding-left: 20px;">Contamination surveys performed?</p> <p style="padding-left: 20px;">Area (dose rate) surveys performed?</p> <p style="padding-left: 20px;">Are records maintained for three years? <b>[10 CFR 20.2103]</b></p> <p>Are radioactive materials secured and under constant surveillance during transport and at the location of use? <b>[10 CFR 20.1801 &amp; 20.1802]</b></p> <p>All syringe(s) and vial(s) containing radiopharmaceuticals are labeled? <b>[10 CFR 35.69]</b></p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<b>Management Oversight</b>	
<p>Does management support ALARA? <b>[10 CFR 20.1101 Subpart B]</b></p> <p>Is a Radiation Safety Committee (RSC) required? <b>[10 CFR 35.24 Subpart B (f)]</b> Note: Required for two or more different types of uses.</p> <p>If yes, who is the committee chairperson? _____</p> <p>RSC meets quarterly and records of the meetings are available for review? <b>[L/C]</b> Quorums established at RSC quarterly meetings? <b>[L/C]</b></p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>Are annual radiation safety program reviews (audits) being performed? <b>[10 CFR 20.1101 Subpart B]</b></p> <p>Program reviews conducted by: _____</p> <p>Scope of annual program reviews [Identify areas of the licensee's program reviewed.]</p> <p>Are records being reviewed by management and maintained for three years after the date on which they are made? <b>[10 CFR 20.2102, 35.2024, &amp; 35.2026]</b></p> <p>Were any deficiencies found in the program during a program review?</p> <p style="padding-left: 20px;">If yes, have the deficiencies been corrected? [Note: The inspector should look for repeat deficiencies.]</p> <p>Did Department inspector review records?</p> <p>Performance Evaluation Factors (PEF) [Note: PEF evaluations are best accomplished by interviewing management, RSO, ANP, AU, and other licensee personnel.]</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>

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<p>Senior management is involved with the radiation protection program and RSO oversight.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>The RSO has sufficient time to perform his/her radiation safety duties.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>Licensee has sufficient staffing to support its activities and radiation protection programs.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Facilities</b>	
<p>Has the facility design or the location of material use changed? <b>[L/C]</b></p> <p>[Note: The inspector should request a tour of the licensee’s facilities. Check postings and security of “hot lab,” contamination-monitoring station(s), posted workers’ instructions, etc.]</p> <p>If yes, has the license been amended?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No  <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
<p>Through observations, are the areas for material receipt, use, and storage secured and adequate for licensee’s activities?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>Areas assigned for receipt, use, and waste storage of licensed materials are as identified in the license?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>The “hot lab” is secured at all times when not occupied? <b>[10 CFR 20.1801 Subpart I]</b></p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>Is the “hot lab” properly posted? <b>[10 CFR 20.1902]</b></p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>Molybdenum-99/Technetium-99 (Mo-99/Tc-99) generators are utilized by the licensee? <b>[L/C]</b></p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>If yes, are the generators properly shielded and isolated to keep radiation levels ALARA?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
<p>The concentration for each elute/extraction for Tc-99m does not exceed 0.15 µCi of Mo-99 per mCi of Tc-99m? <b>[10 CFR 35.204(a)(1)]</b></p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>Records of Molybdenum concentration tests are maintained for three years?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>Prior to medical use, the licensee performs daily QC checks on the dose calibrator and has defined procedures if the measured activity exceeds tolerance levels? <b>[10 CFR 35.60 &amp; 35.63]</b></p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>Prior to medical use, the licensee determines and records the activity of each dosage? <b>[10 CFR 35.63]</b></p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>For direct measurements, a calibrated instrument (dose calibrator) is used?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>For decay correction, determination is based on an authorized measurement (e.g., manufacturer or nuclear pharmacy)?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No

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<p>Prior to medical use, the licensee determines and records the activity of each dose?</p> <p style="padding-left: 40px;">For direct measurements, a calibrated instrument (dose calibrator) is used?</p> <p style="padding-left: 40px;">A combination of direct measurements and calculations is used?</p> <p style="padding-left: 40px;">A combination of volumetric measurements and mathematical calculations based on an authorized measurement (e.g., manufacturer or nuclear pharmacy) is used?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
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**Survey Equipment and Instrumentation**

<p>There are sufficient numbers of portable survey meters and fixed monitoring equipment, which conforms to the license description. <b>[L/C]</b></p> <p style="padding-left: 40px;">[Note: Request or make a list of monitoring and survey equipment, including the instrument calibration date, model #, serial #, etc.]</p> <p style="padding-left: 40px;">Annual calibration records are being maintained for each survey meter and fixed monitoring units for three years? <b>[10 CFR 35.61 &amp; 35.2061]</b></p> <p style="padding-left: 40px;">Annual calibrations of licensee’s equipment are being performed.</p> <p style="padding-left: 40px;"> <input type="checkbox"/> In-house  <input type="checkbox"/> Authorized Service Provider (License #: _____)         </p> <p>Has any equipment required for radiation safety been disabled or failed to function as designed?</p> <p style="padding-left: 40px;">[Note: Any of the following equipment is required to prevent exposures or releases; equipment is required to be available and operable; no redundant equipment is available.]</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
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<p><b>Dose Calibrator Calibration [10 CFR 35.61 &amp; 35.2061, L/C]</b></p> <p style="padding-left: 40px;">Constancy checked each day prior to assay of patient dosages (<math>\pm 10\%</math> accuracy.)</p> <p style="padding-left: 80px;">[Note: Dedicated check source for this procedure must be used.]</p> <p style="padding-left: 40px;">Linearity checked at installation and quarterly (<math>\pm 10\%</math> accuracy.)</p> <p style="padding-left: 40px;">Geometry dependence checked at installation (<math>\pm 10\%</math> accuracy.)</p> <p style="padding-left: 80px;">[Note: Must be checked against volumes and configurations (volumes dispensed and syringe sizes).]</p> <p style="padding-left: 40px;">Accuracy checked at installation and yearly (<math>\pm 10\%</math> accuracy.)</p> <p style="padding-left: 80px;">[Note: If the dose calibrator has been repaired, relocated, or adjusted, all appropriate tests listed above must be repeated, and be within <math>\pm 10\%</math> accuracy before putting the calibrator back in use.]</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
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<p>Has the dose calibrator been repaired, relocated, or adjusted?</p> <p style="text-align: center;">If yes, have all appropriate tests listed above been repeated?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p><b>Note:</b> Equipment Safety Component Defects: Procedures should be in place to identify, evaluate, and report equipment safety component defects. Records are kept for five years. Inspector should inquire about basic components of licensee’s equipment where a failure or defect has been found. If these failures or defects are left unattended, they could become substantial safety hazards.</p>	
<p><b>Surveys and Contamination Control</b></p>	
<p>Are surveys being performed for radiation levels and removable contamination? [L/C]</p> <p style="padding-left: 40px;">Are ambient radiation level surveys being performed and records maintained? [10 CFR 20.1501 &amp; 20.2103, L/C]</p> <p style="padding-left: 80px;">Daily (elution, prep, assay, and administration)</p> <p style="padding-left: 80px;">Weekly (use, storage, and waste storage)</p> <p style="padding-left: 80px;">Monthly (Lab areas: small quantities &lt; 200 µCi)</p> <p style="padding-left: 40px;">Are removable contamination surveys being performed and records maintained? [10 CFR 20.1501 &amp; 20.2103, L/C]</p> <p style="padding-left: 80px;">Weekly (elution, prep, assay, and administration)</p> <p style="padding-left: 80px;">Monthly (storage and waste storage)</p> <p style="padding-left: 80px;">Are results reported in dpm per 100 cm<sup>2</sup>?</p> <p style="padding-left: 40px;">List survey meter(s) used to measure ambient radiation levels. [Note: Check meter type, model, serial #, calibration records, check source, and batteries.]</p> <p style="padding-left: 40px;">Identify the instrument(s) used for detecting removable contamination. [Note: Check instrument type, model, serial #, calibration records.]</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>Are corrective actions being implemented and documented when excess radiation or contamination levels are detected?</p> <p style="padding-left: 40px;">Action level for ambient radiation levels established and used? [L/C]</p> <p style="padding-left: 40px;">Appropriate actions taken when the licensee’s ambient radiation action levels have been exceeded?</p> <p style="padding-left: 40px;">Action level for removable surface contamination established and used? [L/C]</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>

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Appropriate actions taken when the licensee’s removable contamination action levels have been exceeded?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Sealed Source and Leak Test [10 CFR 32 &amp; 35]</b>	
Leak test performed on each sealed source at six-month intervals or as specified in SSD Certificate? <b>[10 CFR 32.74(b)(1)]</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No
Leak test performed as described in license? <b>[L/C]</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No
Leak test results show removable contamination to be less than 185 Bq (0.005 µCi). <b>[10 CFR 35.67]</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No
Leak test records are being maintained for three years. <b>[10 CFR 35.2067]</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No
Any source found leaking since last inspection?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If yes, was the source removed from service and the Department notified? <b>[10 CFR 35.67]</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No
Records are available showing receipt, transfer, and disposal of each sealed source. <b>[10 CFR 20.2001 &amp; 20.2103]</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sealed sources are physically inventoried at six-month intervals. <b>[10 CFR 35.2067]</b> Note: Obtain a copy of the licensee’s current sealed source inventory.	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Radioactive Materials Use and Control [10 CFR 20.1801 &amp; 20.1802]</b>	
Are radioactive materials secured from unauthorized access to or removal from the area (for example, “hot lab” is locked when no one is present)? <b>[10 CFR 20.1801]</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are radioactive materials in an unrestricted area under surveillance or otherwise controlled at all times? <b>[10 CFR 20.1802]</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No
Procedures are available for receiving and opening packages? <b>[10 CFR 20.1906]</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are radioactive materials that are received authorized by the license? <b>[L/C]</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are radioactive materials transferred to authorized licensee(s)? <b>[L/C]</b> Note: For example, unused doses or waste transferred back to radio-pharmacy.	<input type="checkbox"/> Yes <input type="checkbox"/> No
Records of receipt, transfer, and disposal of radioactive materials are maintained? <b>[10 CFR 20.2001 &amp; 20.2103]</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Instructions to Workers</b>	
Are individual workers likely to receive an occupational radiation dose [ $>1\text{mSv}(100\text{mR})/\text{year}$ ] provided annual training? <b>[10 CFR 19.12]</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No
(1) Is training commensurate with potential radiological health protection problems present in the workplace? <b>[10 CFR 19.12]</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No
(2) Required training records maintained for three years. <b>[10 CFR 20.2106]</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No

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<p>Are non-occupationally exposed workers [<math>&lt;1\text{mSv}(100\text{mR})/\text{year}</math>] given training (e.g., housekeeping, security, and other ancillary personnel)? <b>[L/C]</b></p> <p style="padding-left: 40px;">Are training records maintained and available for Department review?</p> <p>HAZMAT training provided for transportation personnel (e.g., courier, drivers of licensee's delivery vehicle). <b>[49 CFR 172.700]</b></p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<b>Supervision</b>	
<p>Is the AU/ANP knowledgeable and familiar with the following:</p> <p style="padding-left: 40px;">Written radiation protection procedures?</p> <p style="padding-left: 40px;">Written directive procedures?</p> <p style="padding-left: 40px;">License Conditions?</p> <p>Are the supervised individual(s) knowledgeable and familiar with the following:</p> <p style="padding-left: 40px;">Written radiation protection procedures? <b>[10 CFR 20.1101, 35,24, 35,26, &amp; 35.27]</b></p> <p style="padding-left: 40px;">Written directive procedures? <b>[10 CFR 35.40]</b></p> <p style="padding-left: 40px;">Medical Use of Radioactive Material? <b>[10 CFR 20.1101, 35.27, &amp; 19.11]</b></p> <p style="padding-left: 40px;">License conditions? <b>[10 CFR 20.1101, 35.27, &amp; 19.11]</b></p> <p>Do radiation workers wear appropriate protective clothing and use protective equipment (e.g., lab coats, protective eyewear, gloves, bench shield, and vial and syringe shields)?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<b>Notification and Reports</b>	
<p>Does the licensee provide monitored radiation workers an annual written report of their occupational exposure? <b>[10 CFR 20.2106]</b></p> <p style="padding-left: 40px;">Occupational radiation exposure reports for monitored personnel are being maintained? <b>[10 CFR 20.2106]</b></p> <p style="padding-left: 40px;">At termination of employment, are workers' exposure records available upon request? <b>[10 CFR 19.13]</b></p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>Has any licensed radioactive material been stolen, lost, or missing since the last inspection? <b>[10 CFR 20.2201]</b></p> <p>Have any reportable events occurred since the last inspection? <b>[10 CFR 20.2202]</b> Note: For example, contamination event restricting access for <math>&gt;24</math> hours, equipment failure, contaminated individual requiring medical attention, fire, or explosion.</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>Have there been any medical events since the last inspection?</p> <p style="padding-left: 40px;">If yes, describe the root cause and corrective actions taken. <b>[10 CFR 35.3045]</b></p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>

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<p>Was the Department notified within 24 hours upon discovery? <b>[10 CFR 35.3045]</b></p> <p>Was the patient’s physician notified? <b>[10 CFR 35.3045]</b></p> <p>Was the patient or their guardian notified, and written report provided? <b>[10 CFR 35.3045]</b></p> <p>Was a written report submitted to the Department within 15 days? <b>[10 CFR 35.3045]</b></p> <p>Have any occupational overexposures and/or excessive levels of radiation been reported to the Department? <b>[10 CFR 20.2202 &amp; 20.2203]</b></p> <p>The RSO and all authorized users are aware of and have access to the Department’s emergency telephone number. [Note: Department 24-hour telephone number is 802-863-7280.]</p> <p>Any report(s) of leaking source(s) made to the Department since the last inspection? <b>[10 CFR 35.67, 35.3045, &amp; 35.3067]</b></p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<b>Posting and Labeling</b>	
<p>Is posting required? <b>[10 CFR 20.1901]</b></p> <p>“Caution, Radioactive Material” signs posted where required (storage and/or use areas, if the licensed material exceeds 10 times the quantity specified in Appendix F). <b>[10 CFR 20.1901]</b></p> <p>“Caution, Radiation Area” signs posted as required. <b>[10 CFR 20.1901]</b></p> <p>All transported radioactive material containers are labeled and legible. <b>[10 CFR 20.1904]</b></p> <p>The Department’s “Notice to Employees” posted in appropriate areas. <b>[10 CFR 19.11]</b></p> <p>License and license documents and applicable parts of <b>6-501</b> are posted, or a notice of availability is posted for the employee’s review. <b>[10 CFR 19.11 &amp; 35.14]</b></p> <p>Emergency procedures are posted. <b>[10 CFR 19.11 &amp; 19.12]</b></p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<b>Independent and Confirmatory Measurements</b>	
<p>Inspector performed independent surveys in restricted, controlled, and unrestricted areas. [Note: Independent survey measurements should be conducted on all inspections, especially those areas where materials are prepared and used.]</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>Inspector’s survey instrument(s) used:</p> <p>Mfg./Make:</p> <p>Model #:</p> <p>Serial #:</p> <p>Last calibration date:</p>	

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<p>Licensee survey instrument(s):</p> <p style="margin-left: 20px;">Mfg./Make: Model #: Serial #: Last calibration date:</p> <p>Describe inspector instrument readings as compared to licensee instrument readings.</p> <p>Independent Readings.</p> <p style="margin-left: 40px;">Highest radiation level in unrestricted areas: _____ mR/hr</p> <p style="margin-left: 40px;">Highest radiation level in restricted areas: _____ mR/hr</p> <p>Radiation levels in all unrestricted areas do not exceed 2 mR in any one hour or 100 mR in a year. <b>[10 CFR 20.1301]</b></p> <p>Reading at external surface of transportation containers: _____ mR/hr <b>[Appendix G to 10 CFR Part 20]</b></p>	<p style="text-align: right;"><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<b>Personnel Monitoring</b>	
<p>Dosimetry required? <b>[10 CFR 20.1502, L/C]</b></p> <p>Dosimeters are provided to appropriate personnel.</p> <p>Type:</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p><input type="checkbox"/> Film</p> <p><input type="checkbox"/> TLD</p> <p><input type="checkbox"/> Luxel</p> <p><input type="checkbox"/> OSL</p> </div> <div style="width: 45%;"> <p><input type="checkbox"/> Whole Body</p> <p><input type="checkbox"/> Extremity</p> </div> </div> <p>Frequency of reports:</p> <p style="margin-left: 20px;"><input type="checkbox"/> Monthly <input type="checkbox"/> Quarterly <input type="checkbox"/> Annually</p> <p>Dosimetry Supplier: _____</p> <p>NVLAP certified? <b>[10 CFR 20.1501]</b></p> <p>Monitoring reports reviewed by licensee. <b>[L/C]</b></p> <p style="margin-left: 20px;"><input type="checkbox"/> Monthly <input type="checkbox"/> Quarterly <input type="checkbox"/> Semi-annually</p> <p>Note: Identify and record the reviewer.</p>	<p style="text-align: right;"><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p style="text-align: right;"><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p style="text-align: right;"><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>Personnel monitoring records are available for review.</p> <p>Monitoring results are reported in Sv or Rem. <b>[10 CFR 20.2101]</b></p>	<p style="text-align: right;"><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p style="text-align: right;"><input type="checkbox"/> Yes <input type="checkbox"/> No</p>

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<p>Inspector reviewed personnel monitoring records, from _____ to _____.</p> <p>Maximum DDE: _____ mSv _____ mR</p> <p><input type="checkbox"/> Month <input type="checkbox"/> Quarter <input type="checkbox"/> Year</p> <p>Maximum SDE: _____ mSv _____ mR</p> <p><input type="checkbox"/> Month <input type="checkbox"/> Quarter <input type="checkbox"/> Year</p> <p>Did any worker's occupational dose exceed the regulatory limits? <b>[10 CFR 20.1201]</b></p> <p>Are there unmonitored workers whose job has changed since the last inspection?</p> <p style="padding-left: 20px;">A change in job activity put the worker above the 10% occupational dose limit?</p> <p>Are records of personnel exposure, surveys, and monitoring evaluation retained? Note: records must be kept until the Department terminates the license. <b>[10 CFR 20.2106]</b></p> <p>If a worker declared her pregnancy, did licensee comply with <b>10 CFR 20.1208 &amp; 10 CFR 20.2106?</b></p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<b>Radioactive Waste Management</b>	
<p>Waste storage area(s) properly secured. <b>[10 CFR 20.1801 &amp; 20.1802]</b></p> <p>Waste storage area(s) properly posted. <b>[10 CFR 19.11]</b></p> <p>Waste storage is located other than the place of possession or use.</p> <p>Waste containers properly segregated and labeled.</p> <p>Decay-in-storage (DIS) is approved and procedures are being followed. <b>[10 CFR 35.92]</b></p> <p style="padding-left: 20px;">Radionuclides being stored have half-lives of less than 120 days.</p> <p style="padding-left: 20px;">Radionuclides are segregated for storage according to their half-life.</p> <p style="padding-left: 20px;">Each nuclide in waste storage is stored for a minimum of 10 half-lives.</p> <p>Before waste is disposed, surveys are performed at the surface of each container with the survey meter set to its most sensitive scale.</p> <p style="padding-left: 20px;">Note: Ensure surveys are performed in low background areas.</p> <p>Effluents from licensed materials are maintained ALARA.</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>The licensee is monitoring all significant effluent pathways.</p> <p>The fume hood is being checked for adequate airflow and records maintained.</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>

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Filters are being maintained and replaced according to manufacturer’s instructions and licensee’s written procedures. [L/C]	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Transportation of Radioactive Materials</b>	
Licensee makes shipments of radioactive material. [10 CFR 20.2006 & 71.5]	<input type="checkbox"/> Yes <input type="checkbox"/> No
Security and all applicable regulations followed. [10 CFR 71.5 & Appendix G to 10 CFR Part 20]	<input type="checkbox"/> Yes <input type="checkbox"/> No
Shipments are made through common carriers. [10 CFR 71.5]	<input type="checkbox"/> Yes <input type="checkbox"/> No
Shipments are transported in licensee’s private vehicle(s). [10 CFR 71.5]	<input type="checkbox"/> Yes <input type="checkbox"/> No
Shipping papers are accessible and available for inspection. [49 CFR 177.817(e)]	<input type="checkbox"/> Yes <input type="checkbox"/> No
Driver trained in HAZMAT communications, including loading and unloading radioactive materials. [49 CFR 177.816 & 177.842]	<input type="checkbox"/> Yes <input type="checkbox"/> No
Shipments made since last inspection?  If yes, complete e. through g.	<input type="checkbox"/> Yes <input type="checkbox"/> No
Licensee packages and ships radioactive materials according to regulatory procedures. [10 CFR 20.2001 & 10 CFR 71.5]	<input type="checkbox"/> Yes <input type="checkbox"/> No
Type A package used for shipping and marked “Type A.” [49 CFR 173.435]	<input type="checkbox"/> Yes <input type="checkbox"/> No
Shipping container normally used to transport radioactive materials:  <input type="checkbox"/> Steel “Ammo” Box <input type="checkbox"/> Aluminum Suitcase <input type="checkbox"/> Other	
Package/container meets design requirements. [49 CFR 173.410 & 173.415]	<input type="checkbox"/> Yes <input type="checkbox"/> No
DOT 7A or other authorized packages used for shipping. [49 CFR 173.415(a)]	<input type="checkbox"/> Yes <input type="checkbox"/> No
Package properly marked with two labels that include proper shipping name and Identification Number (“Radioactive material, N.O.S., UN 2928”.)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Those packages containing more than 10 mCi of iodinated byproduct include the letters RQ (reportable quantity.)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Activity per package does not exceed the A-1 or A-2 limit.	<input type="checkbox"/> Yes <input type="checkbox"/> No
Only shipping labels “Radioactive White-I” or “Radioactive Yellow-II” are used.  Note: Yellow-II labels must include the Transport Index (TI). [49 CFR 172.403]	<input type="checkbox"/> Yes <input type="checkbox"/> No
Radiation levels at the external surface of the package for White-I labels are less than or equal to 0.5 mrem/hr. [49 CFR 172.403]	<input type="checkbox"/> Yes <input type="checkbox"/> No

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Radiation levels at the external surface of the package for Yellow-II labels are greater than 0.5 mR/hr but do not exceed 50 mrem/hr.

Yes  No

Contamination levels at surface of package are checked before shipping?  
All proper shipping requirements are met. [49 CFR 172.200 through 172.204]

Yes  No  
 Yes  No

Emergency procedures and response telephone number(s) available. [49 CFR 172.201(d)]

Yes