

Nuclear Medicine Programs – Diagnostic & Therapeutic
Inspection Checklist

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

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Program Inspection History	
<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>
Organization [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, & 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, & 35.26]</p> <p style="padding-left: 20px;">If yes, has the license been amended? [10 CFR 35.11, 35.12, & 35.15]</p> <p>RSO has sufficient authority to manage the licensee’s radiation safety program. [10 CFR 35.24 & 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>Note: 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>	
Scope of Licensee Program	
<p>Check all applicable modalities for this licensee:</p> <ul style="list-style-type: none"> <input type="checkbox"/> In-Vitro Studies <input type="checkbox"/> Nuclear Medicine (Diagnostic) <input type="checkbox"/> Nuclear Medicine (Therapeutic) <input type="checkbox"/> Mobile Nuclear Medicine <input type="checkbox"/> Sealed Sources for Diagnosis <input type="checkbox"/> Manual Brachytherapy 	

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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? [10 CFR 35.3045]</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p>
Mobile Medical Services	
<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. [10 CFR 35.100]</p> <p><input type="checkbox"/> Unsealed material for imaging and localization studies. [10 CFR 35.200]</p> <p><input type="checkbox"/> Mobile Remote Afterloaders. [10 CFR 35.600, 35.604, 35.605, 35.615, 35.632, & 35.633]</p> <p><input type="checkbox"/> Calibration and Reference Sources > 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>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? [10 CFR 35.80(a)(1)]</p> <p>Is the radioactive material delivered directly to the mobile nuclear service? [10 CFR 35.80(a)(1)]</p> <p>If not, does the client have a license authorizing possession of the radioactive material? [10 CFR 35.80(b)]</p> <p>Is all radioactive material removed from client's facility before leaving? [L/C]</p> <p>Is a calibrated survey meter available for use at the client's facility? [10 CFR 35.80(a)(3)]</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? [10 CFR 35.60 & Reg. Guide 10.8 Appendix C]</p> <p>Have surveys been performed of all areas of use before leaving the job site? [10 CFR 35.80]</p> <p style="padding-left: 40px;">Contamination surveys performed?</p> <p style="padding-left: 40px;">Area (dose rate) surveys performed?</p> <p style="padding-left: 40px;">Are records maintained for three years? [10 CFR 20.2103]</p> <p>Are radioactive materials secured and under constant surveillance during transport and at the location of use? [10 CFR 20.1801 & 20.1802]</p> <p>All syringe(s) and vial(s) containing radiopharmaceuticals are labeled? [10 CFR 35.69]</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>
Management Oversight	
<p>Does management support ALARA? [10 CFR 20.1101 Subpart B]</p> <p>Is a Radiation Safety Committee (RSC) required? [10 CFR 35.24 Subpart B (f)] 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? [L/C] Quorums established at RSC quarterly meetings? [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 <input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>Are annual radiation safety program reviews (audits) being performed? [10 CFR 20.1101 Subpart 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? [10 CFR 20.2102, 35.2024, & 35.2026]</p> <p>Were any deficiencies found in the program during a program review?</p> <p style="padding-left: 40px;">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>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. [L/C]</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? [10 CFR 35.61 & 35.2061]</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>Dose Calibrator Calibration [10 CFR 35.61 & 35.2061, L/C]</p> <p style="padding-left: 40px;">Constancy checked each day prior to assay of patient dosages ($\pm 10\%$ 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 ($\pm 10\%$ accuracy.)</p> <p style="padding-left: 40px;">Geometry dependence checked at installation ($\pm 10\%$ 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 ($\pm 10\%$ 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 $\pm 10\%$ 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>Note: 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>Surveys and Contamination Control</p>	
<p>Are surveys being performed for radiation levels and removable contamination? [L/C]</p> <p style="margin-left: 40px;">Are ambient radiation level surveys being performed and records maintained? [10 CFR 20.1501 & 20.2103, L/C]</p> <p style="margin-left: 80px;">Daily (elution, prep, assay, and administration)</p> <p style="margin-left: 80px;">Weekly (use, storage, and waste storage)</p> <p style="margin-left: 80px;">Monthly (Lab areas: small quantities < 200 µCi)</p> <p style="margin-left: 40px;">Are removable contamination surveys being performed and records maintained? [10 CFR 20.1501 & 20.2103, L/C]</p> <p style="margin-left: 80px;">Weekly (elution, prep, assay, and administration)</p> <p style="margin-left: 80px;">Monthly (storage and waste storage)</p> <p style="margin-left: 80px;">Are results reported in dpm per 100 cm²?</p> <p style="margin-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="margin-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="margin-left: 40px;">Action level for ambient radiation levels established and used? [L/C]</p> <p style="margin-left: 40px;">Appropriate actions taken when the licensee's ambient radiation action levels have been exceeded?</p> <p style="margin-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
Sealed Source and Leak Test [10 CFR 32 & 35]	
Leak test performed on each sealed source at six-month intervals or as specified in SSD Certificate? [10 CFR 32.74(b)(1)]	<input type="checkbox"/> Yes <input type="checkbox"/> No
Leak test performed as described in license? [L/C]	<input type="checkbox"/> Yes <input type="checkbox"/> No
Leak test results show removable contamination to be less than 185 Bq (0.005 µCi). [10 CFR 35.67]	<input type="checkbox"/> Yes <input type="checkbox"/> No
Leak test records are being maintained for three years. [10 CFR 35.2067]	<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? [10 CFR 35.67]	<input type="checkbox"/> Yes <input type="checkbox"/> No
Records are available showing receipt, transfer, and disposal of each sealed source. [10 CFR 20.2001 & 20.2103]	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sealed sources are physically inventoried at six-month intervals. [10 CFR 35.2067] Note: Obtain a copy of the licensee’s current sealed source inventory.	<input type="checkbox"/> Yes <input type="checkbox"/> No
Radioactive Materials Use and Control [10 CFR 20.1801 & 20.1802]	
Are radioactive materials secured from unauthorized access to or removal from the area (for example, “hot lab” is locked when no one is present)? [10 CFR 20.1801]	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are radioactive materials in an unrestricted area under surveillance or otherwise controlled at all times? [10 CFR 20.1802]	<input type="checkbox"/> Yes <input type="checkbox"/> No
Procedures are available for receiving and opening packages? [10 CFR 20.1906]	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are radioactive materials that are received authorized by the license? [L/C]	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are radioactive materials transferred to authorized licensee(s)? [L/C] 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? [10 CFR 20.2001 & 20.2103]	<input type="checkbox"/> Yes <input type="checkbox"/> No
Instructions to Workers	
Are individual workers likely to receive an occupational radiation dose [$>1\text{mSv}(100\text{mR})/\text{year}$] provided annual training? [10 CFR 19.12]	<input type="checkbox"/> Yes <input type="checkbox"/> No
(1) Is training commensurate with potential radiological health protection problems present in the workplace? [10 CFR 19.12]	<input type="checkbox"/> Yes <input type="checkbox"/> No
(2) Required training records maintained for three years. [10 CFR 20.2106]	<input type="checkbox"/> Yes <input type="checkbox"/> No

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<p>Are non-occupationally exposed workers [$<1\text{mSv}(100\text{mR})/\text{year}$] given training (e.g., housekeeping, security, and other ancillary personnel)? [L/C]</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). [49 CFR 172.700]</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>
Supervision	
<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? [10 CFR 20.1101, 35,24, 35,26, & 35.27]</p> <p style="padding-left: 40px;">Written directive procedures? [10 CFR 35.40]</p> <p style="padding-left: 40px;">Medical Use of Radioactive Material? [10 CFR 20.1101, 35.27, & 19.11]</p> <p style="padding-left: 40px;">License conditions? [10 CFR 20.1101, 35.27, & 19.11]</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>
Notification and Reports	
<p>Does the licensee provide monitored radiation workers an annual written report of their occupational exposure? [10 CFR 20.2106]</p> <p style="padding-left: 40px;">Occupational radiation exposure reports for monitored personnel are being maintained? [10 CFR 20.2106]</p> <p style="padding-left: 40px;">At termination of employment, are workers' exposure records available upon request? [10 CFR 19.13]</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? [10 CFR 20.2201]</p> <p>Have any reportable events occurred since the last inspection? [10 CFR 20.2202] Note: For example, contamination event restricting access for >24 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. [10 CFR 35.3045]</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? [10 CFR 35.3045]</p> <p>Was the patient’s physician notified? [10 CFR 35.3045]</p> <p>Was the patient or their guardian notified, and written report provided? [10 CFR 35.3045]</p> <p>Was a written report submitted to the Department within 15 days? [10 CFR 35.3045]</p> <p>Have any occupational overexposures and/or excessive levels of radiation been reported to the Department? [10 CFR 20.2202 & 20.2203]</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? [10 CFR 35.67, 35.3045, & 35.3067]</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>
Posting and Labeling	
<p>Is posting required? [10 CFR 20.1901]</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). [10 CFR 20.1901]</p> <p>“Caution, Radiation Area” signs posted as required. [10 CFR 20.1901]</p> <p>All transported radioactive material containers are labeled and legible. [10 CFR 20.1904]</p> <p>The Department’s “Notice to Employees” posted in appropriate areas. [10 CFR 19.11]</p> <p>License and license documents and applicable parts of 6-501 are posted, or a notice of availability is posted for the employee’s review. [10 CFR 19.11 & 35.14]</p> <p>Emergency procedures are posted. [10 CFR 19.11 & 19.12]</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>
Independent and Confirmatory Measurements	
<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. [10 CFR 20.1301]</p> <p>Reading at external surface of transportation containers: _____ mR/hr [Appendix G to 10 CFR Part 20]</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
Personnel Monitoring	
<p>Dosimetry required? [10 CFR 20.1502, L/C]</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: 40px;"><input type="checkbox"/> Monthly <input type="checkbox"/> Quarterly <input type="checkbox"/> Annually</p> <p>Dosimetry Supplier: _____</p> <p>NVLAP certified? [10 CFR 20.1501]</p> <p>Monitoring reports reviewed by licensee. [L/C]</p> <p style="margin-left: 40px;"><input type="checkbox"/> Monthly <input type="checkbox"/> Quarterly <input type="checkbox"/> Semi-annually</p> <p>Note: Identify and record the reviewer.</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>Personnel monitoring records are available for review.</p> <p>Monitoring results are reported in Sv or Rem. [10 CFR 20.2101]</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>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? [10 CFR 20.1201]</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. [10 CFR 20.2106]</p> <p>If a worker declared her pregnancy, did licensee comply with 10 CFR 20.1208 & 10 CFR 20.2106?</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>
Radioactive Waste Management	
<p>Waste storage area(s) properly secured. [10 CFR 20.1801 & 20.1802]</p> <p>Waste storage area(s) properly posted. [10 CFR 19.11]</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. [10 CFR 35.92]</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
Transportation of Radioactive Materials	
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.	<input type="checkbox"/> Yes <input type="checkbox"/> No
Note: Yellow-II labels must include the Transport Index (TI). [49 CFR 172.403]	
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