1.0 Purpose

To define leak test procedures for Sealed Source radioactive material to meet legal requirements.

2.0 Policy

In accordance with CNSC regulations, leak tests shall be performed on all Sealed Sources Requiring Leak Tests at the University as outlined in this procedure.

3.0 Definitions

Sealed Source Radioactive Material (Sealed Sources) Sealed sources are radioactive materials that are encapsulated or encased in such a way that they are extremely unlikely to be absorbed into the body and therefore present only an external radiation hazard. An example would be small calibration sources and Mossbauer spectroscopy sources.

Sealed Sources Requiring Leak Tests Except for gaseous sources or sources of tritium, all sealed sources over 50 MBq and all devices containing sealed sources over 50 MBq must be leak tested.

Devices Containing Sealed Sources Devices containing integrated sealed sources that are not normally removable. Examples are moisture density gauges, electron capture chromatographs, and X-ray fluorescence equipment.
4.0  Responsibilities

4.1  The Permit Holder is responsible to ensure

4.1.1  If an agency other than the University EHSO is used to measure leak tests, the Permit Holder shall keep copies of each sampling certificate and the leak test certificate and is responsible to ensure that a copy of each is forwarded to the Radiation Safety Officer.

4.1.2  Copies of every leak test sampling certificate and the leak test certificate shall be kept in the Radiation Safety Records binder for at least the last eight years.

4.1.3  A written step-by-step procedure for wipe sampling each type of sealed source and each type of containment is also required. One copy of this procedure shall be kept in the Radiation Safety Records binder, and a second copy shall be forwarded to the Environmental Health & Safety Office. Such a procedure may be provided in the operator’s manual or may be available from the manufacturer. Contact the Environmental Health & Safety Office for assistance.

4.1.4  Leak tests are performed at the frequency required by the conditions of the Internal Radioisotope Permit.

4.2  Frequency of leak testing

4.2.1  A leak test is required prior to transferring any source over 50 MBq to another Licensee.

4.2.2  Sealed Sources: Except for gaseous sources or sources of tritium, leak tests shall be performed for all sealed sources of more than 50 MBq. The frequency of leak testing shall be:

   a) Immediately after any incident that may result in source damage.
   b) Every 24 months, for sealed sources that are recorded on the Permit “approved usage” declared as STORAGE ONLY.
   c) Every six months for all other sources.

4.2.3  Devices Containing Sealed Sources: Except for gaseous sources or sources of tritium, leak tests shall be performed for all devices containing...
5.0 University Leak Test Procedure

5.1 Contact EHSO to enroll in the University Leak Test Program.

5.2 Once you are subscribed, you will be sent a leak test sampling kit.

5.3 Follow the direction therein and refer to your written step-by-step procedure for wipe sampling.

5.4. Keep a photocopy of the filled in leak test kit (sampling certificate) in the Radiation Records binder for the room in which the sealed source is stored. Record the leak test on your Sealed Source Inventory records.

5.5 When you receive the Leak Test Certificate (the measuring certificate) file it in the Radiation Safety Records binder for the room in which the sealed source is stored.

5.5.1 If a source or device fails the leak test, EHSO will notify the Permit Holder regarding the appropriate action. (added sentence, approved by RSCtee Feb 2, 2006)

5.6 In the event of any incident that may have caused damage to the source, IMMEDIATELY CONTACT the Environmental Health & Safety Office to request an emergency leak test kit. The possibly damaged source/device shall be immediately taken out of service (added sentence, approved by RSCtee Feb 2, 2006).

6.0 Record keeping

6.1.1 Copies of the leak test sampling certificate, the written procedure specific for each gauge and the leak test certificate shall be kept in the Radiation Safety Records binder for this location for at least the last eight years.

6.1.2 Leak test records and all other records required by the conditions of your Internal Radioisotope Permit are to be kept within the Radiation Safety Records binder within the room.
6.1.3 The Radiation Safety Records Binder is to be kept readily visible for inspection. When the room is decommissioned the binder and its contents are returned to the Radiation Safety Office.

6.1.4 If the binder becomes full, additional binders are available from the Environmental Health & Safety Office.

(Removed references to 'Approved Agency' approved by RPCttee November 8, 2012).