



# Irradiator Technology



## Inspections & Licensing

# Irradiator Technology

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- **Self-Shielded Irradiators**
  - Safety Inspections
  - Licensing
  - Increased Controls Inspections
  
- **Panoramic Irradiators**
  - Safety Inspections
  - Licensing
  - Security Inspections

# Student Handout

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- **Slides**
  - **Self-Shielded Irradiators Inspections & Licensing**
  - **Irradiator Increased Controls Lessons Learned**
  - **Panoramic Irradiator Inspections and Licensing**
- **Inspection Checklists**
  - **Self Shielded Irradiators**
  - **Increased Controls**
  - **Panoramic Irradiators**
- **CD with Slides, Insp. Checklists, NRC Inspection Procedures; and References**

# Inspection Preparations

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- **Refresh yourself with technology**
  - Review student manual
  - Perform website searches
- **Obtain copies of 10 CFR Parts 19, 20, 30, & 36**
- **Obtain copy of inspection procedure**
  - Review procedure requirements
  - Review each CFR reference

# Inspection Preparations

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- **Review docket file**
  - **Current license and amendments**
  - **License application – drawings, equipment, license tie-downs (commitments), AUs**
  - **Recent events that need to be addressed during inspection**
  - **Recent inspection reports and open items**
  - **NMED Events**

# Inspection Preparations

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- **Develop an inspection plan**
- **Inspection checklist**
  - Merge inspection requirements, regulations, open items, NMED concerns
  - Useful for entrance and exit briefings
  - Helps keep inspection focused

# Inspection Objectives

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- **Determine if licensed activities are being conducted in a manner that will protect the health and safety of workers and the general public**
- **Determine if licensed activities are being conducted in accordance with regulatory requirements**

# Focus Areas

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- **1) Security & Control of licensed materials**
- **2) Shielding**
- **3) Comprehensive safety measures**
- **4) Radiation dosimetry program**
- **5) Radiation instrumentation and surveys**
- **6) Radiation safety training and practices**
- **7) Management oversight**



# Inspection Focus

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- **Focus areas are a performance expectation**
- **Address measures that prevent**
  - **Overexposures**
  - **Incidents**
  - **Release, loss, or unauthorized use of RAM**

# Completion of Focus Areas

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- **IF licensee performance is satisfactory based on a general review of the focus area, THEN that focus area is complete**
- **IF licensee did not meet performance expectation in a focus area, THEN conduct a more thorough review.**
  - **Additional sampling**
  - **Adequacy of procedures**
  - **Selected records**

# Conduct of the Inspection

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- **Do not knowingly allow an unsafe work practice or violation, in order to provide basis for enforcement action**
- **Self Shielded irradiators are located in a medical or research environment and typically do not require personal protective equipment**
- **Panoramic irradiators are located in an industrial environment and routinely require hard hats, safety glasses, steel-toed shoes, and possibly hearing protection**

# Collect Information To Support Violations

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- **Copies of records, interview notes**
- **Understand how violation fits in the big picture**
  - **Was violation isolated and did it affect patient or worker safety or have that potential?**
  - **What information does licensee have to mitigate or de-escalate the violation**
    - **E.g., Alarm System may be found not functioning, but personnel are present 24/7**