

## ACADEMIC COUNCIL REPORT

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**SESSION:**

Public

**ACTION REQUESTED:**

Decision   
Discussion/Direction   
Information

**TO:** Academic Council

**DATE:** February 5, 2021

**PRESENTED BY:** Jennifer Freeman (ORS) and Francis Arnaldo (ORS)

**SUBJECT:** Radiation Safety Policy

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**COMMITTEE/BOARD MANDATE:**

- In accordance with Article 1.3(b) of By-law No. 2, and the Policy Framework, Academic Council will be consulted on the establishment of any research policies that are organizational in nature, or those implemented to fulfil legal compliance obligations. The Radiation Safety Policy falls within the Legal, Compliance and Governance category of the Policy Framework.
- The Office of Research Services (ORS) is presenting the draft Radiation Safety Policy to Academic Council (AC) for consultation.

**BACKGROUND/CONTEXT & RATIONALE:**

- The University is a leader in Nuclear Science teaching and research.
- The University does not have a Radiation Safety Policy, but has been functioning with a strong compliance program outlined in the Radiation Safety Manual.
- A Radiation Safety Policy strengthens the University's commitment to providing a safe work environment that are in line with the applicable regulatory requirements.

**RESOURCES REQUIRED:**

- The University is mandated to appoint a Radiation Safety Officer (RSO) on all CNSC Licenses issued to the University. The RSO ensures the requirements of the legislation are met.
- The University must have a radiation safety program in place – some aspects of the program requires monetary resources to function (e.g. dosimetry, annual leak testing, annual device calibration, etc.). The costs are shared between ORS, the faculties/departments, and the workers/students.

- Compliance measures and practices are currently in place, as such, the University is already allocating resources.

### **IMPLICATIONS:**

- Compliance with the applicable regulatory requirements is currently administered by the Radiation Safety Program, which is reviewed by the Radiation Safety Committee every 3 years. The Radiation Safety Policy makes clear policy statements and ensures that the policy statements found in the Radiation Safety Manual are governed by the Policy Framework and are available in the Policy Library.
- Research, teaching and other activities involving ionizing and non-ionizing radiation and radiation emitting devices will fall under the policy. Faculty and staff involved in those activities will fall under the policy.
- A radiation safety policy will put Ontario Tech in line with other Canadian Universities

### **CONSULTATION:**

**June 9, 2015 (Radiation Safety Committee):** Radiation Safety Committee determined that a stand-alone Radiation Safety Policy would further strengthen compliance framework at the university.

**Dec 18, 2015 (Radiation Safety Committee):** Discussed suggested revisions submitted by the committee members. RSO to revise and circulate revised version to committee for approval.

**Feb 22, 2016 (Research Board):** reviewed revised copy and requested changes.

**July 5, 2016 (Research Board):** reviewed and modified the policy.

**November 7, 2016 (Policy Advisory Committee):** Recommended revisions. Revisions made by ORS.

**October 8, 2020 (Radiation Safety Committee):** Discussions resume on Radiation Safety Policy and finalized for submission to University Secretariat and General Consul's Office.

### **COMPLIANCE WITH POLICY/LEGISLATION:**

- A Radiation Safety Policy will complement the University's Health and Safety Policy and the Radiation Safety Manual by capturing the additional requisites for radiation safety.
- A Radiation Safety Policy is in compliance with the applicable legislation:

<b>• Legislation</b>	<b>Administered by</b>
Nuclear Safety and Control Act, and all applicable regulations under the Act.	Canadian Nuclear Safety Commission (CNSC)
Occupational Health and Safety Act	Ontario Ministry of Labour (MOL)
R.R.O. 1990, Reg. 861 X-Ray Safety	Ontario Ministry of Labour
Healing Arts and Radiation Protection Act and Regulations	Ontario Ministry of Health and Long-Term Care (MOHLTC)
R.R.O 1990, Reg. 543 X-Ray Safety Code	Ontario Ministry of Health and Long-Term Care
Radiation Emitting Devices Act	Health Canada
Radiation Emitting Devices Regulations	Health Canada

**NEXT STEPS:**

- Consultation and approval from:
  - Administrative Leadership Team
  - Online Consultation
  - Audit and Finance Committee
  - Board of Governors (approval)

**SUPPORTING REFERENCE MATERIALS:**

- Radiation Safety Policy



Classification	LCG XXXX
Framework Category	Legal, Compliance and Governance
Approving Authority	Board of Governors
Policy Owner	VP Research and Innovation
Approval Date	DRAFT FOR REVIEW
Review Date	
Supersedes	

## RADIATION SAFETY POLICY

### PURPOSE

1. This policy sets out the standards, requirements and responsibilities that apply to research and scholarly activities involving ionizing and non-ionizing radiation, including nuclear substances and radiation emitting devices at the University of Ontario Institute of Technology (Ontario Tech).

### DEFINITIONS

2. For the purposes of this Policy the following definitions apply:

**“Action Level”** means a specific dose or other parameter that, if exceeded, may indicate a loss of control of part of the radiation safety program.

**“Authorized Users”** means any University Member who has been authorized to handle ionizing or non-ionizing radiation in accordance with the requirements set out in the Radiation Safety Program.

**“ALARA”** (as low as reasonably achievable) means an optimization tool in radiation protection used to keep individual, workplace and public dose limits as low as reasonably achievable, social and economic factors being taken into account. ALARA is not a dose limit; it is a practice that aims to keep dose levels as far as possible below regulatory limits. (ALARA)

**“CNSC”** means the Canadian Nuclear Safety Commission, the federal regulatory agency whose mandate is to establish and enforce the Nuclear Safety and Control Act and Regulations. The CNSC regulates the use of nuclear energy and materials to protect health, safety, security and the environment, and to implement Canada's international commitments on the peaceful use of nuclear energy.

**“Ionizing Radiation”** means particles, X-rays, or gamma rays with sufficient energy to cause ionization in the medium through which it passes.

**“MOL”** means the Ontario Ministry of Labour, the provincial regulatory agency whose mandate is to establish and enforce the Occupational Health and Safety Act, which includes the X-ray Safety regulation and takes into consideration the American National Standards Institute (ANSI) Z136 series of laser safety standards (the “ANSI” Standards).

**“Non-Ionizing Radiation”** means any type of electromagnetic radiation that does not carry enough energy to ionize atoms or molecules.

**“Nuclear Substance”** means:

- a) deuterium, thorium, uranium or an element with an atomic number greater than 92;
- b) a derivative or compound of deuterium, thorium, uranium or of an element with an atomic number greater than 92;
- c) a radioactive nuclide;
- d) a substance that is prescribed as being capable of releasing nuclear energy or as being required for the production or use of nuclear energy;
- e) a radioactive by-product of the development, production or use of nuclear energy; and
- f) a radioactive substance or radioactive thing that was used for the development or production, or in connection with the use, of nuclear energy.

**“Radiation”** means, for the purpose of this policy:

- a) energy in the form of electromagnetic waves or acoustical waves with the potential to harm;
- b) the emission by a nuclear substance, the production using a nuclear substance, or the production at a nuclear facility of an atomic or subatomic particle or electromagnetic wave with sufficient energy for ionization.

**“Radiation device”** means any device that contains more than the exemption quantity of a nuclear substance and that enables the nuclear substance to be used for its radiation properties.

**“Radiation emitting device”** means any device that is capable of producing and emitting radiation.

**“Radioisotope Laboratory”** means a conventional laboratory that is permitted to house radioactive materials and all activities within the laboratory are prescribed by a radioisotope permit.

**“Radiation Safety Program”** means the documented policies and procedures developed to control the risks and hazards associated with ionizing and non-ionizing radiation. The radiation safety program includes x-ray safety and for the purposes of this policy includes the laser safety program. These programs are documented as the Radiation Safety Manual and the Laser Safety Manual and outline the university’s responsibility and oversight for the protection of personnel against the harmful effects of radiation.

**“University Member”** means any member of the Ontario Tech community who teaches, conducts research or works at or under the auspices of the University and includes any of the following:

- A person who is an employee of the university;
- Any person who is an appointee (including adjunct faculty, emeritus, a volunteer on research related committees and boards) of the University , or
- Student, post-doctoral fellows, visiting scholars, contractors, and any other research personnel while they are engaged in research or scholarly activities under supervision of a Member.

### **SCOPE AND AUTHORITY**

3. This policy applies to all activities at the University involving ionizing and non-ionizing radiation and radiation emitting devices defined under this Policy.

4. The Vice-President Research and Innovation, or successor thereof, is the Policy Owner and is responsible for overseeing the implementation, administration and interpretation of this Policy.
5. On behalf of the Vice-President, Research and Innovation, the Radiation Safety Officer and the Radiation Safety Committee have the authority to immediately stop any use of ionizing and non-ionizing radiation sources and radiation emitting devices which deviates from the approved conditions set out in a Permit or is deemed to be in non-compliance with the applicable legislation and regulations and/or university policy or procedures as described under the Radiation Safety Program.

## **POLICY**

The University is committed to protecting all University Members and the environment from any adverse effects resulting from the use of ionizing and non-ionizing radiation for research and scholarly activities at the University. To this end, the University will maintain a radiation safety program to ensure the safe use, storage, transfer and disposal of radiation and radioactive materials in compliance with all legislated requirements, University Policies and Procedures.

### **6. General**

- 6.1. The University holds Licences from the Canadian Nuclear Safety Commission for the use of nuclear substances and radiation devices.
- 6.2. The University is registered with the Ministry of Labour for the use of x-ray devices on campus.
- 6.3. All procurement, use, storage, transfers, and disposal of these material/devices by a University Member under the auspices of the University is governed by the terms of the CNSC Licence(s) or MOL approval letter.
- 6.4. The University adheres to the safety standards outlined in the ANSI Standard for the Safe Use of Lasers for all laser equipment.
- 6.5. The University shall establish a Radiation Safety Program for workplace safety and regulatory compliance in accordance with CNSC requirements, the ANSI Standard and the X-Ray Safety Regulation. The internal responsibility system shall be fundamental to the effective operation of the Radiation Safety Program.
- 6.6. All research and scholarly activities at the University involving ionizing, non-ionizing and radiation emitting devices must be approved by the Radiation Safety Committee prior to any activities commencing.
- 6.7. Authorized Users are accountable for ensuring compliance with all relevant legislation, regulations, guidelines and University policies and procedures.
- 6.8. The University recognizes its responsibility to act with due diligence where ionizing, non-ionizing materials and radiation emitting devices are concerned.
- 6.9. The University shall only support work for which it is licensed to by the CNSC or approved for by the MOL.
- 6.10. All occupational exposures shall be limited in accordance with the ALARA (as Low As Reasonably Achievable) principle and within CNSC and MOL prescribed dose limits.

- 6.11. University Members who, on reasonable grounds, believe that a University place or vehicle is contaminated in excess of the prescribed limit by a radioactive prescribed substance, or an event has occurred that is likely to result in the exposure of persons or the environment to a dose of radiation in excess of prescribed limits, shall immediately notify the Radiation Safety Officer and appropriate authorities about the location and circumstances of the contamination or event.

## **7. Non-Compliance**

- 7.1. All members of the University community are subject to the requirements of this policy. Violations place the University at significant risk and are subject to appropriate corrective administrative, academic or non-academic discipline and could result in disciplinary action up to and including termination of the member's position with the University, or in the case of a student, an academic suspension. Any disciplinary action arising from a violation of this policy will be conducted in accordance with the collective agreement that governs the member, if applicable. Significant legal penalties may also be assessed by the Canadian Nuclear Safety Commission under the authority of the Nuclear Safety and Control Act and Regulations or the Ontario Ministry of labour under the authority of the Ontario Occupational Health and Safety Act and X-Ray Safety Regulation.

## **MONITORING AND REVIEW**

8. This Policy will be reviewed as necessary and at least every three years. The Director, Research Services, or successor thereof, is responsible to monitor and review this Policy.

## **RELEVANT LEGISLATION**

9. Nuclear Safety and Control Act  
Regulations under the Nuclear Safety and Control Act  
Occupational Health and Safety Act  
R.R.O. 1990, Reg. 861 X-Ray Safety  
Healing Arts and Radiation Protection Act and Regulations  
R.R.O 1990, Reg. 543 X-Ray Safety Code  
Radiation Emitting Devices Act

## **RELATED POLICIES, PROCEDURES & DOCUMENTS**

10. Ontario Tech Health and Safety Policy  
Ontario Tech Radiation Safety Manual  
Procurement Policy and Procedures  
CNSC Licenses issued to the University Of Ontario Institute Of Technology  
CNSC Regulatory Guidance Documents

ANSI Standard for the Safe Use of Lasers

MOL X-Ray Permits issued to the University Of Ontario Institute Of Technology

Safety Code 34. Radiation Protection and Safety for Industrial X-Ray Equipment