Australian Government

Comcare

ENFORCEABLE UNDERTAKING

PART 11

Work Health and Safety Act 2011 (Cth)

1 March 2021

The commitments in this enforceable undertaking are offered to Comcare

By

The Commonwealth Science and Industrial Research Organisation

ABN: 41 687 119 230

PRIVACY STATEMENT

Your privacy is important to us. We will only collect, use or disclose personal information in accordance with the *Privacy Act 1988* (Cth) and if it is reasonably necessary for, or directly related to, one or more of our functions, powers and/or activities. These include functions and activities under the *Safety, Rehabilitation and Compensation Act 1988* (Cth), the WHS Act, the *Seafarer's Rehabilitation and Compensation Act 1992* (Cth), and the *Asbestos-related Claims (Management of Commonwealth Liabilities) Act 2005* (Cth). If Comcare does not collect personal information from you, for the purposes of its legislated functions or related functions, we may not be able to respond appropriately.

Comcare is the Commonwealth agency authorised by the WHS Act to collect personal information relevant to the exercise of functions and powers under the WHS Act, *Work Health and Safety Regulations 2011* and the administration and evaluation of Comcare's WHS programs. Any personal information collected in these forms will be used for those purposes.

In exercising our functions and powers, we may disclose personal information, subject to confidentiality of information provisions under the WHS Act, to the following bodies and agencies, including but not limited to:

- Comcare's internal and external legal advisers
- the Safety, Rehabilitation and Compensation Commission
- a court or tribunal
- state or territory work health and safety regulatory agencies
- personnel engaged by Comcare to conduct research related activities
- enforcement agencies or bodies
- state and territory Coroners
- Commonwealth, state or territory industry regulators
- any other person assisting Comcare in the performance of its functions or exercise of its powers, including contractors and consultants
- any other person where there is an obligation under law to do so (for example but not limited to, responding to the direction of a court to produce documentation).

For further information on how Comcare handles personal information, please read our Privacy Policy on our website. To request a change to your personal information or to make a complaint, please phone or email us at **privacy@comcare.gov.au**.

ENFORCEABLE UNDERTAKING

Purpose

The purpose of this enforceable undertaking is to document the undertakings offered to Comcare pursuant to Part 11 of the *Work Health and Safety Act 2011* (Cth) (**WHS Act**) in connection with matters relating to alleged contraventions of the WHS Act or the *Work Health and Safety Regulations 2011* (Cth) (**WHS Regulations**).

SECTION 1: GENERAL INFORMATION

1.1. Details of the person proposing the undertaking

Commonwealth Scientific and Industrial Research Organisation (CSIRO) ABN 41 687 119 230 is:

Registered address – Head Office:	CSIRO Head Office Building 101, 2-40 Clunies Ross Street Black Mountain 2601 Australian Capital Territory
Postal address:	CSIRO Head Office GPO Box 1700 Canberra ACT 2601 Australia
Telephone contact:	1300 363 400
Email address:	enquiries@csiro.au
Status under the WHS Act:	Premium Paying Agency
Legal structure:	Corporate Commonwealth Entity under the *Public Governance, Performance and Accountability Act 2013* (Cth)
Type of business:	Corporate Commonwealth Entity
Commencement date of the entity:	25 March 1949
Number of workers (full-time; part-time; casual):	As at 30 June 2020 Head count: 5319 FTE 4181.67
Products and/or services:	Science and research activities
Comments:	Not Applicable

1.2. Details of the alleged contravention(s)

An incident occurred at CSIRO's Clayton site on 6 June 2017. As a result of Comcare's investigation into the incident, it is alleged that between 10 March 2017 and 6 June 2017, CSIRO failed to discharge its obligations as a person conducting a business or undertaking under sections 19(1), 19(3) and 32 of the WHS Act in that it did not ensure, so far as was reasonably practicable, that workers engaged by it were not exposed to a risk of death or serious injury in relation to the use of a pressurised autoclave at its premises in Clayton, Victoria.

Comcare alleged contraventions specifically relating to the work environment in which the activities were undertaken, systems of work and risk management planning associated with the activities, and the provision of information, instructions and training to enable the work to be undertaken safely and without risks to the health of workers.

1.3. Details of the events surrounding the alleged contravention e.g. incident details

Between 10 March 2017 and 6 June 2017, a worker engaged by CSIRO was undertaking activities involving the use of hydrogen in a pressurised autoclave. An incident occurred on 6 June 2017 when gas escaping from the autoclave was ignited, causing an explosion.

1.4. Acknowledgement that Comcare alleged a contravention has occurred

It is acknowledged that Comcare has alleged that CSIRO has contravened sections 19(1), 19(3) and 32 of the WHS Act.

1.5. Details of any injury that arose from the alleged contravention

The worker suffered minor burns and abrasions to his face, a laceration to the forearm which required 15 sutures and bone bruising to his left knee. The worker was hospitalised overnight.

1.6. The details of any enforcement notices issued that relate to the alleged contravention

Were enforcement notices received?

No ☐

or

Yes ☒

Please provide details in the table below.

Date issued:	22 June 2017
Notice type:	Prohibition Notice issued under s 195 of the WHS Act.
Notice number:	0000526-NT04
Contravention or Prohibited Activity:	Stop activity of using pressure vessels (autoclaves) pressurized with hydrogen gas.
Action taken in response to notice:	On the day of the incident, CSIRO issued a direction to stop all work involving hydrogen in pressurised vessels (not limited to autoclaves). Following receipt of the prohibition notice, CSIRO issued a reminder to staff of the direction, and referenced the prohibition notice.

Additional notices issued? NO

When an alleged contravention is associated with an injury/illness

1.7. Details of the workers' compensation or other benefits provided

CSIRO has provided the following workers' compensation to the injured person/s:

Date	Description of compensation
[redacted]	

More than one person injured? NO

1.8. Details of the support provided or proposed to the injured person

Does the alleged contravention involve injury to a person?

No ☐

or

Yes ☒

The injured person is:

An employee of the entity:	YES
A self-employed person:	
Other (please specify):	
Not applicable:	

CSIRO has provided the following support to the injured person/s or next of kin or guardian (as relevant):

Date	Description of support	Comments
[redacted]		

Date	Description of support	Comments
[redacted]		

1.9. If the matter involves a death or very serious injury, or where the applicant has relevant prior convictions under the WHS Act, a claim to demonstrate that exceptional circumstances exist that the WHS undertaking is a more appropriate response than pursuing prosecution

Does the contravention involve a death or very serious injury?

☒ **No** ☐ **Yes**

Does the applicant have relevant prior convictions under the WHS Act within the preceding 5 years of the alleged contravention/incident:

☒ **No** ☐ **Yes**

1.10. Details of any existing work health and safety management system (WHSMS) at the workplace including the level of auditing currently undertaken

CSIRO complies with the principles of *AS/NZS ISO 45001: 2018 Occupational Health and Safety Management Systems – Requirements with guidance for use,* however CSIRO's WHSMS has not yet been accredited.

1.11. Consultation within the workplace

As a result of the alleged contravention CSIRO has consulted within the workplace regarding the proposal of a WHS undertaking in the following manner:

- Early 2020, the injured worker was provided written drafts of the proposed undertakings, a verbal briefing to explain the desired outcomes and an opportunity to make suggestions for improvements.
- From February 2020 and ongoing, staff who would be involved in the delivery of the proposed undertakings were consulted in the feasibility and scope of the proposals via a series of face-to-face meetings

including in HSE, Data61, IM&T, Organisational Development, CBIS and Finance.

- February 2020, members of CSIRO's Executive Team were provided with a written copy of the proposed undertakings and a face-to-face presentation. A similar briefing was provided to the CSIRO Board People Health and Safety Committee Members in April 2020.

- June 2020 - CSIRO's National Health and Safety Committee, which is comprised of Health & Safety Representatives (including one from the site of the incident), CSIRO Directors and the Staff Association, was provided with a written copy of the proposed undertakings and a face-to-face presentation. Committee members were offered the opportunity to provide feedback on the proposals. A similar briefing was provided to CSIRO Health & Safety Leadership and Management Teams in June 2020.

1.12. A statement of regret that the incident occurred

CSIRO deeply regrets that the incident on 6 June 2017 occurred and the worker sustained injuries as a result of the incident.

1.13. Details of the rectifications to the workplace or work practices made as a result of the alleged contravention

As a result of the alleged contravention CSIRO has made the following rectifications within the workplace:

Immediate local rectifications:

- Immediate stop work issued for all activities involving the use of flammable and explosive liquids and gases under pressure, until all risk management documentation had been reviewed, including an assessment of infrastructure and facilities.
- Reviewed and upgraded all risk management documentation for work involving autoclaves.

Organisational rectifications:

- Implementation of a new Risk Management Procedure for HSE, including new requirements for:

  i. Activity-based risk assessments;
  ii. Safe Work Instructions;
  iii. Director level approval of severe to very high-risk activities;
  iv. Situational risk assessments (including Take 5);

- Completed an organisational wide reticulated gas safety audit (RGSA) across 30 sites and remediated 2419 issues.
- Implementation of new registration requirements for all pressure vessels in CSIRO Pressure Equipment Register (CPER), including verification of fit for purpose facilities and infrastructure, including intrinsic safety.

- Updated guidance material for pressure vessels and the provision of training to all relevant staff.
- Reviewed all projects using flammable and explosive gas and liquids in pressure vessels.
- Engaged PricewaterhouseCoopers to conduct an independent functional and capability review of CSIRO's Health, Safety and Environment Function.

Total amount spent on rectifications within the workplace, as outlined above:

$ 1,370,683.94 noting this figure does not include internal resourcing, including staff allocation which is estimated to be at least $500,000.

1.14. Statement of assurance about future work health and safety behaviour

CSIRO is committed to complying with its obligations under the WHS Act and ensuring, so far as reasonably practicable the health and safety of all workers and other persons who may be affected by its business or undertakings.

1.15. Statement of commitment that the behaviour that led to the alleged contravention has ceased and will not reoccur

CSIRO commits that the behaviour that lead to the alleged contravention has ceased and that it will take all reasonably practicable steps to prevent recurrence of this type of incident.

1.16. Statement of commitment to the ongoing effective management of work health and safety risks

CSIRO commits that it will exercise its best endeavours to the ongoing effective management of work health and safety risks.

1.17. Statement of ability to comply with the terms of the WHS undertaking and meet the projected costs of the activities

CSIRO acknowledges that it has the financial ability to comply with the terms of the enforceable undertaking and has provided evidence with this proposal to support this declaration.

1.18. Details of any prior work health and safety convictions

Comcare requests a list outlining details of any prior work health and safety convictions or findings of guilt under work health and safety legislation[2] or work health and safety related legislation.

No ☒ CSIRO has had no prior work health and safety convictions.

or

Yes ☐ The list is attached as an annexure.

Subject to any local legal constraints such as spent conviction legislation.

1.19. Statement of assurance relationships with beneficiaries (of donations or scholarship or financial benefit contained in this undertaking)

CSIRO acknowledges there are no known current relationships with any of the beneficiaries outlined in the enforceable undertaking, other than the current workers of CSIRO and the injured worker.

1.20. Statement regarding Intellectual Property Licence

CSIRO grants Comcare a permanent, irrevocable, royalty- free, worldwide, non-exclusive, non-transferable licence to use, reproduce, distribute, electronically transmit, electronically distribute, adapt and modify any materials developed as a result of this enforceable undertaking, save for all materials developed as a result of performing the undertaking entitled "VIRTUAL AND AUGMENTED REALITY RISK MANAGEMENT TRAINING PACKAGE", in respect of which CSIRO retains and reserves all intellectual property rights (and does not grant or confer any right, title or interest in respect of such intellectual property rights).

1.21. Acknowledgement of WHS undertakings guidelines

CSIRO has read and understood Comcare's enforceable undertaking guidelines for proposing a WHS undertaking.

SECTION 2: ENFORCEABLE TERMS

1.23. Acknowledgement that the WHS undertaking will be published and publicised

CSIRO acknowledges that the enforceable undertaking will be published on Comcare's internet site and may be referenced in Comcare's publications.

CSIRO will, within thirty (30) days of the date of acceptance of this enforceable undertaking, cause a public notice to be published in 'The Australian', which will be drafted using the script provided in *Annexure 1*.

1.24. A commitment regarding linking the strategy and promotion of benefits to the WHS undertaking

CSIRO is committed to ensuring that any promotion of a benefit arising from this enforceable undertaking will clearly link the benefit to the undertaking and that the undertaking was entered into as a result of the alleged contravention.

1.25. A commitment to disseminate information about the undertaking to workers, and other relevant parties (which may include work health and safety representatives), and in the annual report (if applicable)

CSIRO agrees to disseminate information about the enforceable undertaking within the workplace, including to the members of any health and safety committee, health and safety representatives and all subcontractors working for CSIRO. This information will be disseminated through CSIRO's internal communication channels, including by publication on CSIRO's Intranet, an internal news bulletin and an all-staff email and will be completed within one month from the date of acceptance of the enforceable undertaking.

CSIRO commits that it will publish details of the enforceable undertaking in the first annual report due after the date the undertaking is accepted. CSIRO's annual report is published by October each year.

1.26. A commitment to participate constructively in all compliance monitoring activities of the undertaking

CSIRO acknowledges that the responsibility for demonstrating compliance with this undertaking rests with the person who has given this undertaking. Evidence to demonstrate compliance with the terms will be provided to Comcare by the due date for the term.

CSIRO acknowledges that Comcare may undertake other compliance monitoring activities to verify the evidence that is provided and compliance with the relevant term. The evidence provided to demonstrate compliance with the undertaking will be retained by the person who has given this undertaking until advised by Comcare that the undertaking has been completely discharged.

CSIRO acknowledges that Comcare may initiate additional compliance monitoring activities, such as verification inspections, as considered necessary at Comcare's expense.

1.27. Undertakings that will deliver benefits for workplace, industry and community

- **Undertakings that will deliver workplace, industry and community benefits**

(1) VIRTUAL AND AUGMENTED REALITY RISK MANAGEMENT TRAINING PACKAGE

Scope:
CSIRO will develop a risk management training package to equip participants with best practice knowledge tools to identify and control risks in laboratories. This training package will use augmented and virtual reality (AR/VR) techniques to immerse participants in hazardous scenarios common to research and development institutions across Australia.

Target issue:
The innovative nature of research, and the dynamic requirements of laboratories where research is conducted, presents significant challenges for anyone attempting to comprehensively review both the incidental risks presented by the substances or equipment being used and the specific risks of the novel experiment they are conducting.

CSIRO conducts an extremely diverse range of scientific research activities, from developing sustainable metal production systems to ocean diving operations, and from analysing pathogens to planting crops. The commonality between CSIRO's scientific research activities is that they all present unique health and safety risks. Early identification of all possible risks to health and safety is critical to implementing the appropriate risk control measures.

For example, experimental design may require a wide variety of hazardous materials to be used which are only incidental to the scientific hypothesis being tested. One example of this is the use of toxic chemicals in a biological assay to the determine the presence of mutant genes from cultivated plants. Equipping participants with the ability to holistically consider risks in and outside their specific discipline while also providing clear trigger points to seek expert assistance in managing technical risks is critical to ensuring research can progress expediently and safely.

Tangible outputs / deliverables:
CSIRO will develop a risk management training package using AR/VR technology designed to equip participants with best practice knowledge tools to identify and control risks.

This training package will provide participants with information to enable them to have a practical understanding of the expected control measures and the consequences of emergency events that can result from the specific hazards when the control measures are not implemented. The training will feature different scenarios, which will focus on potential real-life incidents such as:

- An explosion of a pressure vessel using flammable gas to catalyse a reaction.
- An exposure of workers to a toxic gas by-product from an upscaled chemical reaction.
- A release of liquid nitrogen in a confined space presenting an asphyxiation risk.

Participants will be able to experience augmented/immersive scenarios in one of their own (physical) scientific research environments and/or a generic virtual laboratory (modelled after laboratories within CSIRO). The scenarios will require participants to consider:

- Experimental design
- Plant and equipment
- Facilities design

The training package will also include a theoretical component to ensure it has applicability across other situations. This theoretical component will outline risk management process set out under the *Work Health and Safety Regulations 2011* (Cth), such as the requirement to identify hazards and control risks in accordance with the hierarchy of controls, and will also draw from principles underlying commonly used techniques to conduct risk assessments, as drawn from *AS/NZ IEC 31010:2020 Risk management — Risk assessment techniques*.

Audience / beneficiaries:
The training package will be applicable for anyone working in wet laboratories, both within CSIRO and across Australia. Within CSIRO, this is estimated to be at least 2000 people.

Delivery method:
As noted above, the training package will be delivered using AR and VR techniques. CSIRO will designate laboratory areas on its largest two sites where participants can undertake the risk management training with 3D virtual elements being added within the physical environments. A VR version of the training package will be available for remote participants to use on either a suitable smartphone, computer or stand-alone VR headset.

CSIRO will make the training package available to external participants in other organisations via a website. This will be free to use for a period of three years.

CSIRO will promote the training to industry stakeholders including industry safety bodies.

Timeframes:
CSIRO will commence the development of the training package within one month of acceptance of the enforceable undertaking. The training package is intended to be completed within 18 months, including nine months of initial development, a trial over three months, and access for other organisations within the subsequent six months.

The intended timeframe for the development and provision of the training is:

Timeframe	Milestone(s)
Month 1	• Project set up and reporting lines established. • Commenced external outreach to identify stakeholders and champions.

	• Initial scenario scoping completed between Immersive Environments team, health and safety staff and educational advisors. • Test lab areas booked and cleared-for-use.

Months 2 – 5	• Content scripts for practical and theoretical components prepared and documented to detail:
	  ○ The specific incidents for each scenario (including experimental setup, equipment/materials required and emergency outcome),
	  ○ The risk management tools and processes to be delivered to participants,
	  ○ The desired learning outcomes and
	  ○ Any associated assessment requirements.
	• Development commenced, including:
	  ○ Initial trial and selection of AR display technology within Lab environment,
	  ○ Development environment up and running (computers, software, etc.) and
	  ○ First set of interactive AR/VR user interface elements prepared using placeholder/indicative content.
	• Technical demonstrations.

Months 5 – 10	• Incorporated content from at least two scenario modules into the AR/VR training system:
	  ○ Identified workflow/process for importing 3D content into training system,
	  ○ Obtained/Created initial set of 3D models and assets,
	  ○ Instantiated narrative linking/advancement between training elements,
	  ○ Enabled the placement of training elements within the physical lab environment and within the entirely virtual lab environment, and
	  ○ Iterative consultation conducted with Health and Safety staff and educational advisors.
	• Demonstrations with initial training content.
	• Commenced planning for system trials with users.

Months 9 – 12	• Established protocols for user trials. • System trialled with initial cohort of internal users in both AR and VR modes. • Feedback solicited from stakeholders and champions.
Months 12 – 15	• Content refined further, as required, and finalised. • Remaining 3D assets created an incorporated. • Prepared communication/promotional material. • System documentation ready for distribution.
Months 15 – 18	• Incorporated at least one additional scenario module. • System documentation updated/finalised. • System made available to other organisations via website. • Publicity/Media Release.

Work health and safety outcome:
This undertaking will address a lack of understanding in identifying hazards and associated risks often present in research laboratories. By virtue of its engaging delivery method (i.e., immersion via AR/VR in dynamic one-to-one scale scenarios), the training package will foster an enhanced understanding of the requirements of the CSIRO's *HSE Risk Management Procedure* while also being generic enough to be applicable to other research and development agencies

(including Government Research & Development agencies, industry partners and Universities).

It will serve to induct participants into intrinsic safety requirements ubiquitous to laboratories across Australia, such as the use of gas detection systems, as well as offer the opportunity to learn from real life events in a safe environment and enhance their ability to conceptualise and review risk management practices.

Cost Breakdown:
Add additional rows as required

Description	**$ Amount**
Staff allocation (total): Including: System development staff (CSIRO Data61) Health and safety advisors (CSIRO HSE) Training and Education staff (CSIRO Organisational Development)	$500,000
Consultancy fees (total): HSE content review, specialist risk management Digital learning consultant Legal review (content)	$225,000 $100,000 $100,000 $25,000
Operational expenditure (laboratory equipment, development equipment and travel costs)	$50,000
Capital expenditure (headsets etc.)	$32,000

Total estimated cost: 807,000

(2) Risk Management within Opportunity to Delivery (O2D) system

Scope:
The CSIRO digital project management (O2D) system is a centralised web-based system used to conceptualise all new research projects, gain approval to proceed and allocate funding and resources. O2D will be upgraded to include a health, safety and environment (HSE) risk management module.

Target issue:
CSIRO, like other research institutes including Universities has not integrated HSE risk management specifically into the project planning and budget and allocation process for project approval. CSIRO's internal processes require that Project Leaders conduct risk assessments for their projects, this requirement has not been integrated within O2D.

This lack of specific HSE risk management at the project's conception stage may impact the ability of Project Leaders and delegates to appropriately identify, consider and manage HSE risks as part of the project management decision making process.

Tangible outputs / deliverables:

O2D will be upgraded to include a specific HSE Risk Management module at the project's inception. The upgrade will provide a structured process for identifying potential hazards and risks that would need to be managed and how they will be managed (at a high level) prior to the project commencing. Projects will not commence without the assessment being undertaken and the delegate's approval.

This risk management module will be used to:

- Provide a broad overview of the risk profile of the project, such as whether the project will require the use of hazardous chemicals and gases, radioactive material, biological agents or high-risk plant and equipment.
- Consider the processes required to manage the risks, and whether the current infrastructure or capability within the organisation is available, to safely undertake the project or plan their implementation, where required.
- Assure managers approving the Project that risks to health, safety or the environment are able to be appropriately managed.

The recording of the information in O2D will confirm completion of the required steps, provide a base of evidence of risk management actions to be referred to during the project, and provide a base of information for analysis and consideration in future projects.

Audience / beneficiaries:
The health and safety of workers will be better assured by a process that formalises specific and detailed consideration of hazards and risks associated with a project, with line manager approval. Noting that CSIRO has over 1200 Project Leaders, this upgrade will contribute to more timely and better management of HSE risk associated with projects.

While the O2D upgrade will be specific to CSIRO, the principles under which it will operate, and the approach taken may be useful to other organisations, including Universities.

Delivery method:

This upgrade to O2D will be developed internally by CSIRO's Information Management and Technology team (noting that O2D is operated on the Microsoft Dynamics platform, and is able to be modified to a particular business's needs), with design input from CSIRO's HSE team.

Once developed, training sessions and material will be made available internally to Project Leaders and incorporated into ongoing user guides for O2D. It will be mandatory for all Project Leaders to identify the HSE risks associated with their project within O2D before being approved to formalise their project (including allocating funding or internal resources or approaching external collaborators). The upgrade's success will be evaluated based on the percentage of projects with completed HSE risk management modules within O2D.

CSIRO will make available information on the O2D upgrade to others within government and the research sector and will promote this approach via our website and social media sites. CSIRO will also provide the information to Comcare, SafeWork Australia and other state-based regulators for dissemination to a broader audience.

Timeframes:
The system changes will be introduced in line with the next CSIRO project planning cycle (July 2021) and work will commence the development within one to two months of acceptance of the enforceable undertaking. The development will take six months, and the delivery method outlined above will be rolled out over three months once development is complete.

The development process will be iterative, but will broadly be completed as follows:

Timeframe	Milestone(s)
1 month	• Confirmation of scope • Appointment of project team.

1 - 2 months	• Conception stage, including:
	  ○ Collecting business insights
	  ○ Defining success measures and the minimal viable product
	• Confirming licensing arrangements

2 - 3 months	• Discovery stage, including: ○ Assessing technical and feasibility requirements • Confirming the solution and security software architecture, and the authentication and authorisation model

3 – 5 months	• Development of content and programming, including:
	  ○ Initial build of minimum viable product
	  ○ Testing automation within O2D
	  ○ Reviewing with users and preparing how-to guidance material
	• Licence management

5 – 7 months	• Go live stage, including:
	  ○ User training and change management
	  ○ Bug fixes
	  ○ User behaviour metrics and analytics
	• Ongoing monitoring

7 – 9 months	• Promotion of upgrade to external stakeholders.

Work health and safety outcome:
This upgrade of O2D to include a dedicated HSE risk management module will allow CSIRO to, on a project-by-project basis, outline a clear process for Project Leaders and assist in explaining their role and accountability for managing HSE risks at the project's inception. It will provide for a structured process for:

- considering hazards and risks by the Project Leader;
- clearly identifying where a project will affect CSIRO's risk profile and planning how that change will be managed; and
- seeking approval to proceed by a person independent of and at least the same level as the Project Leader.

The O2D upgrade addresses the need to ensure that HSE risk management is incorporated at the project design stage in an electronic system, enabling real time verification of compliance.

Cost Breakdown:
Add additional rows as required

Description	$ Amount
Staff allocation in initial year of development (total): System development staff (CSIRO IM&T) Business Analyst/Test Users (CSIRO Business Development & Commercial) Risk and Compliance verification (CSIRO Governance)	$220,000
Staff allocation in second year for ongoing improvements/enhancements	$80,000

Total estimated cost: $300,000

(3) Health and Safety Technical Guidance Material for Infrastructure in High Risk Environments

Scope:
CSIRO will establish guidance material to support the standardisation of infrastructure in environments that are potentially hazardous due to the materials or equipment present.

Target issue:
The innovative nature of research and development laboratories often presents significant challenges in understanding what infrastructure is required to safely manage the risk of the materials or equipment present in a given laboratory. Understanding the technical aspects and scale of any given risk and then synthesising relevant legislation, codes of practice and standards requires significant investment.

During the design and construction phase of new laboratories, there is often disagreement among independent experts as to what control measures are essential, suitable and practical for the work done by multiple research teams sharing a laboratory with varying disciplines and needs. This process may be further confounded when research conducted within an existing laboratory is changed resulting in the need for new infrastructure required to accommodate the change in risk profile.

To illustrate this challenge using what should be the relatively straightforward process of developing storage areas for hazardous chemicals, the Australian Standard *AS2243.10:2004 Safety in Laboratories – Part 10: Storage of chemicals* states the following in its Foreword:

- Some legislation refers to various parts of the AS/NZS 2243 series and AS/NZS 2982.1 as the guidelines for the use and storage of dangerous goods in laboratory environments.
- Readers of this Standard should investigate if legal requirements are applicable to their situation as these will take precedence over the requirements in this Standard.
- In most storage situations, several Standards may need to be considered.
- The relevant Standard for the particular Class of dangerous goods or type of chemical (see list in Appendix A) may be preferable if only non-flammable dangerous goods or only one or two Classes of dangerous goods or types of chemicals are stored, or they are in dominant quantities.

Similarly, the installation of reticulated gas pipework and store areas is subject to at least 14 different Australian Standards. In technical areas, there is not a specific standard that is fit for purpose and currently there is no official guidance material that can be read as a stand-alone best practice guide to new research installations.

Tangible outputs / deliverables:
CSIRO will establish technical guidance to support the standardisation of infrastructure in environments, that are potentially hazardous due to the nature of material or equipment present.

The guidance will support the planning of new facilities or the purchase of new equipment by synthesising the relevant parts of relevant Regulations, Codes of Practice and Standards to clearly define requirements for new installations in research facilities.

The three topics for development as comprehensive guides are:

1. Hazardous chemical (including flammable and combustible material) storage.
2. Compressed gas storage and reticulation.
3. Requirements for electrical installations in areas with flammable materials, such as ventilation, detection and intrinsic electrical safety.

Audience / beneficiaries:
The health and safety of workers will be better ensured through more detailed information being available about the hazards and risks associated with their work and risk control measures. This guidance material will be beneficial for anyone working in laboratories using hazardous materials (such as flammable liquids and gases), as well as property and maintenance teams supporting the researchers.

This guidance will be applicable to any research institutions across Australia. CSIRO will share this guidance material with our university and industry partners. This will provide an improved and more detailed body of information for widespread use, assisting other organisations to understand and control risks associated with their work.

Delivery method:
CSIRO will develop this suite of guidance material in consultation with independent engineering consultants specialising in the management of hazardous materials in a research environment. Each piece of guidance will be evaluated for its comprehensiveness and clarity in addressing any requirements from the relevant governing standards on the subject matter.

The guidance will be implemented within CSIRO via a series of presentations and explanatory sessions specifically targeting roles with responsibility for infrastructure (such as CSIRO's safety, property, and research operations teams), and accessible versions will be published on CSIRO's internal intranet.

CSIRO will make the guidance material publicly available to external parties on its website. It will promote and present the guidance amongst research safety bodies, such as the Australian University Safety Association (AUSA) and the Australian Institute of Health & Safety (AIHS) with distribution of the guides to at least ten stakeholders.

Timeframes:
CSIRO will commence the development of the guidance within one month of acceptance of the enforceable undertaking. The development will take nine months, and the delivery method outlined above will be rolled out over three months once development is complete.

The development process will be iterative, but will broadly be completed as follows:

Timeframe	Milestone(s)
1 month	• Confirmation of scope. • Appointment of project teams including, internal HSE and Business Unit subject matter experts. • Engagement of independent third-party experts.

2 – 4 months	• Subject matter research and initial drafting of guides:
	  ○ Topic 1: Hazardous chemical (including flammable and combustible material) storage.
	  ○ Topic 2: Compressed gas storage and reticulation.

	○ Topic 3: Requirements for electrical installations in areas with flammable materials, such as ventilation, detection and intrinsic electrical safety.
5 – 6 months	• Review of guides by independent third-party experts to confirm that the content represents best practice.
7 – 9 months	• Internal consultation within CSIRO to confirm feasibility. • Scenario based practical testing. • Provision of draft guides to external interested parties for awareness and feedback.
10 – 12 months	• Delivery of final guides to Comcare. • Publication of guides on CSIRO website. • Promotion of guides on social media. • Distribution to at least 10 stakeholders.

Work health and safety outcome:
Centralised criteria for requirements in relation to infrastructure will improve CSIRO's and the Research & Development Industry's processes for designing new or refurbished buildings for research purposes.

The guidance will support the planning of new facilities or the purchase of new equipment by synthesising the relevant parts of relevant Regulations, Codes of Practice and Standards to clearly define requirements for new installations in research laboratories.

This guidance material aims to simplify the process in developing criteria for future installations and remove inconsistencies in interpreting requirements within CSIRO and with external suppliers or collaborators.

Cost Breakdown:
Add additional rows as required

Description	**$ Amount**
Staff allocation (Internal expertise to prepare drafts and oversee scope)	$60,000
Consultancy fees	$60,000

Total estimated cost: $120,000

TOTAL ESTIMATED VALUE OF THE UNDERTAKING $1,227,000

1.28. A commitment to establish and maintain (or maintain if a system already exists) a WHSMS

CSIRO is committed to ensuring their existing WHSMS complies with the principles of *AS/NZS ISO 45001: 2018 Occupational Health and Safety Management Systems – Requirements with guidance for use.*

CSIRO acknowledges that the WHSMS will be maintained in accordance with the standard.

1.29. A commitment to ensure the WHSMS is audited by third-party auditors

CSIRO commits to ensuring the WHSMS will be audited by accredited third-party auditors to meet the requirements of *AS/NZS ISO 45001: 2018 Occupational*

Health and Safety Management Systems – Requirements with guidance for use, in accordance with established timeframes as set out below.

CSIRO acknowledges that the third-party auditors selected to perform WHSMS audits must be certified by a certification body accredited by JAS-ANZ to *ISO/IEC 17024: 2013 Conformity Assessment - General requirements for bodies operating certification of persons*.

CSIRO acknowledges that details of the auditors' qualifications against the stated requirements will be provided with audit reports submitted to Comcare.

CSIRO acknowledges that an initial third-party audit will be undertaken within six months following the date of acceptance of the enforceable undertaking.

1.30. A commitment to provide a copy of each finalised WHSMS audit report to Comcare

CSIRO acknowledges that audit reports received from the auditor will be sent to Comcare, within one month of the audit along with a letter certifying that the report has not been altered from the copy provided to the person by the auditor.

CSIRO acknowledges that within three months of receipt of the auditor's written report, Comcare will be advised of the intended action in addressing each of the report's recommendations.

1.31. A commitment to implement the recommendations from these audits (unless otherwise negotiated with Comcare)

CSIRO commits to fully implementing the intended actions arising from the audit within six months from receiving the audit report from the WHSMS auditor unless otherwise advised.

1.32. Minimum spend

CSIRO commits to spend $1,412,000, as set out below, plus Comcare's reasonable costs, fees or expenses incurred as a result or in respect of the negotiation and monitoring of the proposed undertaking, as agreed between Comcare and CSIRO.

Item:	**Cost:**
Undertakings	$1,227,000
Project Management (external)	$150,000
WHMS Audit	$30,000
Publications/Communication	$5,000

OTHER ENFORCEABLE TERMS

1.33. Term

The deliverables proposed by the undertaking must be met by 1 September 2022.

This undertaking will conclude when Comcare confirms in writing that all terms have been fully met (within the agreed term of the undertaking), and all undertakings are completely discharged.

1.34. Reporting

CSIRO must:

i. provide a formal report to Comcare, on the first working day of each calendar month, on the development and/or implementation of any measures it has committed to develop and/or implement in accordance with this undertaking;

ii. provide all documents and information requested by Comcare from time to time for the purpose of enabling Comcare to monitor compliance with this undertaking;

iii. develop and provide to Comcare, within one calendar month of the formal acceptance of this undertaking, procedures which will ensure that CSIRO, its board and senior management, and any workers or other persons affected by this undertaking (including any affected person/s or their family) are regularly informed on the implementation of measures described in or effected in accordance with this undertaking.

1.35. Costs

CSIRO agrees and undertakes to bear, reimburse, and/or indemnify Comcare for any reasonable costs, fees or expenses incurred by Comcare as a result or in respect of the negotiation and monitoring of the proposed undertaking, as agreed between Comcare and CSIRO.

If the amount of Comcare's recoverable costs in accordance with clause 1.35, above, cannot be agreed within a reasonable period, those costs are to be assessed by an agreed appropriately qualified independent costs assessor. If there is no agreement on the independent costs assessor to be engaged, a costs assessor will be appointed by way of a Presidential appointment facilitated by the President of the Victorian Law Institute (or their nominee).

1.36. Variation

If CSIRO proposes to vary this undertaking, then:

i. CSIRO will submit its request to vary this undertaking in writing to Comcare, giving reasons for the request

ii. upon receipt of the request, Comcare, in its absolute discretion, may decide whether or not to allow a variation to this undertaking

iii. Comcare's written approval of any request to vary this undertaking, including but not limited to a letter or an instrument of variation, constitutes a variation to this undertaking.

1.37. Enforceability

CSIRO acknowledges that this undertaking is enforceable at law and that it may be subject to penalties if it does not comply with this undertaking.

Without limiting the generality of this clause, Comcare may, in its absolute discretion, deem any finding by the auditor that CSIRO has failed to give full effect to any provisions of this undertaking to be a breach of this undertaking.

Without limiting any other power, right, authority, or privilege it may enjoy, Comcare may, in proceedings arising from any breach or anticipated breach of this undertaking, among other things:

i. apply for the imposition of a penalty

ii. apply for an order directing compliance with the undertaking

iii. apply for an order discharging this undertaking and pursue or recommence the proceedings

iv. apply for an order directing CSIRO to pay the costs of the proceedings to the Commonwealth

v. apply for an order directing CSIRO to pay Comcare's reasonable costs in monitoring compliance with this undertaking in the future, to the Commonwealth

vi. apply for any further order it considers appropriate.

vii. if CSIRO fails to comply, or proposes a failure to comply, or withdraws this undertaking then Comcare may apply for an order discharging this undertaking and:

   a. may pursue or recommence the proceedings, and

   b. in any such proceedings CSIRO cannot object to Comcare tendering this undertaking.

Any act or omission by CSIRO which is inconsistent with or in contravention of this undertaking is and may be deemed by Comcare to be a breach of this undertaking.

CSIRO acknowledges that it will bear the costs of the proceedings incurred as at the undertaking date or any other action taken by Comcare in accordance with or pursuant to this clause.

1.38. Acknowledgements

CSIRO acknowledges that:

i. Comcare's acceptance of this undertaking does not affect Comcare's:

a. power to investigate or pursue civil or criminal proceedings in respect of similar or related incidents or injuries; or

b. authorities, powers, and obligations in respect of any conduct of CSIRO which is not the conduct which gave rise to the incident.

ii. This undertaking in no way derogates from the rights and remedies available to any other person or entity other than CSIRO and Comcare arising from any conduct described in this undertaking or arising from future conduct.

iii. This undertaking has no operative force until accepted in writing by Comcare.

SECTION 3: OFFER OF UNDERTAKING

As a duly authorised person of	(insert person)	CSIRO
I offer this undertaking and commit	(insert person)	CSIRO
to the terms herein, to be completed on or before		22 / 09 / 2022

Signed [redacted]

Person OR Duly authorised person

Dr Larry Marshall

Print name

Position: Chief Executive, CSIRO

Dated at: Sydney, NSW

this 23rd day of February , 2021

SECTION 4: COMCARE'S ACCEPTANCE OF UNDERTAKING

The duration of an enforceable undertaking is determined by the content of the agreed terms. An enforceable undertaking commences and is enforceable once accepted by Comcare. The enforceable undertaking will be concluded on written advice from Comcare when all requirements of the undertaking have been satisfactorily executed.

I accept this undertaking as an enforceable undertaking under section 216 of the *Work Health and Safety Act 2011*.

Signed: [redacted]

Person OR Duly authorised person

Vanessa Graham

Print name

Position: Chief Operating Officer

Dated at: Canberra, ACT

this 2nd day of March , 2021

Annexure 1 – Public Notice of Comcare's acceptance of undertaking

Notice of Acceptance of an Enforceable Undertaking under Part 11 of the *Work Health and Safety Act 2011* (Cth) (WHS Act).

On 6 June 2017, a worker engaged by CSIRO was undertaking activities at the CSIRO Clayton site, involving the use of hydrogen in pressurised autoclave. Gas escaped the autoclave and was ignited, causing an explosion. The worker suffered minor injuries from which they fully recovered within two weeks after the incident, with no further treatment required.

CSIRO deeply regrets that the incident on 6 June 2017 occurred and the worker sustained injuries as a result of the incident.

Comcare investigated the incident and subsequently alleged that CSIRO contravened sections 19(1), 19(3) and s 32 of the *Work Health and Safety Act 2011* (Cth).

This notice has been placed under the terms of an enforceable undertaking and acknowledges acceptance by Comcare of an undertaking, that is enforceable under the WHS Act, from CSIRO, ABN 41 687 119 230 as finalisation of the abovementioned alleged contravention.

The undertaking requires the following actions:

- CSIRO will develop and deliver virtual and augmented reality risk management training, which will be available to any interested person, free of charge.
- CSIRO will upgrade its opportunity/project planning system to include an HSE risk management module, ensuring that HSE risks are identified and controlled for at the earliest possible stage.
- CSIRO will establish technical guidance material to support the standardisation of infrastructure in environments that are potentially hazardous due to the materials or equipment present. The technical guides will be available, to any interested person, free of charge.

The full undertaking and general information about enforceable undertakings is available at www.comcare.gov.au.