



Radiation Use

Category: Health and Safety;

Jurisdiction: Vice President, Administration and Finance; Vice President, Research and Innovation

Approval Authority: Executive Team;

Established on: April 15, 2008;

Amendments: None.

1. Preamble

In Canada, the use of radioactive materials is federally regulated by the Nuclear Safety and Control Act, in order to safeguard the health of all Canadians. Regulatory documents and guidelines for dealing with radiation hazards in laboratories have been developed by the Canadian Nuclear Safety Commission (CNSC).

It is requirement of federal legislation that all activities involving radioactive materials are licensed by the CNSC; therefore Lakehead University must maintain control of radioactive hazards on campus to ensure compliance with applicable federal legislation, guidelines and regulatory documents.

The Board of Governors of Lakehead University recognizes and accepts its responsibility for controlling hazards that may be associated with teaching and research activities.

It is the responsibility of Lakehead University to manage the risk associated with radiation hazards in order to provide faculty, staff, students and researchers access to radioactive materials while ensuring the safety of all parties.

The Lakehead University Radiation USE Policy, together with associated guidelines, procedures and training (Appendix A), constitutes The Lakehead University Radiation Safety

Program (see additional documents on Lakehead's Health and Safety Website - <http://hr.lakeheadu.ca/wp/?pg=140>). The Radiation Safety Program will be managed by the Radiation Safety Officer overseen by the Director of Human Resources and the Vice-President (Research). All faculty, staff, researchers and students who work with radiation hazards will act in accordance with this policy which steers and monitors a series of procedures for the internal verification and enforcement of licensed activities authorized by the Canadian Nuclear Safety Commission (CNSC) and Lakehead University Internal Radiation Permit system.

The Radiation Safety Program is based on the system of internal permits granted under the Consolidated Licence. As the entire program operates under one licence granted by the CNSC, non-compliance of one individual may jeopardize the licence for the entire University. It is therefore imperative that all persons at Lakehead University observe and comply with the conditions of their permit and this policy.

2. Definitions

ALARA - As Low As Reasonably Achievable

CNSC - Canadian Nuclear Safety Commission, agency that regulates the possession and the use of radioactive materials through a licensing process.

Consolidated Licence - a licence issued to Lakehead University by the Canadian Nuclear Safety Commission for the possession and use of prescribed radioactive materials and devices.

High Risk - immediate health, safety, environment or security risk.

Individual User - any member of the University Community listed on an internal permit, working under the direction of a Permit Holder.

Internal Radiation Permit - issued by the Radiation Safety Officer to qualified individuals that outlines the conditions, amounts and locations where specified radioactive materials may be used.

Major Offence - a violation of internal permit conditions by an individual user, or the permit holder that poses an immediate moderate to significant risk to safety, health, security and/or places the CNSC Consolidated Licence in jeopardy. Examples include but are not limited to:

- food/drink in radioisotope area
- contamination
- inadequate monitoring
- substantial dose to workers
- lack of training
- unauthorized possession of radioactive materials
- inadequate storage
- improper waste disposal
- incomplete records
- security breaches
- multiple minor offences

Minor Offence - a breach in procedures which poses no immediate risk to safety, health, environment or security and does not jeopardize the CNSC Consolidated License. The contravention requires corrective action. Examples include but not limited to:

- inadequate posting of required permits or warning signs
- inappropriate use of radiation warning labels
- inappropriate segregation/identification of radioactive waste

Permit Holder - an individual who has successfully applied and received a Lakehead University Internal Radiation Permit and directs or supervises the use of radioactive materials (i.e. Principle Investigator, Lab Manager, or Senior Technician).

Radiation Safety Officer (RSO) - specialist with formal training and designated by the University to implement and maintain the Radiation Safety Program.

3. Responsibilities of the Permit Holder

The Permit Holder shall:

- Apply for and work within the conditions of a Lakehead University Internal Radiation Permit.
- Ensure that all work with radioactive materials under an Internal Permit proceeds in accordance with Lakehead's Radiation Safety Manual, Lakehead's Standard Operating Procedures, Internal Permit conditions, Federal legislation and CNSC regulatory documents (Appendix A);
- Ensure that all purchases, acquisitions and transfers of radioactive materials at Lakehead University have prior approval from the RSO; all radioactive materials must be ordered through the centralized ordering system. Under no circumstances are radioactive materials to be acquired using direct invoicing or using purchasing cards. Ordering and shipping/receiving procedures are specified in Lakehead University Radiation Safety Manual.
- Ensure that all radioactive waste is handled in accordance with permit conditions, consolidated licence granted by the CNSC, Radiation safety manual, and Lakehead University's hazardous waste disposal procedure;
- Ensure any equipment or areas handling radioactive materials are decontaminated in accordance with the Lakehead University Radiation Safety Manual and Decommissioning of Laboratories and Laboratory Equipment Policy;
- Ensure monitoring procedures including frequency of the dosage and replacement of personal monitoring badges are defined in the Lakehead University Radiation Safety Manual and on all Internal Permits issued.

4. Non-compliance with the Policy

All complaints or concerns regarding issues of non-compliance will be investigated by the RSO. Failure to comply with this policy or procedure established by the Radiation Safety Program, or requirements of an internal permit will result in disciplinary actions. A progressive

scale of enforcement has been adopted based on the level of risk and degree of repetition of incidents related to non-compliance with this policy and permit conditions (Appendix B).

5. Evaluation

This policy shall be reviewed by the Vice President (Research) and Director of Human Resources at two-year intervals, or at any time to reflect changes in Federal legislation.

Appendix A – List of Legislation, Regulatory Documents & Procedures/Manuals

Legislation

Nuclear Safety and Control Act

General Nuclear Safety and Control Regulation

Radiation Protection Regulations

Nuclear Substances and Radiation Devices Regulation

Packaging and Transport of Nuclear Substances Regulation

Regulatory Documents

P-290 Managing Radioactive Waste

Regulatory Guide G-121 Radiation in Educational, Medical and Research Institutions

Regulatory Guide G-129 Keeping Radiation Exposures "As Low As Reasonably Achievable (ALARA)"

R-52 (rev. 1) Design Guide for Basic and Intermediate Level Radioisotope Laboratories

Procedures/Manuals

Lakehead University Radiation Manual

RSOP #01-2007 - Detection Meters

RSOP #02-2007 - Action Levels

RSOP #03-2007 - Sealed Sources

RSOP #04-2007 - Dosimetry TLD Badges

RSOP #05-2007 - Disposal of Radioactive Waste

RSOP #06-2007 - Security of Radioactive Materials

RSOP #07-2007 - Contamination Monitoring

Appendix B – Procedures for Non-Compliance

The RSO will investigate all claims of non-compliance and when found to be of merit will proceed as follows:

LEVEL A: HIGH RISK

The Radiation Safety Officer will take immediate action when there is an immediate or perceived high risk to health, safety, environment or security. On behalf of the Vice President (Research) and the Director of Human Resources, the Radiation Safety Officer has the authority to temporarily stop any work, process or laboratory considered to be in violation of University procedures or CNSC regulations. The use of radioactive materials or radiation producing devices at the University may be temporarily suspended. The Faculty Dean, Vice President (Research) and/or Director Human Resources will be informed directly of any such action.

LEVEL B: MAJOR OFFENCE

Stage 1: Non-compliance with radiation safety requirements is investigated and confirmed by the University Radiation Safety Officer. A copy of the inspection report is forwarded to the Permit Holder and a deadline for corrective action and reporting is specified by the Radiation Safety Officer.

Stage 2: If the Permit Holder has not replied by the deadline or same infraction is observed upon a follow up inspection or again within one year, the corrective action deadline is revised. This notice is copied to the Departmental Chair and/or Faculty Dean.

Stage 3: If the same infraction is observed for a third time during a follow up inspection, or within one year, or the Permit Holder has not replied by the second deadline, the Radiation Safety Officer advises the Vice President (Research) and/or the Director of Human Resources. The RSO may impose temporary work stoppage, and/or permit suspension and the matter is referred to the Vice President (Research) and Director of Human Resources pending formal

sanctions. Sanction options include: permanent suspension of purchasing privileges for radioactive materials, suspension of internal permit and confiscation of radioactive materials, or revocation of internal permit.

LEVEL C: MINOR OFFENCE

Step 1: Upon first infraction, the Permit Holder is given a verbal warning and a deadline for recommended corrective action by the Radiation Safety Officer.

Step 2: Upon a second same infraction within one year, the Radiation Safety Officer issues a written notice of the infraction to the Permit Holder. Corrective action, compliance date and the consequences of further infractions are outlined. The Department Chair and/or Faculty Dean are notified.

Step 3: Upon the third occurrence of same infraction within one year, the internal permit is temporarily transferred by the Radiation Safety Officer to another qualified Permit Holder or Chair of the Department. Further work and purchases under this permit are only allowed under the direct control of the Departmental Chair or another senior Permit Holder.

Step 4: Upon a fourth occurrence, should the Permit Holder wish to continue working with radioactive materials, the Permit Holder must show grounds as to why the internal permit should not be revoked. A special meeting will be conducted with the Permit Holder, the RSO, Chair of the Department and Faculty Dean. The RSO, Chair and Dean will make a formal recommendation to the Vice President (Research) and/or Director of Human Resources who may choose to reinstate the permit.

If corrective actions have not been completed by established timelines, the enforcement is escalated to the next level. If multiple infractions are noted, then the sequence in the progressive enforcement will begin with the most serious infraction.

The RSO will report findings to the Vice President (Research) and/or the Director of Human Resources in a formal letter detailing the following:

1. The issue
2. The alleged infraction
3. Steps taken to resolve the issue
4. Recommendations of the RSO and/or Dean and Department Chair (Level C; Step 4 actions)
5. Time period for response to be made.

Should the Vice President (Research) have a conflict of interest, the formal letter will be directed to the University President.

Any issues of non-compliance greater than one year old will not be considered in further actions, provided that they are adequately addressed prior to the deadline.

The Radiation Safety Officer reserves the right to bypass any level in the enforcement policy if a serious violation occurs.

APPEALS TO SANCTIONS

Permit holders may appeal any of the sanctions imposed to the Director of Human Resources and/or the Vice President (Research).

Review Period: 2 years;

Date for Next Review: 2022-2023;

Related Policies and Procedures: To be determined;

Policy Superseded by this Policy: None.

The University Secretariat manages the development of policies through an impartial, fair governance process, and in accordance with the Policy Governance Framework. Please contact the University Secretariat for additional information on University policies and procedures and/or if you require this information in another format:

Open: Monday through Friday from 8:30am to 4:30pm;

Location: University Centre, Thunder Bay Campus, Room UC2002;

Phone: 807-346-7929 or Email: univsec@lakeheadu.ca.