



**State of New Hampshire**  
**Department of Health and Human Services**  
**Division of Public Health Services**  
**Radiological Health Section**

## **Analytical X-Ray Inspection Guide**

### **Administrative items:**

- Registration is available and current
- Radiation Protection Program must include:
  - Name of Radiation Safety Officer (RSO), and RSO responsibilities
  - Annual review of Radiation Protection Program(RPP) - documentation for 3 years of reviews conducted by RSO or management/ownership
  - Training requirements for users of x-ray machines
  - Safe operating Procedures
  - Personnel Monitoring and annual dose limits
  - Dose limits to the public
  - Declared pregnant women and Exposure policy
  - Self-inspections/audits
- Instructions to Occupational Workers:
  - Information about devices in facility
  - Operating and emergency procedures provided
    - Precautions to minimize exposure
    - Functions of protective devices
    - Reporting any safety violations
    - Reporting for malfunctioning device
    - Annual safety refresher training documented
- Dosimetry Records – Entire dosimetry history must be maintained
  - Prior occupational dose
  - Dosimetry reports provided by request to employees upon termination
- Posting of:
  - RHS-5: Notice to Employees
  - CAUTION X-Ray EQUIPMENT sign nearby
  - Employees have access to the current version of the New Hampshire Rules for the Control of Radiation (NHRCR) either online or printed out
- Service records from a registered service provider– e.g. Maintenance, installation paperwork, calibration, annual radiation safety surveys etc.

### **Machine Requirements:**

#### **Analytical (Closed-beam) machine Requirements:**

- Machine labels and indicators:
  - “On-Off status indicator
  - “X-Ray On” sign illuminates when tube energized
  - If there is a shutter, an “Open-Close” status indicator is present
  - Label indicating the device model and serial number
- Annual Interlock Tests
- Manufacturer User Manual available

#### **Hand-Held XRF machine Requirements:**

- Machine labels and indicators:
  - “On-Off status indicator
  - “X-Ray On” sign illuminates when tube energized
  - If there is a shutter, an “Open-Close” status indicator is present
  - Label indicating the device model and serial number
- Manufacturer User Manual available

#### **Analytical (Open-beam) machine Requirements:**

- Machine labels and indicators:
  - “On-Off status indicator
  - “X-Ray On” sign illuminates when tube energized
  - If there is a shutter, an “Open-Close” status indicator is present
  - Label indicating the device model and serial number
- Safety device present to prevent exposure to primary beam
- If no safety device present:
  - DHHS/RHS has granted an exemption
  - Users wear extremity dosimetry
- Manufacturer User Manual available



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**Radiological Health Section (RHS) survey**

- An RHS inspector's machine survey will focus on:
  - General operability
  - Operator exposure rate measurements
  
- **NOTE:** An RHS inspector conducts a survey of your machine to verify that it is operating in compliance with the NHRCR. An inspection should not be considered as a routine survey of your machine. If there are any performance issues noted during the inspection, contact your service provider.

**References:**

- *New Hampshire Rules for the Control of Radiation (NHRCR):*
  - *He-P 4019 - Notices, Instructions, and Reports to Workers; Inspections*
  - *He-P 4020 - Standards for Protection Against Radiation*
  - *He-P 4021 - Records, Reports, and Additional Requirements*
  - *He-P 4022 - Surveys and Monitoring*
  - *He-P 4034.17(d) – Training – Annual refresher training requirements*
  - *He-P 4034.33 – Copies of Operating and Emergency Procedures*
  - *He-P 4040 – Registration of Radiation Machines, Magnetic Resonance Imaging Machines and Providers of Services*
  - *He-P 4043 – Radiation Safety Requirements for Analytical X-ray Equipment*
  
- *NHRCR can be found here:*  
<https://www.dhhs.nh.gov/programs-services/environmental-health-and-you/radiological-health/new-hampshire-radiation-machines>

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