



**NUCLEAR SAFETY COMMITTEE  
TRIENNIUM REPORT 2002-2005**

**Introduction**

The Nuclear Safety Committee was established in 1999 under the *ARPANS Act 1998* with the following functions:

- (a) to advise the CEO on matters relating to nuclear safety and the safety of controlled facilities;
- (b) to review and assess the effectiveness of standards, codes, practices and procedures in relation to the safety of controlled facilities;
- (c) to develop detailed policies and to prepare draft publications for the promotion of uniform national standards in relation to the safety of controlled facilities;
- (d) to report to the CEO on matters relating to nuclear safety and the safety of controlled facilities.

The Committee Members appointed in December 2002 for the 2003-2005 triennium were:

**Chair:**

**Radiation Health Committee representative:**

Dr Barbara Shields (Tas)

**CEO:**

Dr John Loy (NSW)

**Person to represent the interests of the general public:**

Dr Alan Roberts (Vic)

**Person to represent local government/administration of an area affected by a matter related to a controlled facility:**

Dr Garry Smith (NSW)

**Up to 8 other Members:**

Emeritus Professor Ian Polmear (VIC)

Professor Robert Melchers (NSW)

Dr Rob Lee (ACT)

Professor Peter Johnston (VIC)

Mr Bob McAneny (NSW) – retired from NSC, 25 November 2003

Dr Neil McDonald (NSW)

Dr Tamie Weaver (VIC)

Professor Marcela Bilek (NSW)

**Committee Advice to CEO of ARPANSA**

The Committee held eleven meetings during the triennium, one of which was a special briefing on the incorrectly drilled penetration holes in the OPAL reactor pool liner (14 July 2003). In February 2005, the Committee was also invited to attend a briefing by an IAEA peer review team on its review of the application from ANSTO for an Operating Licence for the OPAL Reactor. A wide range of issues was considered by NSC relating to:

- the construction of the Replacement Research Reactor (now called OPAL (Open-pool Australian Light-water Reactor));
- an application from the Department of Education, Science and Training (DEST) for a licence to site, construct and operate a National Radioactive Waste Repository (withdrawn in July 2004); and
- an application from ANSTO for a licence to operate OPAL.

In particular, the NSC was briefed and provided advice to the CEO on the following issues:

#### *Emergency Preparedness and Response*

NSC was advised that a technical report dealing with emergency preparedness and emergency management had been prepared covering:

- the levels of Defence-in-Depth;
- the sabotage scenarios considered;
- some of the parameters that would affect radiological consequences of an event;
- the decision parameters for emergency actions;
- the role of ARPANSA; and
- emergency planning issues.

Members also provided input during the drafting stages to a set of recommendations for intervention levels in radiological emergencies including levels for sheltering, evacuation and iodine prophylaxis. These recommendations have since been published as Radiation Protection Series No 7 following a public comment period.

#### *Decommissioning of HIFAR*

NSC was briefed on possible options for the decommissioning of HIFAR. NSC considered the proposed options and prepared advice to the CEO on the issue. The advice was made available on the ARPANSA web site at <http://www.arpansa.gov.au/pubs/nsc/hifar.pdf>. Further information would be provided to the NSC on the issue as the time of decommissioning approached.

#### *National Radioactive Waste Repository (NRWR)*

In August 2003, the CEO of ARPANSA received an application from the Department of Education, Science and Training (DEST) to site, construct and operate a NRWR. Following a request for advice from the CEO, NSC formed two working groups to investigate hydrogeological aspects relating to the proposed site of the NRWR and engineered barriers relating to the NRWR. The Committee made several recommendations to the CEO in its final report, which was in turn forwarded to DEST for consideration, and a copy was placed on the ARPANSA web site.

In July 2004, a Prime Ministerial decision ceased all work on the NRWR and the application for a licence was withdrawn. All documents relating to the application from DEST, including the NSC report, were subsequently removed from the ARPANSA web site.

#### *Pre-disposal Management of Spent Fuel*

In December 2002, the Radiation Health and Safety Advisory Council provided advice to the CEO on radioactive waste. Recommendation two of that advice stated that “ARPANSA should develop a guidance document on the pre-disposal management of spent fuel considering relevant international experience and recommendations”.

A joint NSC-RHC working group was formed to investigate national and international approaches towards the pre-disposal management of spent fuel. The Working Group drafted advice indicating that there was sufficient international guidance in this area, and that Australia would not need to develop its own guidance. Once approved by both Committees, the Working Group advice was forwarded to the CEO for consideration.

#### *Application for a Licence to Operate the OPAL Reactor*

In September 2004, the CEO of ARPANSA received an application from ANSTO to operate the OPAL Reactor. Following a request for advice from the CEO, NSC formed two working groups at its November 2004 meeting to investigate the adequacy of radioactive waste management and the conduct of operations relating to OPAL. The Committee finalised its report in September 2005, which was forwarded to ANSTO for consideration. A copy of the Final Report was placed on the ARPANSA web site at [http://www.arpansa.gov.au/pubs/nsc/nsc\\_op\\_lic\\_rpt.pdf](http://www.arpansa.gov.au/pubs/nsc/nsc_op_lic_rpt.pdf).

#### *Other issues covered*

Other issues were brought to the attention of the Committee during the triennium including:

- Regular updates on the progress of construction of the OPAL Reactor;
- Proposed changes to the molybdenum production method at Lucas Heights;
- The NSW policy on strategies for off-site iodine distribution in the event of an incident at Lucas Heights;
- Outcomes of inspections carried out by ARPANSA.

#### *Site visits*

The NSC visited the:

- ARPANSA Melbourne laboratories in June 2003 for a briefing on ARPANSA emergency preparedness operations, the comprehensive test ban treaty program, the lung and whole body monitoring facilities and other related areas;
- OPAL reactor site in June 2004 to view the progress of construction and be briefed by ANSTO;
- ANSTO site in February 2005 for a comprehensive tour of the waste management facilities and a briefing on waste management practices and planned developments.

In addition, Dr Weaver visited the proposed site for the NRWR, Site 40a, in December 2003 in her capacity as Chair of the Working Group investigating hydrogeological aspects for the NSC Report to the CEO on the NRWR.

## **Conclusions**

In summary, during this triennium NSC has discussed and provided advice on a wide range of nuclear safety issues. The reconstituted Committee for the 2006-2008 triennium is expected to continue to consider issues relating to the OPAL Reactor, including the outcomes of the commissioning process, the operation of the reactor should a licence be issued and the decommissioning of HIFAR.