

UNIVERSITY OF MISSOURI
ANNUAL INSPECTION PLAN 2007-2008

Licensee: University of Missouri
Columbia, Missouri

Licenses No.: 24-00513-32 (broadscope)
24-00513-39 (R&D Type A)

Inspection Dates:
November 2007
November 2008

Inspectors: Darrel Wiedeman

Accompanying Personnel: Staff from materials Licensing if available and/or available materials inspector.

Purpose/Scope of Inspection: Assess the adequacy of the university's NRC-licensed activities conducted under its broad medical, research programs and Cyclotron activities.

Review of the broadscope license will not include all aspects of the program, excluding selected diagnostic nuclear medicine and certain routine brachytherapy programs, unusual brachytherapy cases will be reviewed, e.g., tongue, nose, eye plaques etc. The 2007 inspection of the broadscope medical program assessment will focus on the brachytherapy and radiopharmaceutical programs and implementation of changes in their program for written directives, radiation safety committee and radiation safety office involvement and oversight. The CY 2008 inspection will include attendance at the licensee's quarterly Radiation Safety Committee meeting (if possible).

The CY 2008 inspection will focus on the research programs including animal and human (*in-vitro* and *in-vivo*). Both inspections will include an on-site inspection of 20% of the licensee's temporary job-sites and other locations of use. In addition, during each inspection the inspector will review the licensee's incident files for 2007 & 2008 and determine (on a case by case basis) if proper followup and corrective actions were taken. The inspector will close-out all open items (previous violations and NMED issues).

The CY 2007 and 2008 inspections will include tours and familiarization with the proposed Cyclotron facility and manufacturing/transfer of yttrium-90, lutetium-177, holmium-166 and samarium-153. The CY 2008 inspection will include a site visit to any active temporary job sites. Both (CY 2007 and 2008) inspections will focus on the licensee's corrective action associated with any previous violations identified. The CY 2007 inspection will also include a complete inspection of the brachytherapy and radiopharmaceutical therapy programs at the University Hospital and Clinic, Columbia Regional Hospital and Ellis Fischell Cancer Center.

Inspection of the broadscope program will cover the following areas:

1. Radiation Safety Officer and RSS
(1) Program awareness

- (2) Involvement & Oversight
- (3) Communications with RSC and RSO

2. Communication between the RSS and authorized users

3. Program Scope

a. Medical (Brachytherapy and Human Research) **2007 Inspection**

- (1) Users and uses
- (2) Locations of use

b. R & D **2008 Inspection**

- (1) Users and uses
- (2) Locations of use

4. Training, Retraining and Qualifications **2007 and 2008 Inspections**

- a. Authorized User qualifications and training; physicians and researchers **2007 inspection**
- b. Training/Retraining of radiation workers and ancillary staff including portable gauge users. **2008 inspection**

5. Personnel Radiation Protection **2007 and 2008 Inspections**

a. External

- (1) Control and Monitoring
- (2) ALARA

b. Internal

- (1) Control and Monitoring Including Bioassays

6. Security of RAM in use and in storage **2007 and 2008 Inspections**

7. Transportation of RAM around campus **2008 Inspection**

8. Waste Disposal and Effluents **2008 Inspection**

- a. Procedures and Methods
- b. Adequacy of Controls
- c. Effluents, only if licensee has Comply code completed
- d. Review former burial practices (10 CFR 20.304)

9. Independent Measurements **2007 and 2008 Inspections**

- a. Use and Storage Area Tours and Surveys; medical & research areas and or formerly used buildings (decommissioning staff may be involved if any timeliness and/or decommissioning issues are identified.

10. Other Items, as identified during the Inspection.

