



UMEÅ UNIVERSITET

Rule for purchasing radioactive sources

Type of document:	<i>Rule</i>
Date:	<i>2020-08-25</i>
Reg. No:	<i>FS 1.1-1674-20¹</i>
Approved by:	<i>Vice-chancellor</i>
Validity:	<i>Until superseded or revised</i>
Field:	<i>Buildings, IT, Environment and Safety</i>
Office in charge:	<i>Buildings office (lokalförörjningsenheten)</i>
Replaces document:	<i>"Regel för inköp av joniserande strålning" fastställd av rektor 2016-20-12, Dnr: FS 1.1-2122-16.</i>

¹ This document has been translated from Swedish into English. If the English version differs from the original, the Swedish version takes precedence.



UMEÅ UNIVERSITET

Content

1.	Description	3
2.	Background	3
3.	Definitions	4
4.	Purchasing radioactive sources	5
4.1.	Technical equipment	5
4.2.	Open and sealed radioactive sources	5



UMEÅ UNIVERSITET

1. Description

This rule describes what is needed to comply with Swedish laws and the regulations from the Swedish Radiation Safety Authority when purchasing radioactive sources. This document also describes the documentation, and the communication with Umeå university's radiation protection organization, that is needed to comply with the university's regulations for radiation protection.

This document has been translated from Swedish into English. If the English version differs from the original, the Swedish version takes precedence.

2. Background

The purpose of the Swedish Radiation Protection Act is to protect the people and the environment from the harmful effects of radiation. Umeå University is classified by the Swedish Radiation Safety Authority as an agency subject to a permit, which means that the university must apply for, and be granted, a permit to work with ionizing radiation. The university has two permits: one group permit for scientific and educational purposes (SSM2019-1607, CU 08205, valid through 2024-03-12); and one for exposing human subjects to radiation for medical purposes (SSM2016-4122, Am-12069, valid through 2021-09-30).

The group permits cover open and sealed sources, as well as technical equipment that can produce ionizing radiation and that have been registered with the Swedish Radiation Safety Authority. The permits also cover discarded sources and radioactive waste.

The permit for exposing human subjects to radiation for medical purposes covers the transfer, lease, acquisition, holding, and use of X-ray equipment intended for medical diagnostic imaging. It also covers the Department of Public Health and Clinical Medicine's, and enheten för arbets- och miljömedicin's (the Unit for Occupational and Workplace Medicine, at the University Hospital of Umeå), work with iDXA and CT scanners.

The Vice-Chancellor of Umeå University is the permitholder, and thereby the utmost responsible for the work involving ionizing radiation at the university. The Vice-Chancellor is responsible for ensuring that departments working with ionizing radiation have access to qualified and properly educated staff and support functions.

To be granted a permit for work involving ionizing radiation, Umeå university must fulfill certain conditions. One of these conditions is that there must exist a university common governing document describing how to purchase radioactive sources, and how to document it.



UMEÅ UNIVERSITET

3. Definitions

Radioactive waste plan

A department that produces radioactive waste must have a local waste disposal plan, and a local code of rules and procedures, that describes how the produced waste is to be disposed of. The department must document, in terms of activity per isotope, how much radioactive waste that is sent to Region Västerbotten's waste disposal room. The Head of the Department/Director is responsible for ensuring that there exists a local code of procedures that ensures that the information is documented correctly. The Head of the Department/Director is responsible for ensuring that the documentation is saved locally, and that a summary of the disposed waste is sent yearly to the university's Radiation Protection Coordinator before the end of April.

Annual inventory

Umeå university must conduct an annual inventory of radioactive sources and equipment that can generate ionizing radiation. The Head of the Department/Director is responsible for the annual inventory at their local agency and for making sure that the annual inventory form is filled out and sent to the Radiation Protection Coordinator. The Radiation Protection Coordinator compiles the inventory forms from all departments/centers and prepares the annual inventory report that is sent to the Swedish Radiation Safety Authority.

Radiation Protection Expert

The Radiation Protection Expert at Umeå University is an advisory support function. Local agencies working with ionizing radiation should seek advice from the Radiation Protection Expert regarding how to protect their staff, the public, animals, and the environment from ionizing radiation.

Radiation Protection Coordinator

The Radiation Protection Coordinator at the Buildings office coordinates the radiation protection work for the university on a general level. The Radiation Safety Coordinator at Umeå University is the university's contact towards the Swedish Radiation Protection Authority.

Swedish Radiation Safety Authority

The Swedish Radiation Safety Authority (SSM) is both a permit testing and supervisory authority. The authority sets regulations for work involving ionizing radiation, and they review agencies, such as Umeå University, to ensure that they are working responsibly and that they are following the rules and regulations. The authority also reviews applications and grants permits for work involving ionizing radiation.

Agency and local agency

In the permit granted by the Swedish Radiation Safety Authority, Umeå University is counted as one agency. Faculties, Departments or Research Centers are in this document referred to as local agencies, and they are subordinate to, and included, in the agency subjected to the permit.



UMEÅ UNIVERSITET

4. Purchasing radioactive sources

The head of department/Director is responsible that all purchases of radioactive sources is in alliance with Swedish law, the Swedish Radiation Protection Authority and the rules stipulated by the University. The responsibility includes purchase, handling, use and disposal of radioactive sources. The head of department/Director has the responsibility to ensure that only those with the right qualifications does this kind of work.

For more information regarding the university's radiation protection courses, se the university common governing document *Rules for radiation protection, chapter 9*.

4.1. Technical equipment

The Radiation Protection Expert must be consulted before the purchase of technical equipment capable of emitting ionizing radiation (X-ray equipment, EC detectors, liquid scintillators etc.).

A report must be sent to the Radiation Protection Coordinator once the purchase order has been made. The report must include a copy of the purchase order, the responsible department/center, as well as the make, model, and serial number of the equipment.

For EC detectors and liquid scintillators, the following information must also be included:

- Type of radioactive source
- Activity (in Bq) and activity date.

For X-ray equipment:

- Maximum tube voltage (in kV),
- Maximum tube current (in mA).

4.2. Open and sealed radioactive sources

The Radiation Protection Expert must be consulted before the purchase of open radioactive sources containing an isotope not included in the local agency's annual inventory for the previous year. It is not necessary to consult the Radiation Protection Expert if the isotope was included on last year's annual inventory and in the local agency's waste disposal plan for radioactive waste. The Radiation Protection Coordinator must also be consulted if the purchase will result in a deviation from the local agency's waste disposal plan for radioactive waste.

The Radiation Protection Expert must always be consulted before the purchase of fissionable isotopes (Uranium, Thorium, Plutonium), regardless of whether the conditions stipulated in the previous paragraph are fulfilled.

A report must be sent to the Radiation Protection Coordinator once the purchase order has been made. The report must include a copy of the purchase order, the responsible department/center, as well as

- Activity (in Bq or Bq/ml) and activity date
- Decay type (alpha, beta, or gamma)