



# Procedure: Nuclear safety

## Purpose

This procedure outlines the University's and individuals' responsibilities to achieve compliance with nuclear non-proliferation legislation, its permit requirements and relevant standards.

The University has been granted a permit under the *Nuclear Non-Proliferation (Safeguards) Act 1987*.

## Definitions

**ARPANSA** is the Australian Radiation Protection and Nuclear Safety Agency.

**ASNO** is the Australian Safeguards and Nuclear Non-Proliferation Office.

**Authorised person** is a person who has a legitimate need/use for the nuclear material associated with an approved University research project or course of study, including a Nuclear Materials Contact Officer.

**Nuclear material** is the material that ANU is allowed to possess under the Nuclear Non-Proliferation (Safeguards) permit issued under the *Nuclear Non-Proliferation (Safeguards) Act 1987*, that is:

- natural uranium in any form;
- depleted uranium in any form;
- thorium in any form;
- heavy water; and
- special fissionable material, which is Uranium-235 in any form (as enriched uranium), Uranium-233 in any form, and Plutonium-239 in any form.

**Regulations** means regulations made under the *Nuclear Non-Proliferation (Safeguards) Act 1987*.

## Procedure

1. The University is permitted to:

- possess and use nuclear source material and special fissionable materials, including natural uranium, depleted uranium, thorium and heavy water.

Requests for any other material must be discussed with the University's Australian Safeguard and Nuclear Non-Proliferation Office (ASNO) contact officer prior to approval; and

- use the nuclear material for research and education purposes.
2. The permit **does not** allow the University to:
- enrich nuclear material;
  - reprocess irradiated nuclear material;
  - produce heavy water; or
  - manufacture, produce or test nuclear weapons or other nuclear explosive devices.
3. Nuclear material is to be managed so that:
- use and storage can only occur at an approved location and/or building identified under the University ASNO Permit;
  - an inventory of material and consumption is maintained;
  - unusual occurrences (theft, loss or unauthorised handling) are reported to the local contact person and the University ASNO Liaison Officer (at [whs@anu.edu.au](mailto:whs@anu.edu.au));
  - transport of material is in accordance with ASNO guidelines;
  - disposal of material is in accordance with University and ASNO guidelines; and
  - inspections are conducted.

See: [Australian Safeguards and Non-Proliferation Office](#) for further information.

## Responsibilities

4. The University's Radiation Safety Policy and Procedure provides details of the responsibilities of people dealing with radioactive material and associated processes. Additional responsibilities exist when dealing with nuclear material, including those listed below.

### *Directors*

5. The Director of a Research School or Dean of a College holding nuclear material must:
- appoint a Nuclear Materials Contact Officer and deputy;
  - inform the Associate Director, Work Environment Group of the Nuclear Materials Contact Officer and deputy; and

- ensure that appropriate facilities and resources are available to manage nuclear material in compliance with these procedures and the University ASNO permit.

#### *Research Group Leaders and supervisors*

6. Research Group Leaders and supervisors using nuclear material must:

- discuss any intent to obtain or acquire nuclear material with the local Nuclear Materials Contact Officer and the University ASNO Liaison Officer;
- only use nuclear material for the authorised uses described in the permit;
- inform all persons with authorised access to nuclear material of the conditions of the permit;
- provide sufficient information to ASNO and the University ASNO Liaison Officer to allow inspectors to comply with health and safety procedures at the approved locations; and
- provide access to inspectors to any premises occupied by the permit holder, and allow inspectors to exercise any functions that they are authorised to do under the Act and Regulations.

#### *Nuclear Materials Contact Officers*

7. A Nuclear Materials Contact Officer is a radiation safety officer or staff member with appropriate skills and knowledge to undertake the tasks listed below. The Nuclear Materials Contact Officers and their deputies have responsibility for:

- the management of their local nuclear material;
- security of and access to the material;
- maintaining a list of local authorised people or groups;
- inventory maintenance, including nuclear material consumed;
- guiding researchers in the processes associated with the acquisition and disposal of nuclear material; and
- annual reporting to the University ASNO Liaison Officer.

#### *Authorised person*

8. An authorised person must:

- comply with this procedure and ASNO permit requirements;
- ensure nuclear material is secured from theft; and

- ensure nuclear material is used in appropriate processes and not redirected.

### *University ASNO Liaison Officer*

9. The University ASNO Liaison Officer is a member of the Work Environment Group.
10. The ASNO Liaison Officer is responsible for:
  - communicating with ASNO;
  - assisting the University in meeting compliance requirements and reporting;
  - organising, collating and submitting ASNO required reports;
  - undertaking random inspections of nuclear material;
  - maintaining the University's Nuclear Material Inventory; and
  - investigating incidents and making recommendations.
11. Any queries regarding nuclear non-proliferation materials or associated processes should be directed to the University ASNO Liaison Officer at [whs@anu.edu.au](mailto:whs@anu.edu.au).
12. All communication between the University and ASNO should go through the ASNO Liaison Officer (at [whs@anu.edu.au](mailto:whs@anu.edu.au)).

### **Transporting nuclear material**

13. Transport of nuclear material:
  - between University buildings – must be in accordance with University radiation safety processes and with the knowledge of the local Nuclear Materials Contact Officer;
  - to other organizations – requires prior written approval from ASNO, and the person receiving the nuclear material must have a Permit to Possess Nuclear Material. Items must be packaged according to ARPANSA Guidance Document–[RPS 2](#);
  - outside Australia – must only be with the prior written permission of, and in accordance with procedures approved by, the Director of Safeguards, ASNO. Items must be packaged according to ARPANSA Guidance Document [RPS 2](#).

## Disposal of nuclear material

14. The disposal of nuclear material requires the written permission of the Director of Safeguards, ASNO.
15. The disposal of radioactive waste must also be in accordance with the University disposal procedures and may require formal notification to ARPANSA and ASNO. Waste disposal issues should be discussed with a local Nuclear Materials Contact Officer and/or the [University ASNO Liaison Officer](#).

## Security of nuclear material

16. The Nuclear Materials Contact Officer must ensure that security measures are in place that prevent the theft, loss or unauthorised handling of the nuclear material.
17. Only authorised persons are to access and handle nuclear material.

## Measurement and inventory

18. On ASNO  
approved forms, Nuclear Materials Contact Officers maintain an inventory which records the details of each separate receipt, transfer and consumption of nuclear material in the inventory. For each change to the inventory, the ledger must include details of the:
  - dates;
  - people involved;
  - use(s) of the nuclear material;
  - type of nuclear material;
  - physical and chemical form of the nuclear material; and
  - amount of nuclear material.
19. The quantities of source material must be recorded in the inventory as:
  - source material greater than 0.01 Kilogram (kg) to 2 decimal places;
  - source material less than 0.01 kg as accurately as known;
  - special fissionable material greater than 0.01 gram to 2 decimal places;
  - special fissionable material less than 0.01 g as accurately as known.
20. An inventory may be in either hardcopy or electronic format and must

be kept for five years from the date of the last entry in the inventory.

21. A physical inspection of the inventory of nuclear material must be conducted each year. The Nuclear Materials Contact Officer is responsible for their local area.

**Note:** For additional information on inventory content, contact the Work Environment Group at [whs@anu.edu.au](mailto:whs@anu.edu.au).

## Reports and records

22. The University ASNO Liaison Officer will seek information from the local Nuclear Materials Contact Officer with the appropriate ASNO forms to complete.
23. The University ASNO Liaison Officer will report to ASNO in the approved manner at the required times.
24. The inventory report must contain details of the stock held, and the total receipts, transfers and consumption during the year. Any discrepancy between the physical inventory and the record of nuclear material must be reported, including a concise note to explain the discrepancy and give an account of any actions taken to correct it.
25. A special report is required when there has been any unusual or unexpected incident that has resulted in, or is reasonably suspected to have resulted in, a loss of nuclear material. This shall be reported as an incident.

## Incidents

26. All incidents involving nuclear material must be reported immediately to supervision and using the University Incident Notification system. The reporting of incidents, near misses, significant exposures and dangerous occurrences helps the University community avoid repeating incidents.

**See:** [Incident Reporting Procedure](#)

27. Special reports are also required when there has been a breach of the physical security around nuclear material, or any loss, or loss of control, of the nuclear material immediately after the detection of any such occurrence.
28. An initial special report containing known details needs to be sent to ASNO immediately via the ASNO Liaison Officer, with a comprehensive report being provided in writing within two weeks of the incident. That report must include:
  - the cause of the incident or the details of the circumstances;

- details of the effect in relation to the nuclear material or part thereof;
- details of measures proposed to prevent a recurrence; and
- any other relevant information.

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