



Australian Government

Australian Radiation Protection and Nuclear Safety Agency

Dr A Paterson
Chief Executive
Australian Nuclear Science and Technology Organisation
Locked Bag 2001
Kirrawee
DC NSW 2232

22 December 2010

Decision in relation to the Application A0230 – Facility Licence to Decommission the Camperdown Facility and the National Medical Cyclotron under Section 32 of the *Australian Radiation Protection and Nuclear Safety Act 1998*

Decision

Pursuant to section 32 of the *Australian Radiation Protection and Nuclear Safety Act 1998* (the Act) I have decided to issue a facility licence authorising the Australian Nuclear Science and Technology Organisation to decommission the Camperdown Facility and National Medical Cyclotron subject to conditions imposed by the Act and the Regulations as well as the following:

- 2.1 The Licence Holder must provide a report of Stage 1 Decommissioning activities at the conclusion of Stage.
- 2.2 The Licence Holder must seek the prior approval of the CEO of ARPANSA before undertaking Stage 2 Decommissioning activities.
- 2.3 The Licence Holder must provide a report of Stage 2 Decommissioning activities at the conclusion of Stage 2.

The issue

On 7 September 2010, you submitted an application for a facility licence to decommission the Camperdown facility and National Medical Cyclotron (“the Application”) on behalf of the Australian Nuclear Science and Technology Organisation (ANSTO) (“the Applicant”) signed by you as office holder of the Applicant.

The Camperdown Facility and National Medical Cyclotron, the subject of the Application for a Facility licence to decommission the facilities, processed and irradiated targets for the production of radiopharmaceuticals for medicine. The facility produced approximately 2

million patient doses during its operation. On 14 October 2009, production ceased at the Camperdown facility.

The Application proposes that decommissioning occur in two stages. In the first stage it is proposed to decommission the items in the vault and the other areas of the facility. This work involves dismantling and removal of the 30 MeV cyclotron from the vault and transport of the cyclotron to the Lucas Heights site, removal of items from the Positron Emission Tomography (PET) room and control room and removal of hot cells ("Stage 1"), which is planned to be carried out over a period of three months.

In the second stage the remaining items, principally the equipment in the Single Photon Emission Computed Tomography (SPECT) beam rooms and in the radiochemical production area are proposed to be decommissioned ("Stage 2"), which is planned to be carried out over a period of five months.

ARPANSA Handling of the Application

On 10 November 2010 and 23 November 2010 information was made available to the public about my intention to make a decision on the Application and details about the public submission process. This process included request for written submissions to be sent to ARPANSA by 10 December 2010 and a public forum that was held on 30 November 2010.

On 16 December 2010 ANSTO provided a response to the substantive matters raised in the public submission.

A number of ARPANSA experts have reviewed the Application and provided advice to me and I have dealt with their review and the content of the public submissions thematically in the context of the decision and my statement of reasons. Your response to the submission has been taken into account by me in this decision.

Decision making framework

As required by section 32 of the Act, in making my decision I have had regard to:

- International best practice in radiation protection and nuclear safety in the context of decommissioning the Camperdown Facility
- The content of public submissions made by the public in the context of this Application
- Whether the information contained in the Application establishes that the proposed conduct of decommissioning the Camperdown Facility can be carried out without undue risk to the health and safety of people and to the environment.
- Whether the Applicant has shown that there is a net benefit from the conduct
- Whether the Applicant has shown that the magnitude of individual doses, the number of people exposed, and the likelihood that exposure will happen are as low as reasonably achievable, having regard to social and economic factors

- Whether the Applicant has shown a capacity for complying with these regulations and the licence conditions that would be imposed under section 35 of the Act
- Whether the Application has been signed by an office holder of the applicant

Statement of Reasons

International best practice in radiation protection and nuclear safety

In the Application, ANSTO refers to a number of IAEA documents that shaped its approach to the task of decommissioning the Camperdown Facility. The IAEA WS-G-2.2, *Decommissioning of Medical, Industrial and Research Facilities*, 1999 lists five critical tasks in decommissioning; characterisation of the facility, source removal, decontamination, dismantling and a final radiation survey.

- I am satisfied that all of the critical tasks referred to in IAEA WS-G-2.2, *Decommissioning of Medical, Industrial and Research Facilities*, 1999, have been demonstrated to have formed the basis of planning in the ANSTO Camperdown decommissioning project.

In relation to staged or phased decommissioning, ANSTO referred to IAEA TEDOC 1394, *Planning, Managing and Organising the Decommissioning of Nuclear Facilities: Lessons Learned*, 2004, where it is mentioned that regulatory bodies generally recognise that there can be some safety documentation or technical actions that are not initially completed and that a practical solution which allows the project to continue is an agreed action plan.

In this regard ANSTO has submitted detailed planning for the first stage work which has allowed estimation of dose estimates and other detailed safety assessments to be carried out prior to the finalisation of documentation related to Stage 2. ANSTO has also outlined scope and target date for the second stage. ANSTO states that the same detailed planning and safety assessments will be submitted prior to the second stage work.

- I am satisfied with this approach to decommissioning and have imposed three additional licence conditions on the licence to manage this staged approach in a safe manner and with due regard to radiation safety.

In relation to safety assessment, ANSTO refers to the guidelines described in IAEA safety guide WS-G-5.2, *Safety Assessment for the Decommissioning of Facilities using Radioactive Materials*, 2008.

- I am satisfied that ANSTO utilised this guidance in the preparation of its *Safety Management Plan* and the *Decommissioning Safety Assessment* which formed part of this Application.

Public submissions received during the Application review process

The three public submissions received during the review of the Application were from the City of Sydney, University of Sydney and another submitter who wishes their submission to

remain confidential. I note that you responded to the substance of all submissions in your response of 16 December 2010.

- I am satisfied with the responses that ANSTO provided which demonstrate that ANSTO is committed to ensuring and has the plans and arrangements in place to ensure that during the decommissioning of the Camperdown Facility the radiation and nuclear safety hazards can be minimised, emergency arrangements are appropriate and all key stakeholders will be consulted and involved in the planning for an emergency and have been given key documents for consideration, use of the crane to lift the cyclotron can be undertaken in such a manner as to minimise risks, the diesel tank bund has sufficient capacity and that other non-radiological hazards or matters (such as hours of work and traffic) will be managed appropriately to minimise risks and comply with relevant legislation.

Whether the information contained in the Application establishes that the proposed conduct of decommissioning the Camperdown Facility can be carried out without undue risk to the health and safety of people and to the environment.

The Application included plans and arrangements for managing safety which describe how the Applicant proposes to manage the activity to ensure the health and safety of people and the protection of the environment.

Having reviewed the application I am satisfied that the Applicant has demonstrated:

- Effective control of decommissioning through project management, project control and accountabilities,
- Appropriate safety management of decommissioning, including planning, event management, training of personnel (including contractors), hazard identification and control and overall safety assessment, risk assessment and risk mitigation
- Effective radiation protection, including contamination control, radiation protection of personnel and on-going monitoring of the effectiveness of these measures
- Appropriate radioactive waste management including minimisation of waste arising through recycling and re use
- Appropriate security arrangements for the facility having regard to the nature of the security risk to be managed
- Effective emergency planning and preparedness including appropriate engagement with stakeholders, with recognition that it is good practice to ensure appropriate stakeholder engagement in the development, exercise and on-going review of emergency arrangements, as well as early notification in the case of an emergency.
- Appropriate transport of radioactive waste arising from the decommissioning of the Camperdown Facility having regard to the obligations of the Applicant under the Code of Practice for the Safe Transport of Radioactive Material

Whilst my decision making is primarily based on radiation protection and nuclear safety controls, the overall management of hazards and the appreciation of all health and safety issues give me reassurance that there is satisfactory safety management of the project.

Whether the Applicant has shown that there is a net benefit from the conduct

ANSTO states that the benefit of decommissioning the National Medical Cyclotron (i.e. the ANSTO Camperdown Facility) is that it will allow reuse of the building and services to produce radioisotopes for research.

Generally the justification of the need for a facility occurs at the stage of planning, siting and constructing the facility, not at the stage of decommissioning. However the need to deal with the waste arising from the activities undertaken at the facility and the waste arising are issues that need attention and consideration. This has been dealt with in the context of the waste management plan and the transport plan.

- I am satisfied that the Applicant has shown that there is an advantage resulting from decommissioning this facility and dealing with the waste arising in accordance with the Application.

Whether the Applicant has shown that the magnitude of individual doses, the number of people exposed, and the likelihood that exposure will happen are as low as reasonably achievable, having regard to social and economic factors

The Radiation Protection plan demonstrates that the Applicant understands and can apply the ALARA principle when designing the manner in which decommissioning is to be undertaken, including during waste management and transport activities.

- I am satisfied that the magnitude of individual doses, the number of people exposed and the likelihood that exposure will happen are as low as reasonably achievable, having regard to social and economic factors.

Whether the Applicant has shown that a capacity for complying with these regulations and the licence conditions that would be imposed under section 35 of the Act

The Applicant is the CEO of ANSTO. The ANSTO is licensed by ARPANSA to operate a number of nuclear installations and prescribed radiation facilities as well as authorised to deal with sources under a source licence. A capacity to comply with the requirements of the regulations and the licence conditions that will be imposed under section 35 require evidence of appropriate systems to ensure compliance.

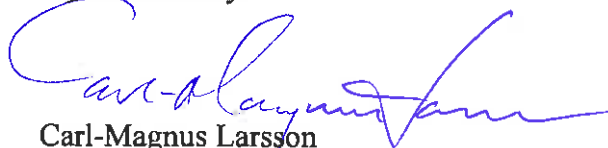
- The content of this Application and the record of the Applicants other licensed activities are evidence of a capacity to comply.

Further issues

As this decision constitutes a reviewable decision for the purposes of the ARPANS Act, I am required to advise you that a request may be made to the Minister to reconsider my decision to issue the licence. Any such request must be made in writing and submitted to the Minister within 90 days of the date of receipt of this letter. The Minister's decision must be given within 60 days of the date of any request received. If a response from the Minister is not received within 60 days, this is deemed to be confirmation of my decision. A request for

review of the Minister's decision may, in turn, be made to the Administrative Appeals Tribunal within 28 days of the Minister's decision.

Yours sincerely



Carl-Magnus Larsson

CEO of ARPANSA