

Safety Note 72

Naturally Occurring Radioactive Material and off-site work involving ionising radiation

1. Purpose

Staff, students and visitors who work with Naturally Occurring Radioactive Material (NORM) and other sources of ionising radiation, including work carried out off-site (e.g. at a synchrotron) must

- a. Register with Health and Safety Services (HSS) by filling the [online form](#) on the HSS website;
- b. Seek prior approval from the University Radiation Protection Officer by submitting a suitable and sufficient risk assessment.

Further details of the procedure depending on the type of work can be found in Safety Code of Practice [16](#), [17](#), [18](#), [19](#), Safety Guide [20](#) and Safety Note [7](#) (available on HSS website).

2. NORM

NORM including radioactive elements found in the environment, contain uranium, thorium, potassium¹, and their radioactive decay products that emit alpha, beta and gamma radiations. These radiations can be detrimental to health, potentially resulting in cancer and other genetic effects and the NORM are toxic by inhalation, skin contact or ingestion.

NORM can be in the form of rocks, scale and other process samples (e.g. from the petroleum industry), soil samples, solutions or Radon gas. The International Atomic Energy Agency rates NORM with an activity above 10 Bq/g as hazardous. Some NORM can have significantly higher activity, e.g. scale samples from the petroleum industry.

The Ionising Radiations Regulations 2017 (IRR17) require employers who work with materials that contain small but, from a radiation protection point of view, significant amounts of NORM to take firm action to restrict radiation exposure of their employees and 'other persons' who may be affected by their work. The 'other persons' include students, visitors, contractors, members of the public and people not directly working with NORM (e.g. maintenance staff).

As a result, all Principle Investigators, managers and scientists using, storing or transporting NORM must carry out a radiation risk assessment, required by Regulation 8, IRR17 as well as the Management of Health and Safety at Work Regulations 1999, and put control measures to comply with these regulations. Often this kind of work will fall under open source [Safety Code of Practice 19](#) and will require authorisation from the University's Radiation Protection Officer.

3. Off-site work involving use of Ionising Radiation

Modern research practices increasingly require staff and students to go off-site to conduct research work. Any such work that requires the use of ionising radiation must be risk assessed in advance and approved by the University's Radiation Protection Officer. The University is required by IRR17 to reduce the radiation exposure to its staff as low as reasonably practicable and to maintain records.

If you need help and advice, please contact the [School Radiation Protection Supervisor](#) or contact the Safety Office.

November 2018

Due for revision October 2020

Reference:

1. World Nuclear Association. 2018. *Naturally-Occurring Radioactive Materials (NORM)*. [ONLINE] Available at: <http://www.world-nuclear.org/information-library/safety-and-security/radiation-and-health/naturally-occurring-radioactive-materials-norm.aspx>. [Accessed 22 October 2018].