



Australian Government  
Australian Radiation Protection  
and Nuclear Safety Agency



22 April 2026

Ref: R26/01395

Shaun Jenkinson  
Chief Executive Officer  
ANSTO  
Locked Bag 2001  
Kirrawee DC NSW 2232

Dear Mr Jenkinson,

**Re: Facility Licence F0260 – Direction to ANSTO under section 41 of the *Australian Radiation Protection and Nuclear Safety Act (1998)***

## Decision

For the reasons outlined in this correspondence, I believe there is a need to exercise my powers under section 41 of the *Australian Radiation Protection and Nuclear Safety Act (1998)* (the Act) with regards to the management of the Building 57 (B57) facility under facility licence F0260. ANSTO's B57 facility is within the ANSTO Sydney Campus located at New Illawarra Road, Lucas Heights, NSW 2234.

Therefore, under subsection 41(2) of the Act, I **direct** ANSTO to:

1. Provide ARPANSA with detailed contingency plans for recovery in the event of failure of any, or all, of the legacy acidic radioactive intermediate level liquid waste tanks within the B57 facility.
  - a) ANSTO must provide these detailed contingency plans to the CEO of ARPANSA within 30 days of the date of this direction.
2. Provide a comprehensive update of the risk assessment for the B57 facility. This risk assessment must quantify all radiological and associated chemical hazards posed by the B57 liquid waste in the tanks, and include an assessment of all modes of structure (e.g. tank) and/or facility failure, and consequential dose/risks to human health and the environment.
  - a) ANSTO must provide this comprehensive risk assessment to the CEO of ARPANSA within 60 days of the date of this direction.
3. Provide an updated Safety Analysis Report (SAR) reflecting the updated risk assessment described in (2) above.
  - a) ANSTO must provide this updated SAR to the CEO of ARPANSA within 120 days of the date of this direction.

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4. Take immediate steps to initiate an independent safety and risk review of the B57 facility. ANSTO must appoint an independent external reviewer and, as necessary, external experts to support the reviewer, to form an independent review team (IRT).
  - a) ANSTO must appoint this IRT within 30 days of the date of this direction. Additionally:
    - (i) The composition of the IRT must be approved by ARPANSA prior to their appointment.
    - (ii) Terms of reference for the IRT should be prepared by ANSTO and approved by ARPANSA, prior to the commencement of the review.
    - (iii) ANSTO must support the review in any way necessary, including but not limited to providing access to facilities and documentation, as well as access to staff under arrangements that enable staff to interact openly with the IRT.
  - b) ANSTO must provide the CEO of ARPANSA a progress report 30 days after the appointment of the IRT.
  - c) ANSTO must provide the IRT report to the CEO of ARPANSA within 60 days of the date of the appointment of the IRT. Additionally:
    - (i) The report must address the adequacy of ANSTO's safety arrangements for the B57 facility, including the detailed contingency plans (as described in 1 above), assess the completeness of ANSTO's updated risk assessment (as described in 2 above), identify any significant safety/risk issues that are not adequately addressed, and provide recommendations for safety mitigation measures and remedial actions.
5. Provide ARPANSA with a detailed program including timelines, and allocation of appropriate resources, to address the findings of the updated risk assessment (2 above), SAR (3 above), and IRT report (4(c) above).
  - a) ANSTO must provide the detailed program to address IRT report findings, to the CEO of ARPANSA for approval within 30 days of the issue of the report.

A statement of reasons outlining the basis of my decision is attached (Attachment A).

### ***How to seek review of this decision***

Under section 42 of the ARPANS Act, ANSTO can request ARPANSA's responsible Minister, the Assistant Minister for Health and Aged Care, to reconsider the CEO of ARPANSA's decision to issue this direction. The request must be made in writing and submitted to the Minister within 28 days of the direction being issued to ANSTO. The Minister must reconsider the decision to issue a direction and confirm, vary or set aside the decision. If a response from the Minister is not received within 60 days of the request, this is deemed to be a confirmation of the CEO of ARPANSA's decision. A request for review of the Minister's decision may, in turn, be made to the Administrative Review Tribunal.

### ***Additional information***

Pursuant to section 41(4) of the Act, the CEO of ARPANSA will provide a copy of the direction to the Assistant Minister for Health and Aged Care.

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Section 41(5) requires the Minister to cause a copy of the direction to be tabled in each House of the Parliament within 15 sitting days of that House after the direction has been given.

The direction will be listed in ARPANSA's Quarterly Report for the April-June Quarter of 2026 and in the 2025–26 Annual Report of the CEO of ARPANSA.

If you have any questions on the above, please direct them to Jim Scott, ARPANSA Chief Regulatory Officer at [jim.scott@arpansa.gov.au](mailto:jim.scott@arpansa.gov.au) and Christina Arthur, ARPANSA Director, Waste, Decommissioning and Transport at [christina.arthur@arpansa.gov.au](mailto:christina.arthur@arpansa.gov.au).

Yours sincerely



Dr Gillian Hirth AO  
CEO of ARPANSA

## Attachment A

### Statement of reasons

As part of ARPANSA's duty to protect people and the environment from the harmful effects of radiation, the CEO of the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) has decided to issue a direction to ANSTO in relation to the Building 57 (B57) facility operated under facility licence F0260.

This enforcement action follows an investigation into the B57 facility at the ANSTO Lucas Heights campus, which stores legacy acidic radioactive intermediate level liquid waste (ILLW) within tanks, and was found to be non-compliant with requirements of the Australian Radiation Protection and Nuclear Safety Regulations 2018. As a result, ANSTO was subsequently found in breach of the *Australian Radiation Protection and Nuclear Safety Act 1998* (ARPANS Act) via a letter dated 2 March 2026.

ARPANSA is taking regulatory action to reduce the risk of an incident occurring in the future. There has not been any detrimental impact to the environment, ANSTO workers or the community from the B57 facility. The actions outlined in the CEO of ARPANSA's direction are required to ensure the hazards and risks are well understood, identify proactive actions to reduce risk, and ensure appropriate contingency plans are in place if an incident was to occur.

This statement details the process ARPANSA has followed to determine non-compliance and the decision to issue a direction for the B57 facility.

### ANSTO self-report of potential non-compliance

On 13 August 2025, ANSTO notified ARPANSA of a potential non-compliance regarding construction activities at the B57 facility between June and July 2025.

The B57 facility is licensed for the safe and secure storage, handling and processing of radioactive wastes. The liquid waste stored in the basement of the B57 facility is from historical production of Molybdenum-99, as part of nuclear medicine production processes.

The B57 liquid wastes are stored in tanks, and the original design of the building includes containment bunds as a defence in depth measure to capture liquid waste in the event of a leak from the tanks, e.g. due to a seismic event or corrosion. The work that prompted ANSTO to notify ARPANSA of a potential non-compliance, was construction of additional stainless-steel containment bunds. This involved the removal of concrete shielding blockwork and alterations to the building's concrete structural walls.

An application to implement changes to the B57 facility with significant implications for safety was not submitted to the ARPANSA CEO for review and approval prior to works, in accordance with section 63 of the Australian Radiation Protection and Nuclear Safety Regulations 2018 (ARPANS Regulations). Additionally, ANSTO did not provide proper internal approvals for the work to commence.

## History of the Building 57 (B57) facility

The ANSTO facility known as B57 was constructed in the 1960s and commissioned for operation in 1971.

The facility currently stores legacy acidic radioactive intermediate level liquid waste, which resulted from a previous process used to manufacture Molybdenum-99, as part of nuclear medicine production.

Since 2020, ANSTO has been exploring options to extend the life of B57 or transfer the liquid waste to another facility, as well as considering the best treatment method for this liquid waste.

An initial operation to rectify ageing B57 infrastructure that had reached the end of its design life was stopped by ANSTO in 2022, due to unresolvable issues, following an engineering review.

In 2023, after considering further options, ANSTO advised ARPANSA of the intention to move the B57 liquid waste to a new proposed facility that originally had been designed for storing solid radioactive intermediate level waste. At that time, the new proposed Intermediate Level Waste Capacity Increase (ILWCI) facility was already funded for construction and had an approved siting licence from ARPANSA (2022).

ANSTO proposed to modify the design of this facility to incorporate storage for the B57 liquid waste, and indicated they would submit a siting licence amendment application (renamed 'ILWCI+'). As of April 2026, ARPANSA has not received further licence application documentation for ILWCI+. Due to the proposed addition of tanks for the B57 liquid waste, the proposed ILWCI+ facility needed to be referred back to the Department of the Environment, Energy, Climate Change and Water (DEECCW) for consideration.

ANSTO documentation originally indicated that the ILWCI facility was projected to be operational by 2027. Due to the change in scope and significant project delays, this date is no longer achievable. The earliest completion date is now forecast in 2029-30. Until the ILWCI+ facility is available, ANSTO's current intention is to leave the liquid waste in the B57 tanks undisturbed.

In 2025, ANSTO attempted to install additional stainless steel 'bunds' in B57 as a contingency measure in case of leak or failure of the liquid waste storage tanks. This operation was not authorised by ARPANSA and ceased before completion.

There is no treatment pathway currently identified by ANSTO for the B57 liquid waste. Initially ANSTO indicated the intention to use their ANSTO Synroc waste treatment facility (known as SyMo) to treat the B57 liquid waste. ANSTO later identified that SyMo will only be suitable for alkaline liquid waste and not suitable for treating the acidic liquid waste stored in B57.

## ARPANSA investigation and considerations

### *ANSTO actions leading to a non-compliance*

Following ANSTO's notification to ARPANSA of a potential non-compliance, with the ARPANS Regulations, due to construction works in the basement of the B57 facility, ARPANSA undertook a comprehensive investigation between August 2025 and January 2026.

To conduct the investigation, ARPANSA inspectors visited the B57 facility on multiple occasions, interviewed ANSTO employees, and reviewed management arrangements, risk assessments, plans and related safety documents.

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During interviews with ANSTO staff, ARPANSA was advised that particulate from cutting of shielding blockwork and concrete during construction works had activated a B57 fire alarm in June 2025. This alarm resulted in the work being halted and the ANSTO Site Operations Centre (ASOC) alerted. Work then recommenced in July 2025 to install the stainless-steel bunding in B57, however the work ceased again and the construction work on the bunds remains incomplete.

Concerns initially identified by ARPANSA included:

- the condition of the storage tanks inside the facility were unable to be assessed with confidence due to access difficulty and potential for high radiation dose exposures
- the potential impact of building works on the integrity of the tanks had not been appropriately considered
- there had been limited sampling, analysis and characterisation of the type of waste stored in some of the tanks
- the risk of corrosion to the structural stainless-steel shell of the tanks from the nitric acid, if the glass lining of some of the tanks became compromised, leading to a potential through-wall defect
- a lack of knowledge and maturity regarding safety and security within ANSTO Waste Operations team.

During the inspection, interviews and documentation reviews, ANSTO did not sufficiently prevent safety risks that occurred due to human and organisational errors and did not demonstrate effective control over the B57 facility due to:

- governance and assurance processes that were unclear and inadequate, and were not followed
- a lack of understanding of roles and responsibilities within the team
- a lack of leadership oversight
- poor communication channels in place between management, personnel and contractors, as well as other areas of the organisation failing to meet the standards necessary to demonstrate effective control of safety of the B57 facility
- poorly organised and poorly managed documentation for the construction project.

ARPANSA's inspectors determined that there was sufficient evidence that safety risks associated with the construction and changes to the B57 facility were not appropriately managed. Evidenced by:

- ARPANSA was not notified of plans for the works, even though the work required regulatory approval under section 63 of the ARPANS Regulations
- the Safety Assessment Report (SAR) was not reviewed or considered in relation to the change. It was also identified that the SAR was out-of-date (last update was 2021) and does not meet current safety case standards
- there was no demonstrated consideration of options to undertake the construction changes
- internal ANSTO approvals and procedures were not followed
- there was a general lack of understanding of the ongoing hazard and risks posed by the radioactive intermediate level liquid waste stored within the tanks
- construction works were conducted without regulatory approvals and construction risks were not adequately considered, which had the potential to cause harm to contractors, staff and the environment.

Based on the above, the inspection revealed non-compliances with the following sections of the ARPANS Regulations:

- Section 57A: preventing and minimising human error and organisational failures. A licence holder must take all reasonably practicable steps to prevent and minimise human errors and organisational failures involving controlled materials, controlled apparatus or controlled facilities described in the licence
- Subsection 60(1): the holder of a facility licence must take all reasonably practicable steps to manage the safety of the facility described in the licence
- Section 61: the holder of a licence must, at least once every 3 years, review and update the plans and arrangements, and safety analysis reports mentioned in section 60 in relation to the licence; and the holder of a licence must keep records of any changes made to the plans and arrangements and safety analysis reports
- Section 63: obtaining the CEO's approval for certain changes. The holder of a licence must obtain the CEO's approval if the change will have significant implications for safety.

ANSTO accepted the findings of the inspection and the breach of the four sections of the Regulations. A letter confirming this breach was issued on 2 March 2026.

### ***Decision to issue a direction***

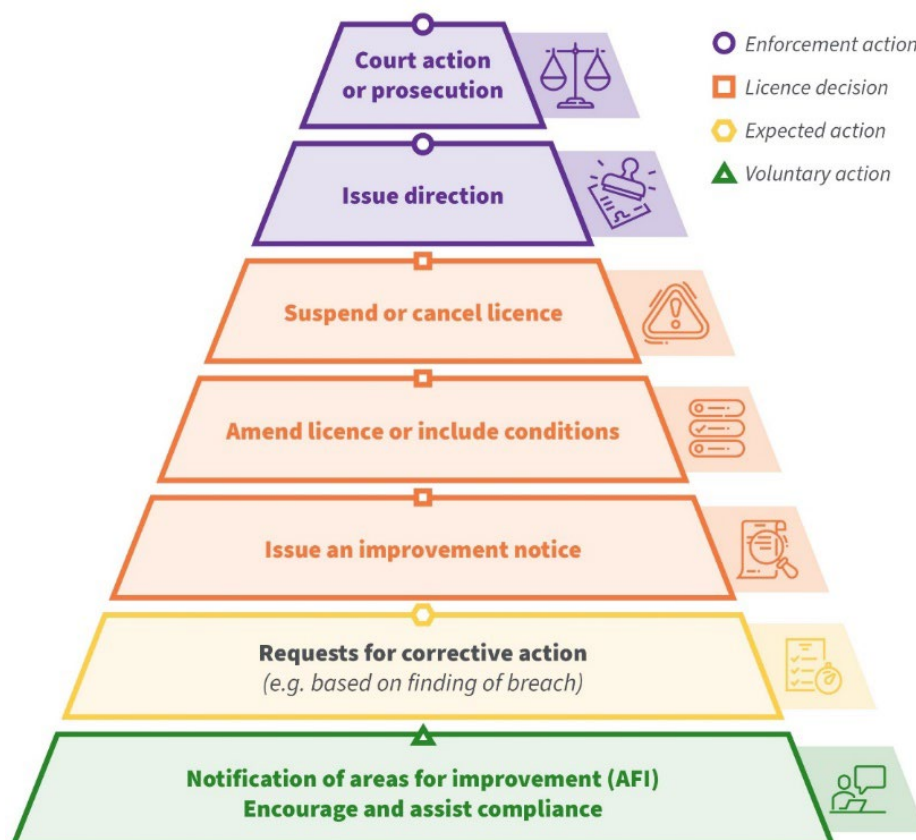
Consistent with our regulatory responsibilities, ARPANSA engaged ANSTO in discussions as they evaluated and progressed options to manage the B57 liquid waste. This engagement led to the development of the ANSTO Radioactive Waste Management Strategy in 2021, which documented ANSTO's initial operation to rectify ageing B57 infrastructure.

ARPANSA acknowledges ANSTO's progression through various options to manage this waste, and its complexity. However, with the lack of progress on the current ILWCI+ facility, and the safety and security breaches identified in recent inspections, the CEO of ARPANSA lacks confidence in ANSTO's commitment or ability to deliver a timely solution to this significant safety risk, and considers urgent regulatory action necessary to ensure ANSTO returns the facility to compliance with the ARPANS Act and Regulations or finds an alternative safe, secure and compliant storage solution.

There are a range of regulatory responses available to ARPANSA to address non-compliance. ARPANSA uses a graded approach to licence holder non-compliance with the enforcement action proportionate to the safety risks posed.

The escalation of enforcement actions is illustrated below. A copy of ARPANSA's guidance which outlines the escalation of enforcement actions can be found on ARPANSA's website [here](#).

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ARPANSA's CEO has power under section 41 of the ARPANS Act to issue a direction and, in the circumstances, considers this the most appropriate regulatory response. This is due to ANSTO's non-compliance with the Act and Regulations and demonstration of systemic issues with safety culture, leadership and management of safety, resulting in ongoing delays to adoption of a suitable solution for, particularly, the liquid waste stored in the tanks at B57 creating an unacceptable risk to people and the environment from radiation connected to the B57 facility.

Amendment of the licence cannot achieve the desired outcome, and a suspension or cancellation of the licence would remove the facility from ongoing regulatory oversight, which would be detrimental to safety.

Subsection 41(1A) of the Act states the CEO may give directions to controlled persons (ANSTO) if:

- the CEO believes, on reasonable grounds, that there is a risk of death, serious illness, serious injury or serious damage to the environment, arising from radiation, in connection with a controlled facility, controlled material or controlled apparatus
- the CEO believes that there is an urgent need to exercise powers under this section in order to minimise the risk.

This matter was discussed in detail by members of the Nuclear Safety Committee at the Committee's meeting held on 18-19 March 2026. Members in attendance supported ARPANSA's enforcement approach, including the issue of a direction in relation to the B57 facility.