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Radiation Plans and Arrangements in CSIRO

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HSE Leader



Content

- CSIRO licence overview
- Plans and arrangements
- Summary



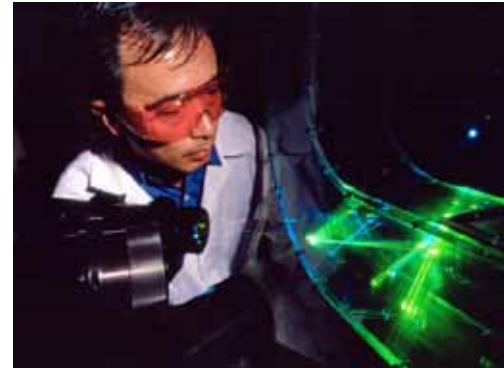
Examples of Irradiating Apparatus and Radioactive Materials in CSIRO



Sealed sources,
eg Cesium-137



Radiochemicals,
eg Thorium
chloride



Non-ionising
apparatus, eg
Class 3B and 4
Lasers



Ionising apparatus,
eg XRD



Non-ionising
apparatus, eg
UV lamp

Types of ARPANSA Licences in CSIRO

13 x Source Licences

eg sealed and unsealed sources,
irradiating apparatus

2 x Facility Licences

eg Neutron generator



Divisional vs. Single Licence

- Clear line of accountability through the Division
- Compatible with project structure
- Dedicated RSOs at each site/Division
- Manageable source inventory workbook
- Continuity of knowledge

Current and Emerging Issues

- Mergers of Divisions (and licences)
- Reg 51 tracking increased
- Managing legacy sources
- Annual review of plans and arrangements

New Licence Categories



Starbug

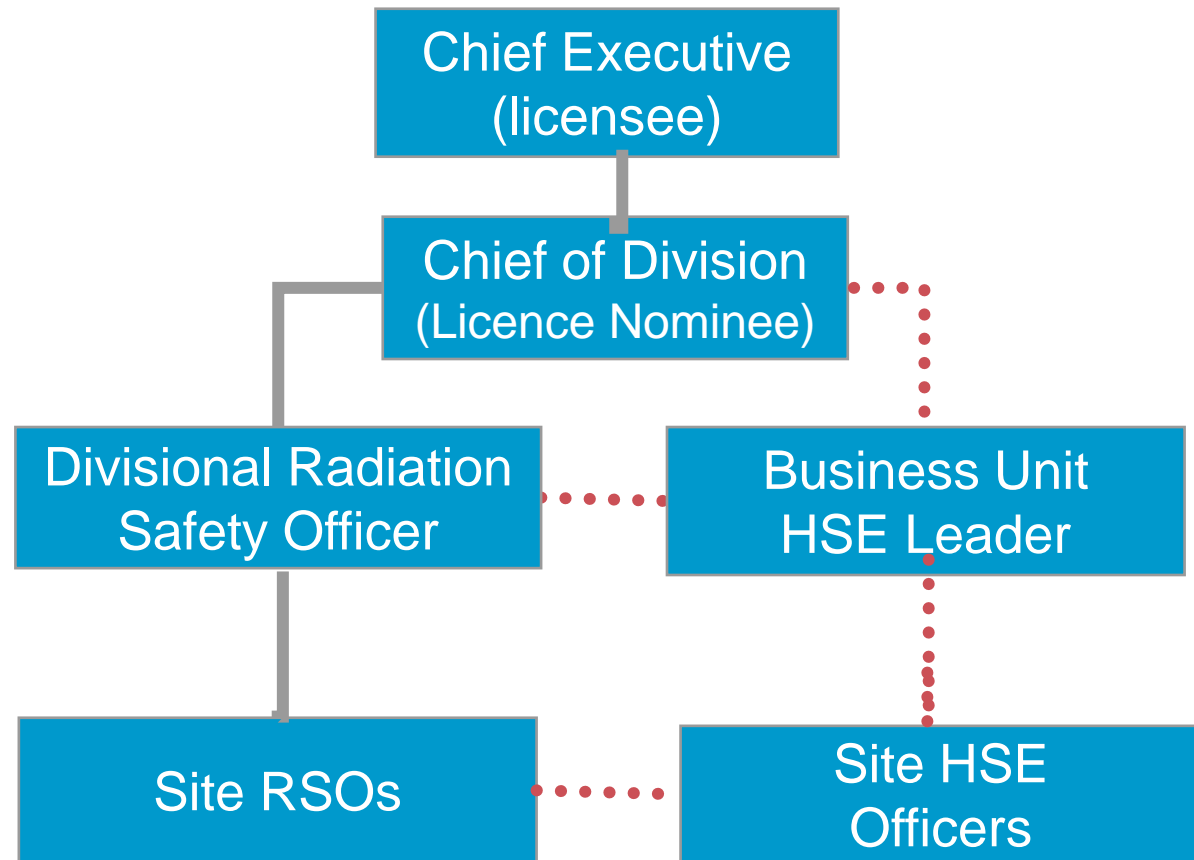


DEXA

Content of Plans and Arrangements

Section	Content
Definitions	Abbreviations and terms used
1. Dealing authorised by licence	Description of irradiating apparatus and radioactive materials covered by the licence and how they are used
2. Maintaining effective control	General description of how radiation is managed by the licensee, eg org structure, budget, personnel, committees, procurement, record keeping etc.

Radiation Function



... Intense communication / working relationship

Purchase of Irradiating Apparatus

- Sufficient space for the item
- Equipment is wired to Australian standards
- Instructions are in English
- Licensing requirements (eg Class 3B or 4 Laser, XRD, UV cabinet etc)
- Special emergency requirements
- Training needs



Purchase of Sealed and Unsealed Sources

- Endorsement by Radiation Safety Officer
- Approval by the Chief (licence nominee)



Content of Plans and Arrangements ctd.

Section	Content
3. Radiation Safety Officers	Names, qualifications, experience
4. HSE Management	Policies and procedures Radiation protection Waste management Plans for transfer or disposal
5. Transport	Source transport security requirements for security enhanced sources

CSIRO Radiation Safety Procedure

Procedure: Radiation Safety

Contents

1. Intent
2. Application
3. Definitions
4. General requirements for radiation safety
5. Action required
 - 5.1 Chief Executive's responsibilities
 - 5.2 Senior Manager's responsibilities
 - 5.3 Manager's responsibilities
 - 5.4 Staff member and CSIRO affiliate's responsibilities
 - 5.5 Staff member's undertaking "dealings with ARPANSA"
 - 5.6 HSE Staff responsibilities
6. Related documents
7. Approval framework
8. Further information
9. Appendices
 - Appendix 1: CSIRO Radiation Safety Manual
 - Appendix 2: Radiation Risk Control Plan

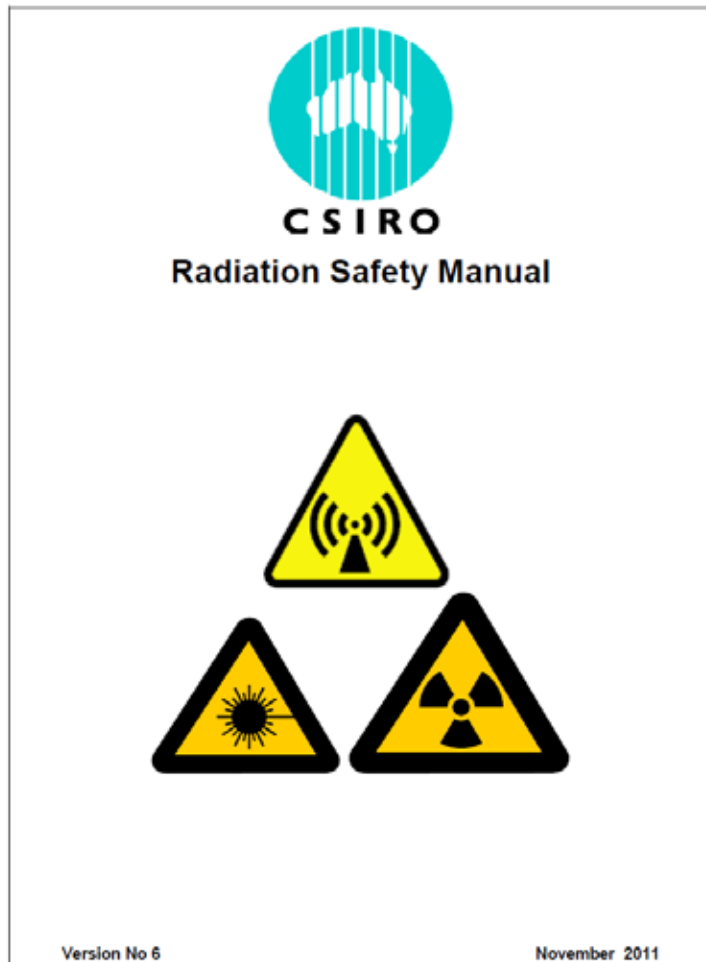
Document Management and Reference Information

Reference (PROC21) - Version 5.1 CSIRO Enterprise Document - Internal Use Only page 1 of 116

This document is a controlled document. The controlled document is maintained electronically by CSIRO Governance Office and is available at <http://document.csiro.au/documentpolicy/policy.htm>. Any printed copy of this document is an uncontrolled copy.

- HSE Risk Management Plan will record information on radiation
- Risks controlled using the hierarchy of controls
- Radiation risk controls include time, distance and shielding
- Radiation Risk Control Plan
- Instruction and training
- Safe work instructions
- TLD badges
- UV and laser safety glasses

CSIRO Radiation Safety Manual



- Radiation protection principles
- RSOs and committees
- HSE risk management
- Procurement
- Storage and transport
- Environmental monitoring
- Health surveillance
- Calibration of monitoring equipment
- Training
- Record keeping

Content of Plans and Arrangements ctd.

Section	Content
6. Security (access, keys, multiple layers of defence, etc.)	Radioactive materials store Designated radiation areas
7. Emergency Plan	Emergency equipment Fires and explosions Spills Immediate control procedures for accidental radiation
8. Incident Reporting	Definitions of radiological incidents Notification protocols and timeframes

Content of Plans and Arrangements ctd.

Section	Content
9. Risk Management	Control of Sources Risk Management Training Radiation Monitoring – personal and area Maintenance Work Signage and labelling
Appendices	List of resources Key contacts Protocols for notifying breaches

Radiation Risk Control Plan



HSE Radiation Risk Control Plan

Program/Group/Team		Site/Location	
Business Unit		Assessment Date	



Part A – New Radiation Sources (complete this section for work with new radiation sources only)[†]

New Radiation Source Information		Comments
Describe proposed use:		
Is the use of the radiation source(s) the only method available to complete the work? If "No", comment on why alternative methods are not suitable.	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Type of new source	Ionising <input type="checkbox"/>	
	Non-ionising <input type="checkbox"/>	
Has the work been discussed with the Radiation Safety Officer?	Yes <input type="checkbox"/> No <input type="checkbox"/> *	
Is the proposed use of the source covered under your BU radiation licence? (if "No", contact the Radiation Safety Officer as a licence amendment must be submitted to ARPANSA before the source is acquired)	Yes <input type="checkbox"/> No <input type="checkbox"/> *	
Does the source have adequate controls in place	Yes <input type="checkbox"/> No <input type="checkbox"/> *	
Are staff trained in the use of the source and its safety controls	Yes <input type="checkbox"/> No <input type="checkbox"/> *	

[†]: attach additional pages as required

*: if "No" was ticked for any of these answers, work must not progress until approval has been given by the Business Unit radiation safety officer

Safe Work Instructions (Standard Operating Procedure)

 Safe Work Instruction 			
TITLE	Name of SWI		
ISSUED BY	Business Unit and group/team name		
APPLICATION	Who it applies to, or what (equipment) or where (location) SWI applies to		
AUTHORISATION	Eg: only authorised/skilled/trained staff, or only staff in XX area / project		
HAZARDS	list key hazards arising from task		
PERSONAL PROTECTIVE EQUIPMENT (PPE)	list all PPE required		
DEFINITIONS			
Insert definitions if required			
INSTRUCTIONS			
1. Insert brief summary of task in dot points. Start from beginning of process and go logically to end of process. 2. point 2 3. point 3 4. point 4 In case of an emergency situation (eg: list likely scenarios), do the following: 1. Insert brief summary of emergency responses in likely order 2. point 2 3. point 3			
FURTHER INFORMATION			
Eg References Insert references to CSIRO HSE procedures or Business Unit SOIs etc as required.			
APPENDICES			
Attach documents as necessary			
APPROVALS			
Version 1	Title	Name	Date
Cleared by:			
Reviewed by:			

Local mandatory instructions to deal with the risks identified in a HSE Risk Management Plan relating to a local process or steps in conducting a task, eg *operating a UV lamp*

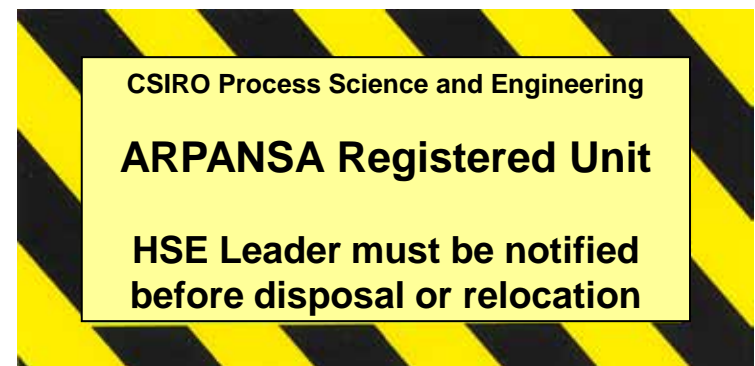
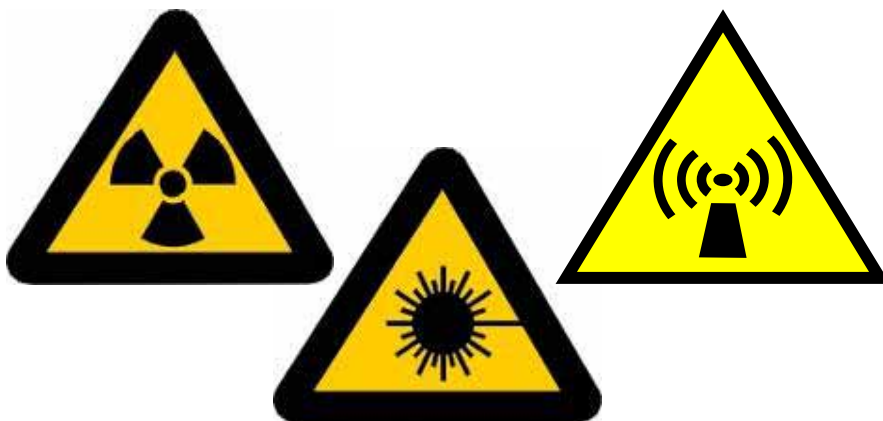
Training

- Sealed and unsealed sources
- X-ray safety
- Laser
- Specialised equipment
- RSO



Labelling and Signage

- Irradiating apparatus must be sign-posted accordingly
- Sealed and unsealed sources may be difficult to label individually – label the container instead
- Labs where irradiating apparatus and radioactive materials are used must be labelled





HAZARDS in this Lab



X-RAYS

Precautionary Measures Required



IN SAMPLE
PREPARATION AREA

Bld 125 G55	Name	Out of Hours Phone Number
Laboratory Custodian	Joe Bloggs	0455 555 555
Other	John Citizen	0422 222 222

Striving For Zero Harm

Human Resources

Science Strategy and Investment

National Research Flagships

Performance and Evaluation

Science Leadership and Outreach

Human Resources

Health Safety and Environment

- [HSE services in CSIRO](#)
- [New Work Health and Safety Laws](#)
- [HSE Incident & Hazard Reporting in SAP](#)
- [Plant Safety](#)
- [Staff International Travel System - SITS](#)
- [HSE Contacts](#)
- [Serious HSE Incident Alerts](#)
- [HSE Procedures and Guidelines](#)
- [Strategic plans and reports](#)
- [Forms and Resources](#)
- [Radiation Safety](#)
- [Hazardous Substances and Gas Safety](#)
- [Contractor HSE Management](#)
- [Health and Wellbeing](#)
- [Employee Assistance Program](#)
- [Environment](#)

Health Safety and Environment



Continuously improving the safety of the working environment to prevent injuries and illness, whilst caring for the natural and built environment.

What's New

Site Emergency Management Plans - [SharePoint site](#)

HSE Policy Framework - Procedures and Guidelines

- [New and revised HSE procedures and guidelines now available](#)
- [Simplification of HSE Procedures Learning Module for CSIRO Staff \[PPS 1.56MB\]](#)
- [Update on the simplification of HSE Procedures and Guidelines](#)
- [A Guide to HSE Procedure General Requirements \[PDF 416KB\]](#)
- [A Guide to HSE Procedure Actions Required \(Responsibility Statements\) \[PDF 780KB\]](#)
- [Specific Operating Instruction template \[Word 80KB\]](#)
- [Safe Work Instruction template \[Word 73KB\]](#)
- [Aviation Safety Procedure \[PDF 211 KB\]](#) - NEW
- [Safe International Travel and Work Overseas Procedure \[PDF 161 KB\]](#) - NEW
- [Emergency Management Procedure \[PDF 508 KB\]](#) - NEW

Read the latest

NEW

Related pages

- [HSE Risk Management Procedure](#)
- [Chemgold III](#)
- [Serious Incident Notification and Alert Protocol](#)
- [WorkPlace](#)
- [Health and Safety Management Arrangements](#)
- [HSE Sharepoint](#)
- [Safety Contacts](#)
- [HSE Review Program](#)
- [Australian Standards online](#) [external link]
- [EnviroLaw & Safety/Law Legal Obligations Directories](#) [external link]

Tools

- [SITS](#)

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About this page

- [HSE services in CSIRO](#)
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Radiation Safety

This page contains all the radiation safety related information.

Key radiation safety documents

- [Radiation Safety Procedure](#)
- [Radiation Safety Manual \[Word 1.06MB\]](#)

Specific Operating Instructions

- [ARPANSA requirements for Business Unit mergers](#)

HSE SharePoint Site

- [HSE SharePoint site](#)

Other HSE procedures/guidelines related to Radiation Safety

- [Wipe Test Procedure for Neutron Moisture Meters and Soil Moisture Density Gauges \[PDF 99.5KB\]](#)
- [Fume Cupboards Procedure](#) (see Appendix 4 - RSO to monitor for radiochemical contamination)
- Incident and Hazard Management [Procedure](#) and [Guidelines](#)
- HSE Risk Management [Procedure](#) and [Guidelines](#)
- HSE in Procurement [Procedure](#) and [Guidelines](#)
- Occupational Health and Hygiene Management [Procedure](#) and [Guidelines](#)

Presentations

November 2010 Radiation Safety Day Presentations

Topic	Presenter
The safe use & transport of portable neutron moisture metres [PDF 1.9MB]	Alex Kalaiziovski
Common Compliance Issues 2009 2010 [PDF 3.3MB]	Claire Lynga
New Licence applications and Regulation 51 submissions [PDF 940KB]	Jim Scott
Incident Reporting [PDF 356KB]	Kaylene Pickering
Radiation Safety Management Operations [PDF 467KB]	Kaylene Pickering
Radiation Safety Service Delivery [PDF 299KB]	Kaylene Pickering
Radiation Safety Procedures [PDF 475KB]	Colin Macdonald

Related pages

- [Radiation Safety Procedure](#)
- [Protocol for Notification of ARPANSA Breaches within CSIRO](#)

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Report a problem

Problem:

Select one

Details:

Next Steps

- Formalise organisational committee of RSOs
- Appoint a full-time radiation subject matter specialist
- Make appointments of RSO consistent across CSIRO
- Move to competency-based assessment for RSOs
- Implement an audit and assurance program

Summary

In Review

- Review plans and arrangements annually – report to ARPANSA
- Ensure risk controls are effective
- Communication and training are essential
- ARPANSA REGULATORY GUIDE : Plans & Arrangements for Managing Safety (V3, Oct 2011)

CSIRO Process Science and Engineering
Future Manufacturing Flagship / Minerals Down Under Flagship

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Thankyou

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