



**Risk Management – Operation of SAC**

**Safety Assurance Committee Application Form**

SAC No:	1981/13	Contact SAC manager for a number prior to submitting this form
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Previous SAC No (if applicable):

Title: Little Forest Legacy Site (LFLS) 'Possess or Control' Licence Application

Location of Proposed Operation	Building No:	LFLS
	Room No:	N/A

<b>Type of Submission</b> • Urgent SAC Approval requests must be made in writing to the Chair of SAC by your GM/IH.	New	<input checked="" type="checkbox"/>
	Renewal	<input type="checkbox"/>
	Modified	<input type="checkbox"/>
	Urgent	<input type="checkbox"/>

Proposed Date of Commencement:	December 2013
Frequency and Expected Full Term Operation of the Process or Facility:	On going.

Responsible Officer:	Kapila Fernando <small>(Insert Name)</small>	Signature:	
		Date:	29.08.2014
Engineering Services Project Leader: <small>(if applicable)</small>	Daniel Pond <small>(Insert Name)</small>	Signature:	
		Date:	28/08/14

Radiological Classification of the Locality			
Radiation:	White <input checked="" type="checkbox"/>	Contamination:	White <input checked="" type="checkbox"/>
	Blue <input type="checkbox"/>		Blue <input type="checkbox"/>
	Red <input type="checkbox"/>		Red <input type="checkbox"/>
Area Supervisor:	Duncan Kemp <small>(Insert Name)</small>	Signature:	
		Date:	1/9/14

I have reviewed the information in this Request for WHS Approval and am satisfied with the safety of the operation/facility described herein.

Line Manager/*	Hefin Griffiths <small>(Insert Name)</small>	Signature:	
Officer-in-Charge:		Date:	29-8-2014.
Building Manager:	Duncan Kemp <small>(Insert Name)</small>	Signature:	
		Date:	1/9/14

\*Note that the line manager must be a different signatory to the responsible officer.

Noted by Facility Officer: <small>(if applicable – Facility refers to ARPANSA licenced Facility )</small>	Duncan Kemp <small>(Insert Name)</small>	Signature:	
		Date:	1/9/14

**1. Information on the Project or Facility**

- a) Describe below the proposed work and the normal operating procedures. Include as much detail as possible. If this request is a modification of an existing submission, clearly describe that modification. If the application is a renewal – describe any changes which have occurred since the last time the application was approved

This submission is seeking approval for a ‘possess or control’ licence application of the Little Forest Legacy Site (LFLS). The licence application was originally submitted to ARPANSA in 1999 and in this submission; ANSTO has updated all the documentation and provided additional information and clarifications to the original licence application.

The site is a radioactive waste storage facility and therefore, it is a Nuclear Installation as per the ARPANS Act and Regulations.

The LFLS is situated within the buffer zone of ANSTO on a cleared block of land (area = 49,350 square metres) located at a distance of 1.6 km to 1.95 km north of the HIFAR Reactor Building. The purpose of the LFLS was to provide near-surface storage (by burial in 3 metre deep trenches) of legacy low level waste from the AAEC and other organisations within Australia. The burials, which took place from 1960 to 1968, were in line with internationally accepted practice at that time and provided an efficient means of disposal for equipment and waste contaminated with low levels of radioactivity, effluent sludge and chemicals (including Beryllium).

The site contains low level solid radioactive wastes, some liquid wastes and beryllium/beryllium oxide wastes. During the period 1960 to 1968 a number of shallow trenches (25m long, 0.6m wide and 3m deep) were progressively excavated into the weathered shale clay soil and about 1600 cubic metres of waste was buried. No wastes have been placed in the site or removed from the site since it was closed in 1968.

Therefore, the only operational tasks undertaken at the site are routine inspection and monitoring activities in and around the site.

Further information about the facility is provided in the *Purpose and Description of the Facility*, Document No. LFBG-PC-LA-FD.

- b) List below attachments (eg drawings, SWMES, decommissioning information where relevant, work instructions, manuals, calculations, relevant email correspondence, survey reports) included with this submission.

1. ARPANSA Licence Application Form for LFLS
2. LFLS Effective Control Plan, Document No. LFBG-PC-LA-D1
3. LFLS Safety Management Plan, Document No. LFBG-PC-LA-D2
4. LFLS Radiation Protection Plan Document No. LFBG-PC-LA-D3
5. LFLS waste Management Plan Document No. LFBG-PC-LA-D4
6. LFLS Security Plan Document No. LFBG-PC-LA-D5
7. LFLS Emergency Plan Document No. LFBG-PC-LA-D6
8. Safety Assessment of the LFLS, ANSTO/T/TN/2013-10
9. Purpose and Description of the Facility, Document No. LFBG-PC-LA-FD.
10. Safe Storage and Maintenance Arrangement of LFLS, Document No. LFBG-PC-LA-SS.

**2. Identification of Hazards**

- a) Indicate below the type of hazards expected in the process.

Biological	<input type="checkbox"/>	High or Low Pressure	<input type="checkbox"/>
Chemical (including gas)	<input checked="" type="checkbox"/>	High or Low Temperature	<input type="checkbox"/>
Confined Space	<input type="checkbox"/>	Ionising Radiation	<input checked="" type="checkbox"/>
Construction	<input type="checkbox"/>	Hazardous Manual Tasks (formerly Manual Handling)	<input checked="" type="checkbox"/>
Cryogenics	<input type="checkbox"/>	Mechanical	<input type="checkbox"/>
Dust	<input checked="" type="checkbox"/>	Noise	<input type="checkbox"/>

Electrical	<input type="checkbox"/>	Non-ionising Radiation (eg lasers, microwaves, UV)	<input type="checkbox"/>
Environmental	<input checked="" type="checkbox"/>	Nuclear Safety	<input type="checkbox"/>
Fire/Explosion	<input type="checkbox"/>	Radioactive Contamination	<input checked="" type="checkbox"/>
Heights	<input type="checkbox"/>		

### 3. Hazard Control Measures

a) Indicate below the controls on hazards that are in place during **normal** operating conditions of the plant or process. This will aid in the completion of Section 14 (via Appendix E).

**Abnormal** hazardous conditions must also be assessed in the risk ranking form (Appendix E) in Section 14.

*Note: The LFLS facility is in shutdown mode (i.e. closed site). No wastes are placed or removed from the site since it was closed in 1968. Therefore, there are no operational activities undertaken at the site. The controls noted below are applicable for the 'possess or control' phase of the facility only.*

Fume Cupboard	<input type="checkbox"/>	Lifting Equipment	<input type="checkbox"/>
Extract Ventilation	<input type="checkbox"/>	Chemical Storage Facility	<input type="checkbox"/>
Extract System with Filter	<input type="checkbox"/>	Spill Control	<input type="checkbox"/>
Biohazard Cabinet	<input type="checkbox"/>	Leak Testing	<input type="checkbox"/>
Glove Box	<input type="checkbox"/>	Insulation	<input type="checkbox"/>
Hot Cell	<input type="checkbox"/>	Hazardous Area Equipment	<input type="checkbox"/>
Shielding	<input type="checkbox"/>	Earthed Equipment	<input type="checkbox"/>
Gas Blanket	<input type="checkbox"/>	Work at Height Protection	<input type="checkbox"/>
Fire Detection & Alarm	<input type="checkbox"/>	Respiratory Protection	<input type="checkbox"/>
Gas Detection & Alarm	<input type="checkbox"/>	Skin Protection	<input checked="" type="checkbox"/>
Fire Protection	<input type="checkbox"/>	Eye Protection	<input type="checkbox"/>
Interlocks	<input type="checkbox"/>	Hearing Protection	<input type="checkbox"/>
Machine Guarding	<input type="checkbox"/>	Administrative Procedures	<input checked="" type="checkbox"/>

b) Give further details on the hazard controls in the box below. For example more fully describe any personal protective equipment being used: type of respiratory protection, glove material. Include indicators that the controls are functioning appropriately. These may include routine inspections, tests and maintenance on equipment. Examples of the latter may be: the fume cupboard inspection date; calibration regime for gas detectors.

See the LFLS safety assessment report No. ANSTO/T/TN/2013-10 Rev 0
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c) Indicate below any monitoring performed in the plant or at the process.

Area Radiation Monitors	<input checked="" type="checkbox"/>	Gas or Vapour Sampling	<input type="checkbox"/>
Contamination Monitoring	<input checked="" type="checkbox"/>	Particulate Sampling	<input checked="" type="checkbox"/>
Environmental Monitoring	<input checked="" type="checkbox"/>	Liquid Sampling	<input checked="" type="checkbox"/>

d) Give further details about the monitoring in the box below.

The LFLS is equipped with various monitoring devices and services. There are several boreholes to collect ground water samples in and around the site. Airborne monitors and gamma monitors (dosimeters) are installed at the site. Surface water and soil samples are collected routinely. See further details of the monitoring program in the <i>Safe Storage and Maintenance Arrangements</i> , Document No. LFBG-PC-LA-SS
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### 4. Ionising Radiation

- a) Does the work involve ionising radiation? Yes  No
- b) Is radioactive contamination likely in this work? Yes  No
- c) If the answer to both questions 4 (a) and (b) was 'No', proceed to Part 6 of this form.

- d) If 'Yes' has been given to either question 4 (a) or 4 (b), complete the Employee Data Form in Appendix C.
- e) Does this activity require licensing with ARPANSA? Yes  No
- f) Give reasons in the box below for **either** answer to question 4(e).

The activity of radionuclides in the low level wastes stored in the facility exceeds the threshold specified in the ARPANS Act and Regulations. Therefore, the facility is assessed as a Nuclear Installation and ANSTO is seeking a 'Possess and Control' licence for the facility from ARPANSA.

**5. Criticality**

- a) Does the work involve fissile material (Pu, <sup>233</sup>U or <sup>235</sup>U)? Yes  No

*Note: The LFLS contains low level waste and a very small quantities of Alpha emitting radionuclides (Pu-241). But during the 'possess and control' phase, ANSTO has no plan to undertake any work at the site associated with the wastes.*

- b) If the answer to question 5 (a) was 'Yes', fill in the table below. Attach a copy of the current certificate to this request for approval.

Criticality Certificate No:	
Date Certificate Issued:	
Date Certificate Valid to:	

**6. Ultraviolet Radiation**

- a) Does the work involve the use of ultraviolet radiation? Yes  No
- b) If 'No' has been given to question 6 (a) proceed to Part 7 of this form.
- c) Does this activity require licensing with ARPANSA? Yes  No
- d) Give reasons in the box below for **either** answer to question 6(c).

- e) If the answer to question 6 (a) was 'Yes', attach a copy of the most recent UV radiation survey to this request for approval.

**7. Microwave Radiation**

- a) Does the work involve the use of microwaves or RF? Yes  No
- b) If 'No' has been given to question 7 (a) proceed to Part 8 of this form.
- c) Does this activity require licensing with ARPANSA? Yes  No
- d) Give reasons in the box below for **either** answer to question 7(c).

- e) If the answer to question 7(a) was 'Yes', attach a copy of the most recent microwave radiation survey to this request for approval.

**8. Lasers**

- a) Does the work involve the use of lasers? Yes  No
- b) If 'No' has been given to question 8 (a) proceed to Part 9 of this form.
- c) If 'Yes' has been given to question 8 (a), complete the Laser Safety Form in Appendix D.
- d) Does this activity require licensing with ARPANSA? Yes  No
- e) Give reasons in the box below for **either** answer to question 8(d).

**9. Plant and Equipment**

- a) Does the work involve the use of pressure equipment? Yes   
No
- b) Does the work involve the use of a boiler? Yes   
No
- c) Does the work involve the use of lifting equipment? Yes   
No
- d) If 'Yes' has been given to *either* 9 (a), (b) or (c), fill in the table below:

Description of the Plant/Equipment being Used in this Process	Registration Number	Date Inspection is Valid To

(Note: Rows can be added to this table as necessary)

## 10. Chemicals

- a) Does the work involve the use of dangerous goods or hazardous substances? Yes   
No

Note: *The LFLS contains low level waste and some quantities (~1100 kg) of beryllium. But during the 'possess or control' phase, ANSTO has no plan to undertake any work at the site associated with the wastes. An assessment of the beryllium hazard has been undertaken in the safety assessment (ANSTO/T/TN/2013-10 Rev 0).*

If 'Yes' complete the 'Usage of Chemical Substances Form' in Appendix B.

## 11. Waste Generation

- a) Will waste be generated during this process? Yes   
No

If 'Yes' complete the Waste Generation Form in Appendix A.

## 12. Biological Hazards

Does the work involve?

- a) Dealings with genetically modified organisms Yes   
No
- b) Microorganisms (bacteria, viruses, fungi, algae, protozoans) Yes   
No
- c) Prions Yes   
No
- d) Non-microbial parasites Yes   
No
- e) Toxic molecules/toxins of biological origin Yes   
No
- f) Tissues, fluids, parts, or waste from humans or animals Yes   
No
- g) Live or dead animals Yes   
No
- h) Any other potentially infectious material Yes   
No

**13. Personnel Competencies**

a) Indicate below the particular training or certification required in the process.

Safety Induction	<input checked="" type="checkbox"/>	Safe Working in a Confined Space	<input type="checkbox"/>
Ionising Radiation	<input checked="" type="checkbox"/>	Hazardous Manual Tasks	<input checked="" type="checkbox"/>
Non-ionising Radiation	<input type="checkbox"/>	Lifting Equipment	<input type="checkbox"/>
Chemical Safety	<input checked="" type="checkbox"/>	Personal Protective Equipment	<input checked="" type="checkbox"/>
Cryogenic Safety	<input type="checkbox"/>	Construction Safety	<input checked="" type="checkbox"/>

b) If all personnel do not have the competencies indicated above, give reasons in the box below. (For example a process employs six individuals. A crane may be occasionally used in that process. While a dogman ticket is required by the person operating the crane, not all persons will need that ticket.) Contact the Safety Training Officer if you are unsure of the training that an individual has received.

N/A

**14. Risk Assessment**

a) Unless an alternative risk assessment has already been carried out (and is attached with this submission) - for example a Safe Work Method & Environmental Statement - complete the Hazard Identification and Risk Assessment Form in Appendix E. Consider both normal and abnormal conditions for the operation of the plant and process. The reference document for the completion of the form is [AG2394 ANSTO Guide: Conducting a Risk Assessment](#). In filling out the form you should use the terminology of that reference.

b) Describe the management actions deriving from any part of the risk assessment where the result has been 'Low', 'Intermediate' or 'High'.

See the LFLS safety assessment report No. ANSTO/T/TN/2013-10 Rev 0

## 15. Environmental Assessment

Complete the table below to identify activities that interact with the environment (environmental aspects) and have a potential to impact the environment. Your Local Environmental Coordinator should fill in the last column to determine whether the Aspect is 'Recordable'

Applies	Aspect	Comments (How used, how produced)	Quantity (estimate for this SAC)	Controls Measures taken to reduce impact	Recordable Aspect Reviewed by Local Environmental Coordinator
<input type="checkbox"/>	Potable Water Use (Water supplied by Sydney Water)				<input type="checkbox"/>
<input type="checkbox"/>	Electricity Use (Especially 415V)				<input type="checkbox"/>
<input checked="" type="checkbox"/>	Fuel Use (Petrol, Diesel, Gas)	Inspection of grounds	1500L		<input checked="" type="checkbox"/>
<input type="checkbox"/>	Paper & Packaging (Includes paper, cardboard, glass, metal, plastic)				<input type="checkbox"/>
<input checked="" type="checkbox"/>	Ground Water (Potential for non-radioactive contamination)	Interaction with waste		Monitoring of plume	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Airborne Emissions (Discharges of non radioactive gases/mists)				<input type="checkbox"/>
<input checked="" type="checkbox"/>	Storm water generation (Activities changing storm water flows)	Flows from site		Monitoring of creeks	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Effluent entering sinks and drains (Excluding kitchens, bathrooms etc)				<input type="checkbox"/>
	Are exemption(s) for effluent exceeded? Refer to <a href="#">AG2071 ANSTO Guide: Environmental Aspects Entry Exemption Limit - Disposal to Drain</a>	<input type="checkbox"/> Yes <input type="checkbox"/> No			<input type="checkbox"/>
<input type="checkbox"/>	Dust Generation (Construction, crushing, grinding activities)				<input type="checkbox"/>
<input type="checkbox"/>	Cryogenics (Especially Helium and specialties)				<input type="checkbox"/>
<input type="checkbox"/>	Noise (Potential for noise transmission outside ANSTO boundaries)				<input type="checkbox"/>
<input type="checkbox"/>	Construction				<input type="checkbox"/>



Applies	Aspect	Comments (How used, how produced)	Quantity (estimate for this SAC)	Controls Measures taken to reduce impact	Recordable Aspect Reviewed by Local Environmental Coordinator
	(Buildings, roads, fences)				
<input checked="" type="checkbox"/>	Carcinogenic & Ozone depleting substances See Mandatory Environmental Aspects <a href="#">AG2072 ANSTO Guide: Mandatory Environmental Aspects</a>	Be/BeO are disposed as waste and are not used.	~1100 kg	Elemental beryllium and beryllium oxide are insoluble in water. Recent trench water samples did not find any traces of Be. See safety assessment. .	<input checked="" type="checkbox"/>

### Recordable Environmental Aspects

If the answer to any of the questions a) to e) below is 'yes' then **ensure that the** completed [AF2092 ANSTO Form: Environmental Aspects, Legal and other Requirements Identification Record](#) is signed by the Local Environmental Coordinator and forwarded to Business Systems.


- a. Will the activity involve potential / actual emissions or waste with radioactivity levels that exceed the reference levels defined in Schedule 2 of the ARPANSA Regulations?  
Yes  No
- b. Is the Waste Generation Form in Appendix A of this application to be completed?  
Yes  No
- c. Is the Usage of Chemical Substances Form in Appendix B?  
Yes  No
- d. Is the Use of Radionuclides Form in Appendix C of this application to be completed?  
Yes  No
- e. Are any of the aspects identified in the previous table classed as "recordable"?  
Yes  No

### Local Environmental Coordinator Review

I have reviewed the information provided in this request and:



- I am satisfied that the relevant environmental aspects and impacts are addressed;
- Applicable controls have been identified;
- Environmental aspects have been reviewed for inclusion in the Aspects Register and the form sent to Business Systems
- All supporting documentation has been attached.

Comments by LEC: Fuel use covered by Aspect 131; groundwater monitoring covered by Aspect 133; surface level waters and airborne monitoring covered by Aspect 112		
Name of Local Environment Coordinator	Signature	Date
D Kemp		18/11/2013

## Appendix A

### WHS Approval - Waste Generation

a) Indicate below the type of waste being produced.

Form	Type			Description of Wastes, Volumes, Concentrations, Hazards
	Radioactive	Chemical	Biological	
<b>Solid</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Liquid wastes produced from emptying boreholes – which will be disposed of through site B or C-lines (wherever there is easy access).  Solid wastes will be cloths, sample equipment, etc which will not be radioactive and disposed through normal site processes.
<b>Liquid</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Gas/Vapour</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Mist</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

b) Indicate below how the waste from the plant or process is disposed of.

Into a Container <input type="checkbox"/>	Active Extract System <input type="checkbox"/>
Packaged <input type="checkbox"/>	HEPA Filters <input type="checkbox"/>
Wrapped <input type="checkbox"/>	SIAM Filters <input type="checkbox"/>
Trade Waste 'C' Effluent Line <input checked="" type="checkbox"/>	Inactive Extract System <input type="checkbox"/>
Active Waste 'B' Line <input checked="" type="checkbox"/>	Open Air <input type="checkbox"/>

c) If radioactive waste is being generated, give details in the next table.

Radioisotope	Half Life	Activity (Insert Units)	Estimated Dose per Container

**(Note: Rows can be added to this table as necessary)**

d) Will the waste be handled as part of normal low level solid waste pick-up or “B” line liquid disposal? If not, or there are any different/unusual characteristics of the waste then contact Waste Management to assess requirements and, if necessary, to obtain Waste Reference Number.

Waste Management Reference No:

e) Give below any additional information relevant to the waste management process, (eg special handling requirements or packaging).

f) Will the waste be disposed of by means other than through Waste Management Section?

Yes  No

g) If 'Yes' describe below:



## Appendix B

### WHS Approval - Usage of Chemical Substances

List in the table below all compounds handled in the process that are classed as either a "Hazardous Substance" according to the NOHSC (National Occupational Health & Safety Commission) criteria and/or a "Dangerous Good" according to the ADG (Australian Dangerous Goods) Code. This information may be obtained either from the manufacturer's safety data sheet or from the [Chemwatch Database](#) found on the ANSTO intranet. [Chemical Safety Standard and Practices](#) provides a further resource in the promotion of safe handling, storage and disposal of hazardous compounds.

Compounds	Approximate Quantity being used per month
Beryllium Content as Be/BeO	1070.0 kg <i>(Note: Be/BeO are not in use at LFLS. It is disposed in the trenches as waste)</i>

*(Note: Rows can be added to this table as necessary)*

## Appendix C

### WHS Approval - Use of Radionuclides

a) Provide below information on the personnel participating in this process.

Employee No.	Name	Time in Area (hours/month)
AFP Officers	AFP Officers	36 h/mth in total
	Effluent Plant Operators	2 h/mth each
	Environmental Monitoring	
	Institute Environmental Research	
	Lawn Mower	5 hours per month

*(Note: Rows can be added to this table as necessary) If the hours/month is not known (e.g. runs are infrequent), include an explanation of likely time per run/operation and tick this box*

b) Provide below information on each radionuclide being used in the process.

Radionuclide(s)	Half-life	Physical Form	Chemical Form	Levels of Activity Handled/Month	Type of Containment and/or Shielding

*(Note: Rows can be added to this table as necessary)*

*If the activity/month is not known (e.g. runs are infrequent), include the activity per run/operation instead and tick this box*

**Appendix D**  
**WHS Approval - Lasers**

a) Details of Laser

Manufacturer	
Model	
Serial No.	
Class	

b) Description of the laser

Continuous Wave <input type="checkbox"/>	Visible <input type="checkbox"/>
Pulsed <input type="checkbox"/>	Infrared <input type="checkbox"/>
Ultraviolet <input type="checkbox"/>	

c) Fill in below the applicable values for the laser.

Quantity	Value
Output Power (P)	W
Wavelength ( $\lambda$ )	nm
Repetition Frequency (F)	hz
Energy per Pulse (Q)	J
Pulse Duration (t)	s
Total exposure time (T) (For visible lasers exposure time is limited by blink reflex: 0.25 s. If exposure time is not known typical approximate time is 10 s.)	s
Beam Divergence ( $\phi$ )	Rad
Beam Diameter (a)	m
Cross Sectional Beam Area	$m^2$
Radiant Exposure (H)	$Jm^{-2}$
Irradiance Exposure (E)	$Wm^{-2}$
MPE <sub>ocular</sub> : if E or H > MPE <sub>ocular</sub> then the conditions are unsafe. (References: Continuous Wave Output Laser - AS/NZS2211.1, Table 7; Pulsed Output Laser - AS/NZS 2211 Supplement 1, Flowchart 3.	
MPE <sub>skin</sub> : if E or H > MPE <sub>ocular</sub> then the conditions are unsafe. (References: Continuous Wave Output Laser - AS/NZS2211.1, Table 8; Pulsed Output Laser - AS/NZS 2211 Supplement 1, Flowchart 3.	
NOHD (To be calculated for open air lasers) (References: AS/NZS 2211.1 Appendix A5; Continuous Wave Output Laser - AS/NZS 2211.1 Supplement 1, Flowchart 1; Pulsed Output Laser - AS/NZS 2211.1 Supplement 1, Flowchart 2.	
Diffuse Reflection (References: AS/NZS 2211.1 Appendix A3; AS/NZS 2211.1 Supplement 1, Flowchart 4.)	
Eye Protection Optical Density (D <sub>L</sub> ) (References: AS/NZS 2211.1 Section 12; AS/NZS 2211.1 Supplement 1, Section 8.4)	
Definitions: <ul style="list-style-type: none"> <li>• MPE: Maximum Permissible Exposure. Maximum laser radiation levels to which the eye or skin can be exposed without consequential injury immediately or after a long time.</li> <li>• NOHD: Nominal Ocular Hazard Area. The area within which the beam irradiance or radiant exposure exceeds the MPE<sub>ocular</sub>.</li> <li>• Refer to AS/NZS2211.1 for a full list of definitions.</li> </ul>	

- d) Describe below the controls proposed to prevent exposure to damaging laser radiation. Refer to AS/NZS2211.1, Section 12.

Control	Description
Prevent continuous direct beam viewing	
Beam stops installed	
Beam path not located at eye level	
Staff excluded from beam paths where E or H > MPE*	
Specular reflection is controlled*	
Eye protection is available*	
Laser Warning signs posted on entrances*	
Beam paths enclosed*	
Interlocks*	
Remote control operation*	
Screens in place*	
Alignment checked*	
Key control*	
Other	
*Only for Class 3B and 4 lasers	



## Appendix E

### WHS Approval - Hazard Identification and Risk Assessment Form

	Scenario	Mitigations	Consequence Type	Consequence	Consequence Score	Likelihood Score	Risk	Acceptability
See the LFLS safety assessment report No. ANSTO/T/TN/2 013-10 Rev 0								

*(Note: Rows can be added to this table as necessary)*