

University Health & Safety Arrangements : Chapter 4



Radiation Safety Management

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Note.

“Senior Managers” are responsible for health and safety within their organisational unit, specified areas or as a consequence of their activities, and for any additional activities as agreed and delegated to them (eg where they accept responsibility for day-to-day safety arrangements for staff who have other line managers, for reasons of geographical or other convenience). They may be Deans, Heads of School, Directors of Institutes, Directors and Heads of Service in non-academic areas, the University Librarian, the Directors of the Manchester Museum and the Whitworth Art Gallery, and their equivalents.

Introduction

1. The University uses a large number and range of radiation sources in its teaching and research. Health and safety arrangements are generally made and enforced locally, with the central Radiation Safety Unit providing oversight, policy direction, technical and legal expertise, and guidance.
2. This chapter describes the framework for managing activities using radiation sources within the University, and outlines the responsibilities of different personnel who approve, manage and supervise work involving them.
3. Advice on meeting ionising radiation regulatory compliance issues is further provided by external [Radiation Protection Advisers](#) (RPAs) and Radiation Waste Advisers (RWAs), appointed by the University to provide these services as required under the [Ionising Radiation Regulations 2017 \(IRR2017\)](#).

Radiation Safety Unit (RSU)

4. The Radiation Safety Unit (RSU) is part of Safety Services in the Professional Services Directorate of Compliance and Risk. It brings together expertise in ionising and non-ionising radiation and is central to the governance of work with all types of radiation at the University. (Figure 1)
5. The RSU acts as a single point of contact with regulatory bodies relevant to work with radiation sources at the University.

Responsibilities of the RSU

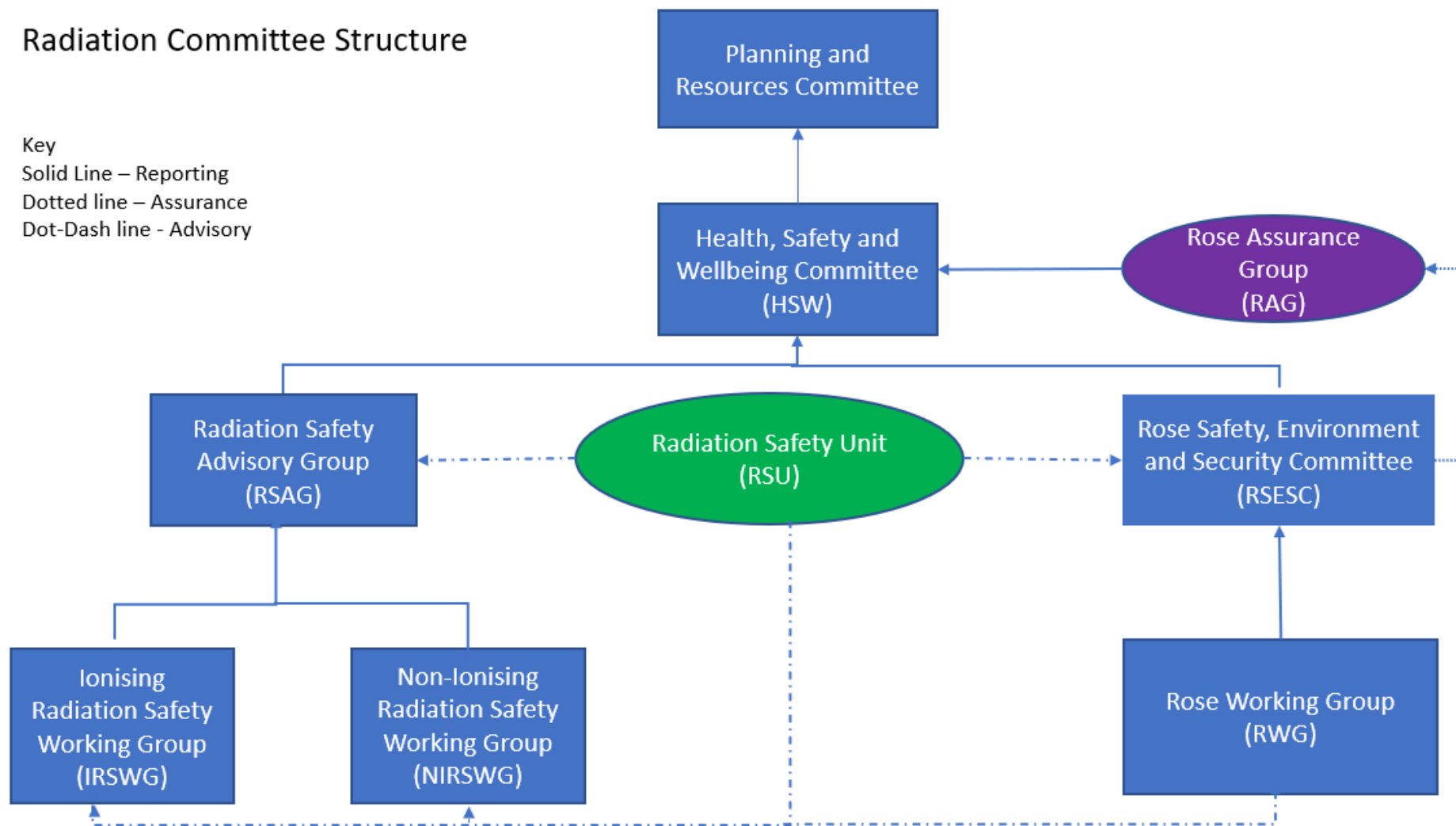
- Approve all purchases of ionising radiation sources.
- Maintain records of acquisitions of ionising radiation sources and disposal of radioactive waste in accordance with the permits and consents issued by the Environment Agency (EA) under the [Environmental Permitting Regulations](#) (EPR) and Health and Safety Executive under the IRR 2017.
- Allocate local permits for acquisition of ionising radiation sources and disposal of radioactive waste to Schools based on the University permits.
- Coordinate and keep a central record of safeguarded and restricted materials and research information pertaining to the International Atomic Energy Agency (IAEA) [Additional Protocol](#).

- Arrange the calibration of dose rate and contamination monitors.
- Facilitate the undertaking of statutory functions such as radiological investigations, contamination surveys, leakage tests and other metrology as required.
- Assist Faculties in making arrangements for the secure storage of open and sealed sources of safeguarded or restricted materials, including approved decay storage and legacy waste etc.
- Ensure that all records of radiation dosimetry are maintained and ensure any anomalous exposures are recorded on the University events database, investigated, and discussed at the Radiation Safety Advisory Group (RSAG).
- Work with the University Occupational Health Service in making recommendations to Faculties regarding Classified Workers.
- Ensure that any accidents and incidents involving radiation are recorded on the University events database and are investigated and report these to the relevant committees so that information is shared and lessons can be learned
- Prepare a quarterly report regarding the undertaking of work with ionising and non-ionising sources of radiation in compliance with regulatory requirements and approved codes of practice
- Oversee audits of written procedures and inspections of laboratory facilities for work with ionising radiation, providing written reports and advice to Radiation Protection Supervisors (RPSs) and Heads of Schools.
- Assist Faculties with qualitative/quantitative measurements of laser equipment and non-ionising radiation sources.
- Maintain a rolling training programme for Radiation Protection Supervisors (RPSs) and managers to ensure that RPS, laser safety and Class 7 (radioactive material) transport is refreshed at approximately four yearly intervals for existing appointees.
- Have supportive discussions with prospective Radiation Protection Supervisors prior to those individuals accepting the appointment.
- Assist with the organisation and delivery of radiation and laser safety awareness training and along with People and Organisational Development maintain appropriate records.
- Provide advice and guidance to the Non-Ionising and Ionising Safety Working Groups and the Radiation Safety Advisory Group.

Figure 1

Radiation Committee Structure

Key
Solid Line – Reporting
Dotted line – Assurance
Dot-Dash line - Advisory



Radiation Safety Advisory Group (RSAG)

Reports to:

Health, Safety and Wellbeing Committee

Purpose:

To provide assurance and advice to the Health, Safety and Wellbeing (HSW) Committee on all matters, except for Project Rose, which reports separately, relating to radiation safety relevant to the University's research and teaching activities.

Membership:

Members:

An academic colleague appointed by the Registrar, Secretary and Chief Operating Officer as Chair

An academic or experienced colleague appointed by the Advisory Group as Deputy Chair

Chair of the Ionising Radiation Safety Working Group

Chair of Non-Ionising Radiation Safety Working Group

Trades Union Representatives of the University

In attendance:

Head of the Radiological Safety Unit

Nominee of the Director of the Dalton Cumbria Facility

Secretary

Head of Safety Services

University Safety Coordinators

Faculty Compliance and Risk Managers

Nominee of the Director of Estates and Facilities

By invitation:

Nominee of Corporate Radiation Protection Adviser and Radioactive Waste Adviser

Radiation Technical Advisers

Quorum

Fair balance between the Chairs and the Trades Union Representatives

Terms of Reference

The Radiation Safety Advisory Group (RSAG) will:

- consider all regulatory issues regarding the safe uses of all sources of radiation and the protection of persons liable to be exposed to radiation hazards
- provide assurance and advice to the HSW Committee in relation to any of the above issues; specifically, advice on the state of compliance with the [Ionising Radiation Regulations](#), [Environmental Permitting Regulations](#), [Nuclear Safeguards \(EU Exit\) Regulations](#), Energy Act and other relevant statutory provisions and guidance
- provide advice on specific problems relevant to the use of any type of radiation and other issues relating to radiological safety
- submit to HSW for its approval, arrangements to ensure the University fulfils its obligations to staff, students and others with respect to all aspects of radiation safety
- support the University's RPSs to monitor compliance with legislative requirements and recommend to HSW any actions necessary to improve compliance and/or performance
- recommend to HSW any necessary actions to promote cooperation and communication between the University, its staff and students on any matters within the scope of RSAG
- set up working groups, when required, in order to achieve specific objectives
- receive and discuss reports from the Ionising and Non-Ionising Radiation Safety Working Groups
- review the Terms of Reference every three years or upon significant change

Frequency of meetings

Minimum three times a year

Ionising Radiation Safety Working Group (IRSWG)

Reports to:

Radiation Safety Advisory Group

Membership:

Chair: An academic colleague or suitably experienced technical officer
Deputy Chair: An academic colleague or suitably experienced technical officer
Radiation Protection Supervisors
Nominee of the Director of the Dalton Cumbria Facility
Trades Union Representatives of the University

In attendance:

Secretary
Head of the RSU
Head of Safety Services
Radiation Technical Advisers
University Safety Coordinators
Faculty Compliance and Risk Managers

By invitation:

Nominee of the Director of Estates and Facilities
External Radiation Protection Adviser and Radiation Waste Adviser
Invited speakers/participants

Terms of Reference

The Ionising Radiation Safety Working Group (IRSWG) will:

- provide assurance and advise the University, through RSAG, on compliance with legislative requirements, including radiation safety cases, and areas Local Rules/Standard Operating Procedures etc
- to share best practice and to recommend to the RSAG any action necessary to improve compliance and/or performance
- provide support to and networking for the RPS community reports via Chair to RSAG in respect of advice pertaining to the acquisition, use, transport, storage, and disposal of ionising radiation sources
- reports via Chair, any action plans to ensure that the University fulfils its obligations to staff, students and others with respect to all aspects of ionising radiation associated with research and teaching

Frequency of Meetings

A minimum of twice a year.

Non-Ionising Radiation Safety Working Group (NIRSWG)

Reports to:

Radiation Safety Advisory Group

Membership:

Chair: An academic colleague or suitably experienced technical officer

Deputy Chair: An academic colleague or suitably experienced technical officer

Local Laser Safety Advisers (LLSAs) / Non-ionising Radiation Safety Advisers

Trades Union Representatives of the University

In attendance:

Secretary

Head of Safety Services

Non-Ionising Radiation Technical Adviser

University Safety Coordinators

Faculty Compliance and Risk Managers

By invitation:

Nominee of the Director of Estates and Facilities

External Radiation Protection Adviser and Radiation Waste Adviser

Terms of Reference

The Non-Ionising Radiation Safety Working Group (NIRSWG) will:

- provide assurance and advise the University through RSAG on matters relating to non-ionising radiation safety associated with teaching and research. This includes matters pertaining to laser, magnetic, static and electromagnetic fields
- provide assurance to the University through RSAG on compliance with legislative requirements and to monitor compliance with non-ionising radiation safety codes and area Local Rules/SOPs and to recommend any action required to improve compliance and/or performance
- support local non-ionising and laser radiation safety advisors
- advise RSAG on issues pertaining to the acquisition, use, storage and disposal of sources of non-ionising radiation

- promote cooperation and communication between the University, its staff, students and others in all matters relating to laser safety

Frequency of Meetings

A minimum of twice a year.

Rose Safety, Environment and Security Committee (RSESC)

Purpose:

To provide assurance and advice to the HSW Committee on all matters relating to radiation, security and safety that are relevant to the University through Project Rose.

Membership:

Chair: Vice President and Dean of the Faculty of Science and Engineering
 Nuclear laboratory Control Manager
 Director of the Dalton Nuclear Institute
 Director of Compliance and Risk
 Head of the Radiological Safety Unit
 Professor of Materials and Structures (Academia/Industry Liaisons)
 Visiting Professor in Compliance (Nuclear Safety and Security)

In attendance:

Secretary (Dalton Nuclear Institute Operations Manager)
 Director of Faculty Operations, Faculty of Science and Engineering
 Professorial duty holders for the facilities, currently:
 Professor for Nuclear Fuel Technology
 Co-Directors for the Centre for Radiochemistry Research (x2)
 Chief Executive Officer, Henry Royce Institute
 Director of Estates and Facilities
 Head of Information Governance
 Head of Safety Services
 Trades Union Representatives of the University
 Professorial Colleagues – Project Thorn
 Professorial Colleagues – Project Stem

By Invitation:

Representative from the Project Rose Radiation Protection Adviser (RPA) and Radiation Waste Adviser (RWA).

Terms of Reference

The Rose Safety, Environment and Security Committee (RSESC) will:

- deliver duty holder responsibilities (authority and approval) for Project Rose
- advise the University Health, Safety and Wellbeing Committee (HSW) on matters relevant to the Safety, Environment and Security (SES) relevant to Project Rose
- digest and respond to Rose Working Group (RWG), Rose Assurance Group (RAG) advice, and communications from the regulator obtained via Safety Services.
- review the SES reports and other outputs for the facilities under Project Rose Governance
- route SES technical requests to the RAG as appropriate

NB These terms of reference and committee composition are expected to change according to the phase of the project. The Committee reserve the right to invite additional university and independent specialists as required. It is anticipated that the most significant changes will occur when the project laboratories become operational.

Frequency of Meetings:

Up to four times a year

Rose Working Group (RWG)

Purpose (in relation to Governance matters):

- Reports to RSESC in relation to work being proposed and carried out in the Project Rose laboratories.
6. In all other respects this is a work operational and management group deciding on the aim, scope and substance of work packages and reviewing their output, which is out of the scope of this chapter.

Membership:

Chair – an academic colleague
Professorial duty holders for the Project Rose facilities

Radiation Protection Supervisors for Project Rose
Trades Unions Representatives of the University

In attendance:

Secretary / Dalton Nuclear Institute Operations Manager
Fellows / Researchers and Technical Staff for Project Rose
Nominee of the Director of Estates and Facilities
Faculty Senior Compliance and Risk Manager, Faculty of Science and Engineering

By Invitation:

Representative from the Project Rose Radiation Protection Adviser (RPA) and Radiation Waste Adviser (RWA).

Frequency of Meetings:

Up to four times a year

Rose Assurance Group (RAG)

Purpose:

To provide specialist and independent assurance and oversight to HSW and RSESC on SES for Project Rose.

Membership:

Chair: Eminent External Representative involved in Nuclear and radiological Research
Representatives (x3) with significant experience in nuclear and radiological safety, environment and security from regulation, government, industry and/or academia.

In attendance:

Secretary / Dalton Nuclear Institute Operations Manager
Professorial duty holders for the facilities
Nuclear laboratory Control Manager
Director of Compliance and Risk
Head of Radiation Safety Unit
Director of the Dalton Nuclear Institute
Professor of Materials and Structures (Academia/Industry Liaisons)
Visiting Professor in Compliance (Nuclear Safety and Security)

By Invitation:

Representative from the Project Rose Radiation Protection Adviser (RPA) and Radiation Waste Adviser (RWA).

Responsibilities of Heads of School/Institute

Heads of Schools or Institutes are responsible for the statutory compliance with all regulations relating to radiation as stated in the UoM [Organisation](#) and this responsibility cannot be delegated to RPSs or Local Laser Safety Advisers (LLSAs). In particular, they are responsible and accountable for ensuring:

- the local arrangements for managing the lifecycle of all types of radiation in their area of responsibility are described in the School/Institute Safety Policy
- work with non-ionising radiation and lasers is managed in accordance with the arrangements outlined in Arrangements Chapters 26 ([Non-Ionising Radiation Safety](#)) and 27 ([Laser Safety](#))
- work with ionising radiation is adequately supervised and undertaken in accordance with the written Local Rules and that local Radiation Protection Supervisors (RPSs) have the knowledge, authority and time to supervise the radiation protection aspects of the work being carried out
- they appoint sufficient Radiation Protection Supervisors and Local Laser Safety Advisers, appropriate to the complexity, diversity and extent of the work being undertaken, in writing, and that the appointment letter¹ defines their duties and responsibilities and that they are allocated sufficient time to carry out this role effectively
- provision of appropriate resources (time, money) to enable new RPSs to receive appropriate training as specified in Reg 15 of the [IRR17](#) and time for them to carry out periodic refresher training
- all ionising radiation workers are registered with the RSU
- all radiation workers are suitably instructed, trained and supervised

¹ Template appointment letter is available from the RSU

- an inventory of School radiation-monitoring equipment and radioactive sources is drawn up and maintained
- regular monitoring of Controlled and Supervised areas is being carried out and any irregularities are investigated and remedial measures adopted
- procedures for the safeguarding of radioactive materials, and for the safe disposal radioactive waste are devised, recorded and maintained and comply with the requirements of the EPR
- procedures for the storage of any radioactive materials (including samples at the end of a process) are devised, recorded and maintained and comply with the Environment Agency permits
- no new or modified work activity involving radiation sources commences unless a suitable and sufficient assessment of the risk to any employee or other person has been performed and that any remedial actions or controls specified by this assessment have been carried out
- upon written notification of an employee's pregnancy, that any exposure to the foetus is unlikely to exceed 1mSv during the remainder of the pregnancy and also that he exposure of any breast-feeding staff will be restricted to prevent significant contamination of the employee
- ancillary staff, such as cleaning, portering and maintenance personnel who are likely to work in the proximity of areas in which sources of ionising radiation are stored or handled, are instructed to recognise radiation warning signs and aware of any necessary precautions.

Responsibilities of Principal Investigators (PIs)

7. Principal Investigators, including independent research fellows, have a duty, delegated to them from the Head of School, to provide such supervision as is necessary to ensure the safety of all persons for whom they are responsible, regardless of where these individuals work. This includes all staff, postdoctoral, postgraduate, and undergraduate students and visitors working with sources of lasers and non-ionising and ionising radiation.

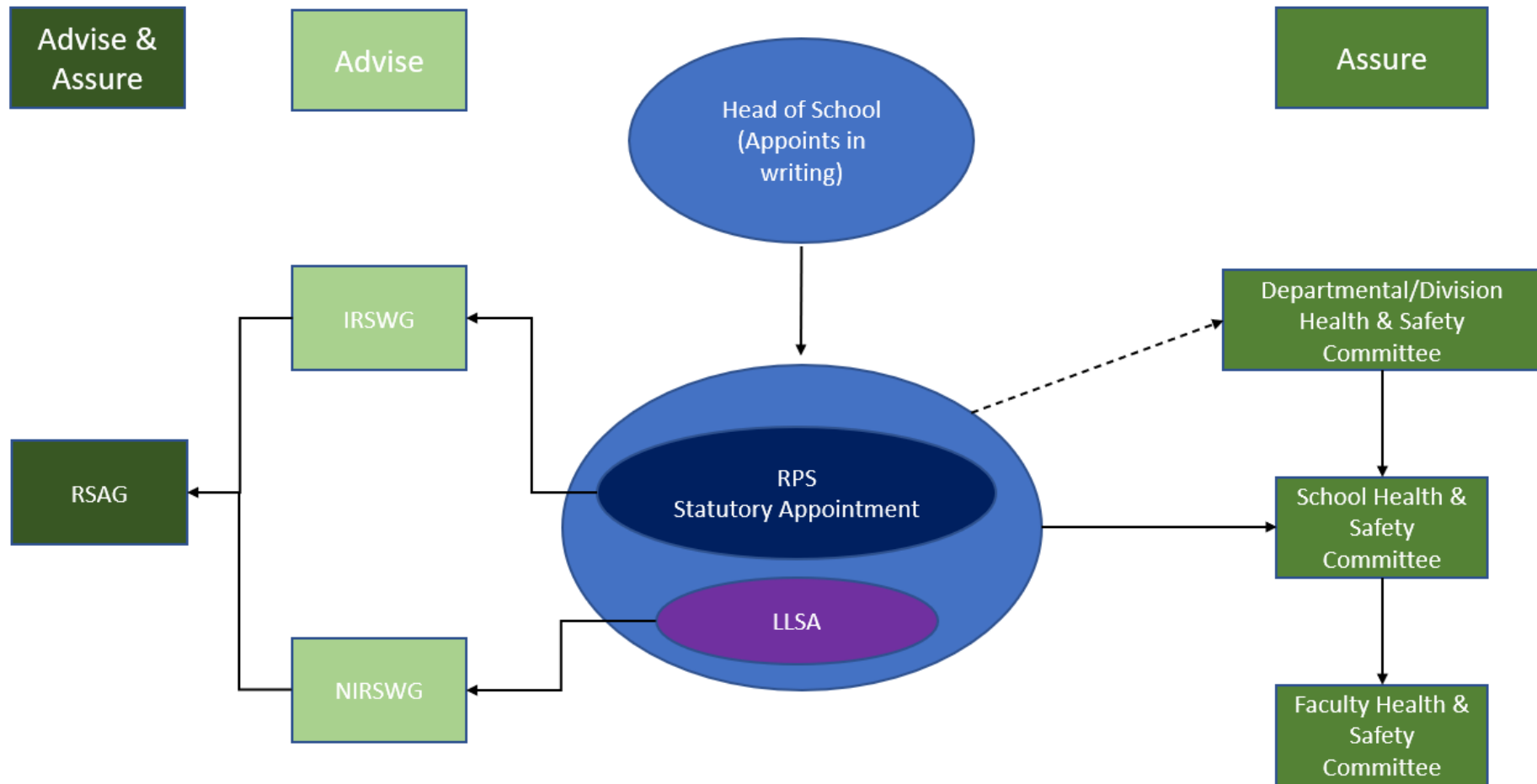
8. PIs will seek advice from the RPSs in the first instance regarding any work they intend to carry out with ionising radiation and will inform them in advance of any intention to bring ionising radiation sources on to campus.
9. PIs must consider the disposal costs of radioactive materials in their grant applications, as these can be considerable.
10. On termination of a project, the PI must ensure that all radioactive materials are either disposed of using the methods allowed in the site permit or arrange for safe storage of the samples for onward use. The rationale for storage rather than disposal should be recorded and reviewed annually and should the PI leave the University they should arrange either for: the [transport](#) of the samples to their new institution, transfer ownership of the samples to a PI remaining at the University of Manchester who must similarly provide justification for their retention, or disposal.

Radiation Protection Supervisors (RPS)

11. Radiation Protection Supervisors (RPS) are appointed by the Head of School, as the Employers duty holder, to comply with the [IRR17](#) and thus have delegated responsibility, but accountability remains with the Head of School.
12. Any person appointed as an RPS must:
 - understand the requirements of the relevant legislation and of Local Rules in so far as they affect work with ionising radiation in the School
 - have the personal authority, and be given the time and facilities to exercise the necessary supervision of relevant activities in the School
 - understand the precautions required to restrict exposure to ionising radiation
 - understand and be able to apply the [IRR17](#) to the radiation practices in the laboratories they supervise.
 - carry out duties as detailed in their appointment letters and report to local health and safety committees (See Figure 2)

Figure 2

RPS and LLSA interaction with Committees



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