



Nuclear Safety Committee

Minutes

Date	12-13 November 2024
Time	ANSTO Site Tour 10:00am to 3:00 pm (Day 1); 3:00pm – 4:00pm (Meeting) 10:00am – 3:45pm (Day 2)
Location	Australian Institute of Nuclear Science and Engineering (AINSE), New Illawarra Rd, Lucas Heights NSW 2234
Members Present	Dr Joanna Wriedt (Acting Chair), Dr Gillian Hirth AO (CEO of ARPANSA), Mr Michael Parker, Dr Peter Karamoskos, Ms Jasmin Diab CSC, Mr Tony Irwin, Dr Peta Miller, Mr Stuart Parr, Mr Brent Rogers, Mr Cameron MacPhail (Day 2 only), Mr Peter Wilkinson.
Apologies	Dr Tamie Weaver.
Attendees	ARPANSA: Mr Chris Nickel (Day 2 only), Ms Penny Hill (Day 2 only), Mr Lachlan Whittle, Mr Jim Scott, Dr Samir Sarkar, Mr Vaz Mottl, Mr Grant Beamish, Ms Christina Arthur. NPSRD: RADM Kath Richards AM CSC, LCDR Sean Dowling. ANSTO (Day 1 and item 3.1 only): Mr David Vittorio, Mr Jakob Vujcic, Mr Mark Rasmussen, Mr Aaron Flett, Mr Mark Moore, Mr Steven Kelly, Ms Adele Eagleton.

Tour

The NSC was provided with a tour of ANSTO facilities including:

- The Open-pool Australian lightwater (OPAL) reactor
- The Australian Centre for Neutron Scattering (ACNS)
- The ANSTO Nuclear Medicine (ANM) facility
- The [SyMo](#) facility (under construction)
- ANSTO waste operations & storage facilities.

1 - Introduction

1.1 - Opening

The Acting Chair opened the Nuclear Safety Committee meeting with a moment of silence for the passing of John Loy, former CEO of ARPANSA, and gave an acknowledgement of the Traditional Owners of the land, paying respect to Elders past and present.

1.2 - Attendance and Apologies

Dr Tamie Weaver provided an apology for this meeting, with Dr. Joanna Wriedt chairing this meeting. Mr Cameron MacPhail was an apology for the tour on the first day of the meeting.

1.3 - Declarations of Conflicts of Interest, Real, Perceived or Potential

Mr Cameron MacPhail recused himself from the item on Nuclear Medicine Manufacturing Facility on the first day of the meeting, due to a potential conflict of interest from his employer being involved in the bidding related to this project. It was noted that the NSC was not expected to be provided with any information not already provided to parties bidding on this project.

No additional conflicts of interest were raised at this meeting.

1.4 - Minutes of the previous meeting

Draft minutes of the previous NSC meeting had been distributed to, and accepted by, NSC members out of session. All comments regarding the minutes raised by members were addressed and the [minutes](#) are published on the ARPANSA website.

1.5 - Meeting Dates

Meeting dates for 2025 were discussed and will be finalised out of session

2 - Business Arising

2.1 - Outstanding Actions

The Committee noted that there are no outstanding actions.

2.2 - Incoming Correspondence

The Committee received no correspondence.

2.3 - Outgoing Correspondence

The Committee sent no correspondence.

3 - Main Items for Discussion

3.1 - *Update on ANSTO facilities and upcoming licence applications*

Nuclear Medicine Manufacturing Facility

An update on ANSTO's Nuclear Medicine Manufacturing Facility (NMMF) was provided by the NMMF project team. This update included discussion on the steps taken thus far in the planning and design stages of the project. The project team presented a draft design of the facility and explained the safety and engineering principles behind it. This included discussion of international collaboration and best practice considerations. The NMMF project outlined the increased capacity for nuclear medicine production at this new facility compared to ANSTO's current facility. A broad timeline for next steps in the project was provided, including the anticipated timing of submitting applications to ARPANSA.

The Committee noted ANSTO's intended approach and foreseen challenges regarding waste management, transitioning from the existing facility to this new facility, and futureproofing. This included ANSTO's proposed approach of managing waste through various means, including designing systems to generate less waste, to segregate the waste produced, and allow for delay and decay.

OPAL extended shutdown work for update of the first reactor protection system (FRPS) and replacement of the cold neutron source (CNS)

ANSTO provided the Committee with an overview of the work conducted by ANSTO during the extended shutdown of the OPAL reactor. This included the work on the FRPS update, CNS replacement, and low-power reactor startup. ANSTO provided an overview of how the work was conducted. This included engineering details on the reactor components relevant to the work being conducted, and how any challenges arising during the project were managed and overcome. These challenges resulted in some delays to the restart of the reactor, but ANSTO emphasised the prioritisation of safety and the quality of work over timelines. This presentation also discussed human and organisational factors of the project, including training, communication, teamwork, and biometric monitoring. The NSC noted the mock-up and long planning cycle, which allowed for training and team building to ensure the tasks could be performed safely with reduced time spent in areas with radiation present.

ARPANSA's regulatory approach to this work is discussed below in [section 5.1](#).

Upcoming licence applications

ANSTO provided an overview of the next 12 months of planned submissions to ARPANSA. Upcoming submissions regarded multiple ANSTO facilities and projects including the Intermediate Level Waste Capacity Increase (ILWCI), NMMF, SyMo, and the decommissioning of the High Flux Australian Reactor (HIFAR) reactor. ANSTO noted that the submission timeline is subject to change due to flow on effects from the delayed OPAL reactor restart. ANSTO also noted that it was not possible to undertake many submissions at once due to shared resources required for each submission, this being true for both ANSTO and ARPANSA.

The Committee discussed the workforce resourcing issues facing the nuclear industry globally, the investment required in educating future staff, and the initiatives currently being undertaken.

3.2 - ARPANSA's review of the 2021 Periodic Safety and Security Review (PSSR) of the OPAL reactor.

ARPANSA presented to the Committee on the PSSR. The PSSR is a well-established international process for nuclear reactor operators to review their safety performance periodically, and this is reviewed by the regulatory body. The Committee noted that a licence condition exists requiring ANSTO to perform this PSSR in line with guidance that is published on the ARPANSA website. The NSC noted that publication of a clear non-technical summary of the review may provide benefit in providing assurance to the public and highlighting that this is more detailed than what is typically done for research reactors internationally.

The Committee was requested by the CEO to consider ARPANSA's review of the PSSR (the Regulatory Assessment Report) out of session. ARPANSA will provide the NSC with a Terms of Reference (TOR) for the advice out-of-session.

3.3 - Minute Process

The Secretariat provided the Committee with a brief overview of the process for taking and approving minutes for NSC meetings.

4 - Member of public update

None, no correspondence from the public had been received.

5 - ARPANSA update on major Controlled Facilities and Inspections

5.1 - Review and approval of FRPS, CNS and other OPAL shutdown regulatory work

ARPANSA outlined their regulatory approach to the First Reactor Protection System (FRPS) update application. ARPANSA imposed 3 licence conditions on the OPAL licence which require ANSTO to provide ARPANSA with documents to evidence the successful completion of the FRPS update. This includes reports on site acceptance testing and commissioning.

The Committee noted an update on the crack growth issues for the OPAL riser on which members had previously been informed. ANSTO have reported on changes within the existing cracks observed during the first inspection after the completion of the CNS replacement*. The Committee noted that the current schedule of visual inspections of the riser appeared appropriate and that it cannot be changed without ARPANSA's approval.

The Committee were provided with details on ARPANSA's approach to the replacement of the Cold Neutron Source (CNS). This included inspector visits and multiple meetings with various members of the project team. The Committee noted the value of lessons learned and discussed how any

*Following the November 2024 NSC meeting, ANSTO supplied ARPANSA with its latest OPAL riser visual investigation reports, taken after the reactor was restarted post the CNS replacement. The latest reports concluded that there had been no visual changes to the riser crack as previously reported to ARPANSA. The visible change to the riser cracks is now understood to be debris released during the course of the CNS replacement works, that had settled into the riser cracks. The debris, measuring less than 2mm², has subsequently been dislodged from the riser crack to the reactor cooling and filtration system, and therefore is no longer visible. The Nuclear Safety Committee was advised of this update to the visual inspection evidence out of session and agreed to the inclusion of this addendum.

future CNS replacement might be done in 10 plus years. The Committee did not raise any significant concerns.

5.2 - Update on HIFAR Decommissioning Licence

The Committee were advised about ANSTO's plans for decommissioning of the HIFAR reactor. This includes the plan for decommissioning in two major phases (Phase A & B), with multiple stages within each phase. ANSTO has submitted an application to ARPANSA for the first stage of decommissioning, Phase A stage 1. Phase A will not include the reactor block or other components with significant concentration of radioactive material. The Committee did not raise any significant concerns.

5.3 - Other facility updates

ARPANSA updated the Committee on current submissions under review, and submissions expected in the near future. The Committee was also informed of recent activities including enforcement actions. The Committee noted similarities in underlying causes between a recent near-miss event which resulted in ANSTO being found in breach, and an accident in 2017 that caused a contamination injury. ARPANSA provided the relevant inspection report. The Committee did not raise any other significant concerns.

6 - General Reports

6.1 - ARPANSA significant activities

The CEO of ARPANSA, Dr. Gillian Hirth AO, provided detail on ongoing consultation being undertaken with stakeholders regarding the licensing of the Australian Submarine Agency's (ASA) proposed Controlled Industrial Facility (CIF). This included meetings with the ASA; the NPSRD; the Gnaala Karla Booja Aboriginal Corporation; the Mayor and other representatives of Rockingham Council; and the Perth South West Metropolitan Alliance (PSWMA). The CEO identified that the ASA has committed to providing responses to stakeholders which have not yet been provided.

The CEO of Rockingham Council, Mr Michael Parker, thanked Dr. Hirth for engaging with the PSWMA. Mr Parker noted the amount of misinformation present surrounding the CIF application, including on the levels of waste planned to be received and the classification of waste. Mr Parker also indicated the continued presence of concerns regarding the validity of comparisons made between waste produced at the CIF and medical waste. Mr Parker raised that there is a role for ARPANSA as an independent regulator to undertake community engagement.

Dr. Hirth described her participation in the IAEA General Conference held in Vienna during September 2024. At this conference the CEO engaged with multiple international regulators regarding international cooperation, knowledge sharing, waste management, radiation safety and emergency preparedness.

Dr. Hirth met with the Australian Radiation Waste Agency (ARWA) for the ARWA-ARPANSA liaison forum, where both agencies communicated their current priorities.

Dr. Hirth advised that ARPANSA were planning to meet with CSIRO in late 2024 or early 2025 to discuss their progress with waste characterisation at Woomera and ongoing waste management plans.

Dr. Hirth informed the Committee that ARPANSA had conducted a safety culture assessment (SCA). The full assessment report had been released to ARPANSA staff and a presentation of the SCA to the Committee was noted as an item to be placed on the agenda for the next NSC meeting.

6.2 - Radiation Health Committee (RHC) Update

The Committee was provided with an update on the proceedings of the most recent meeting of the Radiation Health Committee (RHC) held on 30 July 2024. This included a tour of the Ranger Uranium Mine which ceased operations in January 2021. The tour was facilitated by NT Health, the Northern Territory's radiation regulator.

At the July 2024 meeting the RHC endorsed the development of a decommissioning code. The development of this code is of relevance to the NSC due to its application to nuclear facilities. The CEO noted the next meeting of the RHC was planned for 19-20 November 2024.

The minutes of the [RHC](#) meeting are available on ARPANSA's website.

6.3 - Radiation Health and Safety Advisory Council (RHSAC)

The Committee was provided with an update on the RHSAC (the Council), who met on 1 August 2024. The Council discussed ARPANSA's Reconciliation Action Plan (RAP) and attended the October RAP launch event. The council were also updated on ongoing discussions with NPSRD and ARWA. The majority of discussions centred around existing guidance on waste across Australia's regulatory jurisdictions. It was acknowledged that there are gaps within Australia's guidance and that there is a need to update existing guidance. The CEO noted the next meeting of the RHSAC was planned for 21 November 2024.

The minutes of the [RHSAC](#) meeting are available on ARPANSA's website.

7 - Update on the Australian Naval Nuclear Powered Safety Regulator (ANNPSR)/Nuclear Powered Submarine Regulatory Design Team (NPSRD)

RADM Richards, Head Nuclear Powered Submarine Regulatory Design (HNPSRD), provided the Committee with an update on the current progress and remaining activities in standing up the ANNPSR.

NPSRD detailed the scope of ANNPS regulations and their focus. The ANNPSR workforce development plan was also outlined, with detail provided on plans for training and the verification of competency. NPSRD also outlined their next steps regarding consultation with various stakeholders, including the public, government departments and agencies, and industry.

8 - Information on Nuclear Safety Matters and Regulatory Activities

The information provided was noted as read.

9 - Meeting Close

The next meeting of the NSC is scheduled for March 2025, with the exact date to be confirmed.