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ANSTO Camperdown Decommissioning Licence Application

Document AC-D-LA-E6f Rev 1

ANSTO CAMPERDOWN FACILITY DECOMMISSIONING

EMERGENCY PLAN

Prepared By

Australian Nuclear Science and Technology Organisation

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1 PURPOSE AND SCOPE

The purpose of this *Emergency Plan* (document number AC-D-LA-E6f, hereafter called "the plan") is to outline the emergency arrangements that are in place within ANSTO which will operate during decommissioning of the IBA “Cyclone 30” 30MeV Cyclotron (known as the National Medical Cyclotron) – a Prescribed Radiation Facility and the Radiopharmaceuticals Operations (Camperdown) – a Nuclear Installation, at Camperdown, NSW. Both facilities are authorised under combined licence F0044-5A, 5B, 5C. For convenience, these two facilities are referred to as “the facility” in this plan.

The scope of this plan are the emergency issues required by the ARPANS legislation [Ref 1, 2] and the ANSTO safety arrangements. It specifically covers the issues referred to in the ARPANSA licensing guidelines relating to the review of plans and arrangements [Ref 3]. The emergency issues are addressed in the following headings in this plan.

This plan should be read in conjunction with the other plans and supporting documents comprising the decommissioning licence, specifically AC-D-LA-E6b *Safety Management Plan* [Ref 4] and AC-D-LA-E6e *Security Plan* [Ref 5].

2 EMERGENCY PLANS

Since the radiopharmaceuticals manufacturing operations at Camperdown have ceased, the nature of the potential risks has changed. All of the volatile radioactive radiopharmaceuticals have been removed or have decayed and there is no risk of accidental exposure from airborne release. However, there is still some activated equipment and waste which must be managed.

The plan AC-D-LA-E7a *Decommissioning Plan* [Ref 6] describes the activities which will be performed in dismantling the equipment and moving equipment and waste for storage. The risk and the controls for exposure to radiation from this activated equipment and waste is discussed in AC-D-LA-E6c *Radiation Protection Plan* [Ref 7]. An assessment of all of the risks is given in the *Safety Assessment*. As would be expected, there are risks of industrial accidents during the decommissioning activities which were not present during operation.

This plan describes the emergency arrangements for the decommissioning. Generally the arrangements for the radiopharmaceuticals manufacturing are still in place. When the new work teams start but before the decommissioning work commences, there will be emergency drills to exercise these arrangements for the new staff.

The Works Coordinator is responsible for ensuring the emergency arrangements are in place and all those involved are trained in their roles. As described in AC-D-LA-E7e *Security Plan*, the Security Officer is the Building Warden who is responsible for marshalling evacuees and securing the building. There will be a trained deputy for this role. The Health Physics Surveyor and Radiation Protection Adviser have roles in radiation incidents as part of the ANSTO general emergency response arrangements and these are described in the next section on emergency procedures.

Some risks which were not present during operations arise from the transport of the activated cyclotron components and materials to Lucas Heights. The transport activities are described in the *Decommissioning Plan* and the risks have been considered in the risk assessment ANSTO-T-TN-2010-9 *Safety Assessment for the Decommissioning of ANSTO Camperdown Facility* [Ref 8]. Because the radiation dose levels are low and arise from fixed activated material, the transport risks are those for a normal traffic accident and there is only a very low risk of radiation exposure to the public. A specialist contractor will plan and execute the transport of the heavy cyclotron magnetic structure to Lucas Heights and they will have accident procedures in place. A Health Physics Surveyor will travel in the escort crew to help manage any accidents.

3 EMERGENCY PROCEDURES

The purpose of this plan is to ensure an appropriate, rapid response to all possible emergencies in order to minimise the risk to staff, the public and the environment. The procedure for the initial response to an incident will be practised in the emergency drills before the decommissioning work commences. It is similar to the emergency response in place during the radiopharmaceuticals manufacturing and has been reviewed by project staff including the Works Coordinator to ensure it is

appropriate for the decommissioning. To ensure that the accident scenarios specific to the decommissioning activities are considered, a specific decommissioning emergency procedure will be developed when there is full detail on all tasks and this will be exercised before the main decommissioning work. This is the subject of a recommendation in the Decommissioning Safety Assessment [Ref 8].

If an incident or accident occurs which requires a greater response, the ANSTO emergency response arrangements will be invoked. Central to these arrangements is the ANSTO Operations Centre which is manned 24/7 and is the focal point for communications in an emergency. As described in the Security Plan, in addition to the security alarms, all safety alarms are monitored and all calls to the ANSTO emergency number are directed to this centre.

This next level of emergency response is managed by an ANSTO on-call role known as the Duty Safety Co-ordinator. These arrangements are described in SOP 05 *Duty Safety Co-ordinator (DSC) – Role in Emergencies* [Ref 9]. This role is staffed 24/7 by a senior ANSTO safety officer who is contactable by phone or pager. This officer is experienced in the emergency arrangements and has the necessary authority to take control of the emergency and command further ANSTO resources if required. The DSC will ensure that the local response is satisfactory and, where necessary, that the external emergency response services are contacted. The response to an incident may be escalated to the DSC in two ways. The officers in the Operations Centre have defined responses for each alarm and for some alarm situations, the automatic response is to inform the DSC. The DSC will also be contacted by the Operations Centre when there is a call to the centre requesting further emergency assistance.

ANSTO Radiation Protection Services section maintains 24/7 health physics support for radiation incidents. This service is described in SOP 28 *On Call Health Physics Surveyor (HPS)* [Ref 10]. An experienced HPS is contactable by phone or pager and can respond to any CBD location in a vehicle containing the necessary radiation detection and decontamination equipment. This service is available to the DSC, although it is unlikely to be necessary during the Camperdown decommissioning for two reasons. Firstly, the risk of incident is low because there are no longer any high-activity, mobile radioisotopes and secondly, the work planning processes will ensure there is a HPS on hand for any potentially hazardous activities.

If necessary, the DSC can seek senior management advice and support through the arrangements described in SOP 06 *Senior Management Support for Emergencies* [Ref 11]. External communications to the media and other organisations is through ANSTO Communications and the Combat Agency for the emergency.

4 EMERGENCY PREPAREDNESS

The emergency arrangements described in the previous sections include back-up for all emergency roles. The ANSTO Operations Centre, which is the emergency communications point, is manned 24/7 and there are always back-up officers at the site. The DSC and the on-call HPS roles are rostered 24/7 and any absences are covered by alternates.

All staff with a role in emergency response are trained and the emergency arrangements are exercised. As discussed, there will be emergency exercise drills when the work teams are in place before decommissioning commences. The higher-level response arrangements involving the DSC are exercised regularly and some of these exercises involve the external emergency services. There is ongoing review of the emergency arrangements, including updating of the contact lists and safety alarm responses.

The necessary emergency equipment, including radiation monitoring equipment, is available at the Camperdown Facility and in the on-call HPS response vehicle. All of this radiation equipment is regularly checked and maintained in calibration by the ANSTO Instrument Calibration Facility in the RPS section.

5 REFERENCES

1. Australian Radiation Protection and Nuclear Safety (ARPANS) Act 1998

2. Australian Radiation Protection and Nuclear Safety (ARPANS) Regulations 1999

3. ARPANSA RB-STD-15-03 *Regulatory Guideline on Review of Plans and Arrangements*, August 2003

4. ANSTO Camperdown Decommissioning Licence Application AC-D-LA-E6b *Safety Management Plan*, June 2010

5. ANSTO Camperdown Decommissioning Licence Application AC-D-LA-E6e *Security Plan*, June 2010

6. ANSTO Camperdown Decommissioning Licence Application AC-D-LA-E7a *Decommissioning Plan*, June 2010

7. ANSTO Camperdown Decommissioning Licence Application AC-D-LA-E6c *Radiation Protection Plan*, June 2010

8. ANSTO-T-TN-2010-9 *Safety Assessment for the Decommissioning of ANSTO Camperdown Facility*, June 2010

9. ANSTO OHSE SOP 05 *Duty Safety Co-ordinator (DSC) – Role in Emergencies*, November 2009

10. ANSTO OHSE SOP 28 *On Call Health Physics Surveyor (HPS)*, August 2006

11. ANSTO OHSE SOP 06 *Senior Management Support for Emergencies*, February 2009