4.4 Inspection Program Elements

This section of the application addresses how the Department will conduct and document inspections. The Department will conduct inspections of radioactive materials licensees following the guidance in the NRC's specific Inspection Procedures, NUREG 1556 Safety Audits and relevant related documents for the various license types in Connecticut. The Department will also use the inspection guidance found in the NRC's Inspection Manual Chapters and relevant related documents. For the administration of the inspection program, Connecticut has developed administrative procedures, Radiation Control Procedures (RCPs). These procedures are listed below and contained within this section of the application.

RCP No.	Title
RCP 901.1	Scheduling of Inspections
RCP 901.2	Inspection Preparations
RCP 901.3	Performance Based Inspections
RCP 901.4	Documentation of Inspection Results
RCP 901.5	Assuring the Technical Quality of Inspections
RCP 901.6	Tracking Inspections

In application section 4.4.1 "Procedures for Inspecting Facilities Where Radioactive Material is Stored or Used", the Connecticut Radioactive Materials Program (RMP) plans to use the NRC Inspection Manual Chapters, applicable NUREG 1556 Safety Audits, and NRC Inspection Procedures. This section also briefly describes RCP 901.1 through 901.6 which are written to guide the scheduling of inspections, preparations for an effective inspection for compliance and the methods to conduct, document and respond to the findings of radioactive materials licensee inspections.

RCP 901.5 *Assuring the Technical Quality of Inspections* is described in application section 4.4.2. The key tenets of the process are checklist-guided initial inspections, secondary review of the inspection reports by another qualified inspector and an annual supervisory accompaniment of qualified inspectors as they conduct performance-based inspections.

The administrative procedures appropriate for all inspections are attached with the exception of RCP 902.1 *Enforcement, Escalated Enforcement and Administrative Actions*. While significantly related to inspection activities, it is described and found in application section 4.5 Enforcement Program Elements.

4.4.1 Procedures for Inspecting Facilities Where Radioactive Material Is Stored or Used

SA-700 Section 4.4.1.1

1. The types of inspections conducted and how they are scheduled are described in RCP 901.1 *Scheduling of Inspections*. A copy is found with all other inspection-related administrative procedures in application section 4.4.3.

   Pre-licensing site visits are described in application section 4.3 Licensing Program Elements of this application. The description is specifically in RCP 900.1 *Review of an Initial Application for License or an Amendment Request*. A key component is the Pre-Licensing Checklist, Attachment 1 of the procedure.

2. Connecticut will use as a minimum inspection frequency as those documented in the NRC's Inspection Manual Chapter 2800 *Materials Inspection Program*. Specifically, inspections will be scheduled in accordance with the document "Office of Nuclear Materials Safety and Safeguards Program Code Descriptions and Inspection" located at the NRC website, 2023 Program Code Descriptions and Inspection Priorities - https://www.nrc.gov/docs/ML2326/ML23269A235.pdf.

   The priority codes will be used to determine the maximum number of years between inspections. This correlates inspection frequency with risk associated with the amount and type of material and scope of operations licensed. The inspection frequencies are thus based on the relative risk associated with material possessed by the individual licensee. These inspection frequencies are copied into Attachment 6 to RCP 900.1 *Review of an Initial Application for License or an Amendment Request*.

3, 4, & 5. The format and guidance for inspection reports, instructions for performing inspections and the documentation of inspections, including notification of the licensee of the inspection results, especially as related to compliance, are found in RCP 901.1 *Scheduling of Inspections*, RCP 901.2 *Inspection Preparations*, RCP 901.3 *Performance-Based Inspections*, RCP 901.4 *Documentation of Inspection Results* and RCP 901.6 *Tracking Inspections*. Each of these procedures is attached to this Application.

Rather than recreate inspection procedures and checklists for the specific types of licenses that will be issued in Connecticut, the Department will incorporate by reference

certain Nuclear Regulatory Commission (NRC) Inspection Manual Chapters (IMC), NUREG 1556 Safety Audits and NRC Inspection Procedures. The Department will use only those NUREGs, IMC chapters and inspection procedures relevant to Connecticut's Radioactive Materials Program.

The Inspection Manual Chapters are found at https://www.nrc.gov/reading-rm/doc-collections/insp-manual/manual-chapter/. The NRC Inspection Procedures are found at https://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/. The NUREG 1556 "Consolidated Guidance About Materials Licenses" are found at https://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1556/. The specific NRC Inspection Manual Chapters, NUREG 1556 Audits, and Inspection Procedures to be used in Connecticut at the time of this Application are listed in Table 4.4-1 below.

Table 4.4-1

NRC Documents Serving as Model Guidance for Connecticut

Inspection Manual Chapters and Titles	
0610	Nuclear Material Safety and Safeguards Inspection Reports
0620	Inspection Documents and Records
1248 App A	Materials Health Physics License Review Qualification Journal
1248 App B	Materials Health Physics Inspector Qualification Journal
1301	Response to Radioactive Material Incidents That Do Not Require Activation of the NRC Incident Response Plan
1302	Follow-up Actions and Action Levels for Radiation Exposures Associated with Materials Incidents Involving Members of the Public
1303	Requesting Emergency Acceptance of Radioactive Material by the U.S. Department of Energy (DOE)
1330	Response to Transportation Accidents Involving Radioactive Materials
2602	Decommissioning Oversight and Inspection Program for Fuel Cycle Facilities and Materials Licensees
2800	Materials Inspection Program
Inspection Procedures and Titles	
83822	Radiation Protection
83890	Closeout Inspection and Survey
84850	Radioactive Waste Management - Inspection of Waste Generator Requirements of 10 CFR Part 20 and 10 CFR Part 61.
84900	Low-Level Radioactive Waste Storage
86730	Transportation of Radioactive Materials
86740	Inspection of Transportation Activities
87102	Maintaining Effluents from Materials Facilities As Low As Is Reasonably Achievable (ALARA)
87103	Inspection of Materials Licensees Involved in an Incident or Bankruptcy Filing
87104	Decommissioning Inspection Procedure for Materials Licensees
87121	Industrial Radiography Programs
87122	Irradiator Programs
87123	Well Logging Programs
87124	Fixed Gauge Programs
87125	Materials Processor/Manufacturer Programs
87126	Broad Scope Academic and Research & Development Programs
87127	Radiopharmacy Programs
87130	Nuclear Medicine Programs - Written Directive Not Required
87131	Nuclear Medicine Programs - Written Directive Required
87132	Brachytherapy Programs
87133	Medical Gamma Stereotactic Radiosurgery and Teletherapy Programs
87134	Medical Broad-Scope Programs
87137	10 CFR Part 37 Materials Security Programs
87139	Portable Nuclear Gauge Programs
87140	Source, Special Nuclear Material, and Other Alpha Emitter Use Programs

87141	Limited Scope Academic and Research & Development Programs Including Animal Use
87142	Sealed Sources and Devices (Other) Used in Measuring Systems, Analytical Instruments, Calibration and Checking of Instruments, and Similar Purposes
87143	Self-Shielded Irradiator and Calibrator Devices
87144	Veterinary Use Programs
87250	Locating Missing Materials Licensees
NUREG 1757	Consolidated Decommissioning Guidance
NUREG 1556	Volume 1, Appendix E- Portable Gauge Audit Checklist Volume 2, Appendix G- Industrial Radiography Radiation Safety Audit Checklist Volume 4, Appendix E- Fixed Gauge Audit Checklist Volume 5, Appendix I- Self-Shielded Irradiator Audit Checklist Volume 6, Appendix G-10 CFR Part 36 Irradiators Suggested Audit Checklist Volume 7, Appendix H-Academic, Research and Development, and Other Licenses of Limited Scope Including Electron Capture Devices and X-Ray Fluorescence Analyzers Sample Audit Program Checklist Volume 9, Appendix L-Medical Licenses Model Medical License Audit Checklist Volume 11, Appendix F - Broad Scope Non-Medical Audit Checklist Volume 12, Appendix G- Sample Audit Program Possession Licenses for Manufacturing and Distribution Checklist Volume 13, Appendix I-Suggested Commercial Radiopharmacy Licenses Audit Checklist Volume 17, Appendix E-Suggested Audit Checklist Special Nuclear Material of Less than Critical Mass Volume 18, Appendix L, Suggested Service Provider Audit Checklist
RCP 900.1 Attachment 1 Pre-Licensing Checklist	
RCP 900.1 Attachment 2 Risk Significant Radioactive Materials Checklist	
NRC Enforcement Manual	
STP SA-102 “Reviewing the Common Performance Indicator, Technical Quality of Inspections”.	
NRC Enforcement Policy	

6. To facilitate effective inspections, for radiation protection purposes and for emergency preparedness, the Department possesses and maintains numerous radiological instruments, listed in Appendix 4.4-1. These instruments are capable of measuring exposure rates from x- and gamma radiation, absorbed dose rates from beta radiation, and count rates from alpha, beta, beta-gamma, gamma and neutron radiation-emitting radioactive materials of a wide range of energies. Some field instruments are capable of isotopic identification. Radiation detection instruments are assigned to individuals, with additional equipment available at the Windsor laboratory, to ensure appropriate instrumentation for potential surveys as related to the licensed activities being inspected. As we do now, the Radioactive Materials Program will maintain sufficient instruments for the above purposes in good working order. They will be calibrated annually by a

facility licensed for such. CBRNResponder© is used to record, track and manage maintenance and calibrations of instruments.

Portable instrument calibrations are and will be conducted by an ISO/IEC 17025 accredited and qualified instrument calibration service vendor under state contract. Instrument manufacturers may also be used for specific instrument repair or other service needs beyond calibration. Prior to use, inspectors, per guidance in RCP 901.2 *Inspection Preparations*, perform operations checks of the survey instruments including, at a minimum, verification of calibration, no physical damage, battery status, and source response in order to ensure equipment is in good working order prior to use.

Radiochemcial analysis is provided by either the Connecticut Department of Public Health Laboratory (instrumentation listed in Appendix 4.4-1) or by a vendor laboratory maintained under state contract qualified to conduct analysis.

SA-700 Section 4.4.1.2

1. Connecticut performs inspections following written procedures RCP-901.1 through RCP 901.6 that addresses inspection activities appropriate to the category of licensee being inspected.
2. Connecticut correlates inspection frequency to the amount and kind of material and type of operation licensed. Inspection frequency is as listed in the NRC Inspection Manual Chapter 2800.
3. Inspection procedures include information exchange between inspection staff and licensing staff.
4. Connecticut maintains adequate field instrumentation and laboratory service capabilities necessary to evaluate licensees' control of materials. Calibrations are performed by a qualified calibration facility. Laboratory analysis is performed by qualified laboratories.
5. Connecticut notifies licenses of the results of inspections in a short time period, typically within 15 days as stated in RCP 901.4.

4.4.2 Procedures for Assuring the Technical Quality of Inspections and Inspection Reports

SA-700 Section 4.4.2.1

RCP 901.5 *Assuring the Technical Quality of Inspections* provides guidance on quality assurance for inspection reports. It describes secondary peer review and supervisory review, as well as the content of inspection reports. Significant detail is provided to help ensure sufficient basis is documented for the findings of inspections. It is based upon guidance found in the NRC's SA-102 *Reviewing the Common Performance Indicator, Technical Quality of Inspections* and IMC 0610 *Nuclear Material Safety and Safeguards Inspection Reports*. RCP 901.5 is attached.

SA-700 Section 4.4.2.2

Connecticut uses RCP-901.5 to guide RMP staff.

4.4.3 Administrative Procedures for Inspections

SA-700 Section 4.4.3.1

There are five RCPs that guide the administration of the inspection program. RCP 901.1 is for the scheduling of inspections, RCP 901.2 helps inspectors prepare for inspections, RCP 901.3 provides specific guidance to ensure performance-based inspections, RCP 901.4 describes how inspection results are to be documented and RCP 901.6 describes how inspections are tracked.

SA-700 Section 4.4.3.2

Connecticut has five RMP specific written procedures RCP 901.1 through RCP 901.4 and RCP 901.6.