Australian Radiation Protection and Nuclear Safety Agency

Statement by the CEO of ARPANSA on the ANSTO surrender of Controlled Facility Licence F0001 Authorisation to Prepare a Site for the Replacement Research Reactor

I issued facility licence F0001 authorising ANSTO to prepare a site for the Replacement Research Reactor on 22 September 1999 and amended the licence on 23 August 2001 to include specific reference to the controlled persons covered by the licence[1]. A Licence[2], F0118, to construct the replacement research reactor was issued by me on 4 April 2002.

ANSTO has supplied 15 quarterly reports itemising the status of compliance with the F0001 conditions. ARPANSA Regulatory Branch has provided me with an assessment and recommendations regarding compliance with the F0001 Schedule 4 General Conditions in table 1 and with the F0001 schedule 5 special conditions in table 2.

The authorised conduct to prepare a site under licence F001 has now been completed by the licence holder, noting that licence F0118 authorises construction as interpreted in schedule 1 of F0118. Further, I have determined that all F001 schedule 5 licence conditions have either been satisfied or are covered by licence F0118.

Consequently I have approved the surrender by ANSTO of facility licence F0001, Authorisation to Prepare a Site for the Replacement Research Reactor, in accordance with section 39 of the *Australian Radiation Protection and Nuclear Safety Act 1998.*

John Loy
CEO of ARPANSA
18 July 2003

Attachments:

Table 1: Status of compliance with licence F0001 schedule 4 general conditions
Table 2: Status of compliance with licence F001 schedule 5 special conditions
Appendix: extract from Licence F0001 Schedule 5 Special Conditions

A copy of this document and documents relevant to facility licence F0001 is available at http://www.arpansa.gov.au/rrrp.htm#site_lic

1 The F0001 licence and associated documents are at http://www.arpansa.gov.au/rrrp.htm#site_lic
2 The F0118 licence and associated documents can be obtained via http://www.arpansa.gov.au/rrrp.htm

Table 1: Status of compliance with licence F0001 schedule 4 general conditions

No.	Condition	Status of compliance or Reg Br recommendation
4.1	The Licensee must comply with the Act, the Regulations and any further regulations made or prescribed under the Act which apply or are applicable to this Licence or the Controlled Facility licensed hereunder.	This is implicit and well-recognised by ANSTO in the obligations and responsibilities of a Controlled Person. The condition is not needed.
4.2	The Licensee shall ensure that there is no change to the Nominee in respect of the person occupying the position of Nominee or in respect of duties or control, unless the CEO ARPANSA has approved such change**.**	Covered by F0118 condition 4.2.
4.3	The Licensee must ensure that no person acts or continues to act as the Nominee (other than the Nominee detailed in the Application) unless approved by the CEO ARPANSA in his absolute discretion.	Covered by F0118 condition 4.2 and/or 4.3.
4.4	The Licensee must comply with the undertakings, obligations, promises or details in its Application in respect of this Licence.	Covered by F0118 condition 4.1
4.5	This Licence must be prominently displayed at the Principal Place of Business of the Licensee and must be drawn to the attention of all staff, employees, contractors, servants, agents or invitees of the Licensor or any partly or fully owned subsidiary company, organisation or body corporate.	Covered by ANSTO LC Handbook, 2.1 General Arrangements, condition 9, although it should be noted that the ANSTO LC Handbook is not specifically referenced in F0118.
4.6	The Licensee will advise the CEO ARPANSA in writing within seven days of any change in the Principal Place of Business of the Licensee.	Legal advice agrees that this condition is not needed.
4.7	The Licensee must remain a body corporate established under section 4 of the Australian Nuclear Science and Technology Organisation Act 1987 and must advise the CEO ARPANSA in writing within seven days of any change in ownership, constitution or statutory organisation.	Legal advice agrees that this condition is not needed.
4.8	In preparing the Site under this Licence, the Licensee must have regard to the Australian Radiation Protection and Nuclear Safety Agency (April 1999), *Draft Safety Assessment Principles for Controlled Facilities*; Australian Radiation Protection and Nuclear Safety Agency*, Draft Criteria for the Siting of Controlled Facilities, April 1999*; and any other relevant principles or guidelines issued by the CEO ARPANSA from time to time.	Condition not required. Licence F0118 ensures Licence Holder's compliance with relevant and applicable principles and criteria.

Table 2: Status of compliance with licence F001 schedule 5 special conditions

Condition topic (see Appendix for actual condition)	**Summary of ANSTO actions or status**	**Compliance assessment and Regulatory Branch recommendation**
5.1 Prepare a site	Until the 10th report ANSTO outlined the site preparations undertaken. The 11th report states "the granting of a Facility licence, Construction Authorisation, has superseded this condition".	Regulatory assessment is that the Licence Holder has not performed any activities excluded from the site licence. Regulatory assessment agrees that since the issuance of F0118, this condition is not needed.
5.2 Type of facility	All compliance reports state that ANSTO notes and will comply.	Assessed as being in regular satisfactory compliance. The condition is now covered by F0118 condition 4.1.
5.3 QA System	Recent reports give the same status that all quality management systems (QMS) are in place, certified and audited.	Assessed as being in regular satisfactory compliance. The construction licence application found the QMS to be satisfactory (see Regulatory Assessment Report section 2.4(a); finding 2.4(a)-5). The condition is now covered by F0118 condition 4.1, 4.6 & 4.7.
5.4 QA Auditing	ANSTO quality management system, including the RRR Project, is certified to AS/NZS ISO 9001:2000. INVAP and JEHDI QMS to ISO 9001:1994.	See 5.3. The condition is now covered by F0118 condition 4.1, 4.6 & 4.7.
5.5 Buffer zone boundary and land use	A revised Buffer Zone Plan of Management was developed and accepted by Environment Australia.	This condition is not specific to F0001. As part of ANSTO licensed facilities' safety cases, the effects of nearby land use and facilities must be taken account. Any significant change to land use in the buffer zone that would have significant implications for safety requires the approval of the CEO under regulation 51. Hence a specific condition is not needed.

Table 2: Status of compliance with licence F001 schedule 5 special conditions

Condition topic (see Appendix for actual condition)	**Summary of ANSTO actions or status**	**Compliance assessment and Regulatory Branch recommendation**
5.6 Radiological Characterisation	EM/TN-03/2003 rev.0 reported results of helicopter airborne gamma survey; gamma spectrometry of surface soil samples; and ground based gamma survey.	Regulatory assessment is that there is adequate radiological characterisation including sampling and monitoring of soil, atmosphere, surface water and groundwater, as demonstrated in the licence holder's technical reports given in table 4. Results of the radiological characterisation do not reveal any safety, regulatory or environmental concerns. The condition has been satisfied. Further compliance will be monitored under the requirements of ANSTO licence conditions' handbook standard conditions 2.2.5 related to environmental management (RB-STD-24-01 rev.1) including ANSTO's Environmental Management System, commitment to achieving certification to AS/NZS ISO 14001 by December 2003 and on-going regular environmental surveys. ARPANSA expects that the radiological characterisation will be summarised and referenced in any FSAR.
5.7 (a) Topography and food production review	Analysis of food production data was completed in ANSTO Report EM/TN-04/2003 rev.0, May 2003.	The food production data show that the EIS and site licence application assumption that 25% of food consumed is from food produced with 15 km of the reactor is highly conservative. The food pathway is a negligible contributor to total dose for routine or accidental releases. Compliance is assessed as satisfactory and there is no further action except for ANSTO to summarise and reference such data in any FSAR.
5.7 (b) Population Distribution	Population distribution analysis updated in ANSTO Report EM/TN-04/2003 rev.0, May 2003.	Updated analysis satisfactorily includes the 2001 census data. There has been a minor population increase in all sectors to 4.8 km (additional population of 424) and a 5.8% increase to 25 km (addition of 86,182) compared to 1996 census data. There has been no special needs groups identified. Compliance is assessed as satisfactory and there is no further action except for ANSTO to summarise and reference such data in any FSAR.

Table 2: Status of compliance with licence F001 schedule 5 special conditions

Condition topic (see Appendix for actual condition)	**Summary of ANSTO actions or status**	**Compliance assessment and Regulatory Branch recommendation**
5.7 (c) Groundwater	EM/TN-08/2003 rev.0, May 2003	ANSTO's measurements on groundwater direction and flow rate at the site under heavy precipitation conditions, shows that there is only a small standing water level fluctuation. This supports their conclusion that there is very little apparent groundwater variation directly attributable to heavy rainfall. ARPANSA expects this information to be summarised and referenced in any FSAR.
5.7 (d) Flooding and Stormwater	Construction Environmental Management Plan and Stormwater Control Plan submitted to ARPANSA	ARPANSA received these plans on 29/11/01 and 28/09/01 and notes that Environment Australia has approved or accepted them.
5.7 (e) Seismic Hazards	Consolidated report on methods, criteria and analysis for seismic qualification submitted 30/11/01. Investigation of local seismicity completed.	These additional reports and investigations have confirmed the upper bound for the seismic design basis. ARPANSA expects this information to be summarised and referenced in any FSAR.
5.7 (f) Seismic – Experimental Guide Hall	Refer to PSAR chapter 4.	ARPANSA is satisfied with the information in PSAR chapter 4.6.2 and response to reactive review question 4.2. Compliance achieved satisfactorily.
5.7 (g) Water Tower	Matter resolved as not relevant to RRR.	This condition was determined to be not relevant to F0001.
5.7 (h) Liquid Discharges	EMAP/TN-01/2002 rev.6 August 2002 assessed critical group doses. ANSTO responded to pathway and dose analysis for re-use of grey water on 9/4/03.	The radiological impact of 'grey' water used for evaporative cooling from the proposed co-generation plant, Kurnell, and for watering of golf course has been shown to be extremely small ("below regulatory concern" or trivial) even assuming highly conservative scenarios. Regulatory assessment is that the consideration of all pathways for exposure to liquid effluent has been appropriately assessed and the condition is satisfied. ARPANSA expects this information to be summarised and referenced in any FSAR.
5.8 Communication Tower	Condition satisfied.	This condition has been satisfied.

Table 2: Status of compliance with licence F001 schedule 5 special conditions

Condition topic (see Appendix for actual condition)	**Summary of ANSTO actions or status**	**Compliance assessment and Regulatory Branch recommendation**
5.9 External Events	ANSTO is committed to ongoing monitoring of external events	As assessed in the Construction Application & PSAR, ARPANSA is satisfied with the compliance statements and commitment given in PSAR 3.3.2. Condition is ongoing as part of F0118 condition 4.8 on updating the safety case. ARPANSA expects information on external events to be regularly updated and summarised and referenced in any FSAR.
5.10 Design Bases	Refer to PSAR	ARPANSA is satisfied that PSAR chapters 3, 4, 14, and 16, and responses to RRQs (eg 4.23 on wind loads) appropriately take account of the listed items (a) to (h) affecting the design bases of the facility. Condition is ongoing as part of F0118 conditions 4.6, 4.7 & 4.8.
5.11 Quarterly reporting	Fourteen quarterly reports produced to end of March 2003	Regulatory Branch is satisfied with the Licence Holder's compliance reporting.

5. Special Conditions

5.1 The Licensee may only prepare the Site authorised under this Licence, and must not construct, possess, control, operate or decommission the Replacement Research Reactor Facility (unless licensed or properly authorised by the CEO ARPANSA under the Act) or otherwise engage in conduct which is prohibited under the Act, the Regulations or any further regulations made under the Act.

5.2 The site to be prepared by the Licensee under this Licence will only be used for the kind or category of controlled facility described in the Application.

5.3 The Licensee shall ensure that ANSTO and vendor/contractor quality assurance systems for preparing the Site are clearly specified and have recognised quality practices accreditation

5.4 The Licensee shall ensure that it complies with any quality assurance systems specified in Special Condition 5.3 of this Licence and that such compliance can be readily verified by audit.

5.5 The Licensee shall ensure that there are no changes to the boundaries or use of land within the Buffer Zone unless the CEO ARPANSA has approved such change in his absolute discretion.

5.6 The Licensee shall establish a radiological characterisation of the Site for the Replacement Research Reactor Facility and a radiological characterisation of the Buffer Zone to provide a fundamental basis for ongoing radiological monitoring programs and the detection of radiological trends over time.

5.7 The Licensee shall ensure that:

(a) a review of the topography and food production farming within 15 km of the Site is performed to confirm the likely impact of radioactive discharges from the Replacement Reactor Facility, and submitted to the CEO ARPANSA as soon as is reasonably practicable;

(b) the population distribution estimates submitted with the Application are confirmed, and that any special needs groups within 5 km of the Site are identified, and submitted to the CEO ARPANSA as soon as is reasonably practicable;

(c) an investigation of ground water direction and flow rate at the Site under heavy precipitation conditions is performed, and the results submitted to the CEO ARPANSA as soon as is reasonably practicable;

(d) the severity of local flooding at the Site is estimated having regard to the stormwater control plan recommended by Environment Australia in the Environment Assessment Report and be documented in the Preliminary Safety Analysis Report;

(e) the additional analysis of seismic hazards at the Site arising from the HIFAR Probabilistic Safety Assessment to describe uncertainties in the seismic characteristics of the Site and confirm the conservative upper bound value for use as a design basis for the Replacement Research Reactor Facility, is completed and submitted to the CEO

ARPANSA as soon as is reasonable practicable together with documentation detailing the resolution of any issues raised by the analysis;

(f) design bases for seismic events are determined for the Experimental Guide Hall;

(g) seismic upgrading work to the LHSTC water tower as recommended in the Horoschun report in 1985 is completed as soon as is reasonably practicable;

(h) further assessment and analysis is completed as soon as is reasonably practicable to ensure that all possible exposure pathways for radiological doses to people and future events at the Cronulla Sewage Treatment Plant are taken into account in determining radiation doses arising from liquid discharges.

5.8 The Licensee shall confirm that the communication tower located near the Site will not be capable of transmitting radiation that could interfere with the electrical equipment of the Replacement Research Reactor Facility.

5.9 The Licensee shall ensure that the Preliminary Safety Analysis Report for the Replacement Research Reactor Facility includes provision for ongoing monitoring and audit of the frequency and severity of external events to ensure that assessed risks to the replacement reactor remain valid and acceptable, taking into account new developments in the vicinity of the reactor over time.

5.10 The Licensee shall ensure that the design bases for the Replacement Research Reactor Facility take account of:

(a) interruptions to off-site and on-site water and off-site electrical power supplies due to seismic events;

(b) lightning strikes;

(c) ground water leakage into spent fuel stores;

(d) intense precipitation events;

(e) loss of off-site electrical supplies impacting on water supply and fire-fighting capability;

(f) interruptions to electrical supplies during parallel operation of the proposed reactor and HIFAR;

(g) sabotage events, and

(h) the impact of bushfires on the Replacement Research Reactor Facility, its essential services and emergency planning arrangements.

5.11 The Licensee shall report to the CEO ARPANSA within three months of the date of issue of this Licence, for agreement, on the program and schedule for arrangements to ensure compliance with the conditions of this Licence, and every three months thereafter on the progress for implementation.
