

## Maintain Pressure Vessel Integrity Risk Assessment

|                   |        |        |
|-------------------|--------|--------|
| Business Name:    | ABN:   |        |
| Business Address: |        |        |
| Contact Person:   | Phone: | Email: |

### THIS RISK ASSESSMENT IS APPROVED BY THE PCBU ON THIS PROJECT

Under the Work Health and Safety Regulation (WHS Regulation), a person conducting a business or undertaking (PCBU) is required to ensure that a RISK ASSESSMENT is prepared before the proposed work starts.

|            |        |       |
|------------|--------|-------|
| Full Name: |        |       |
| Signature: | Title: | Date: |

### CLIENT OR PRINCIPAL CONTRACTOR DETAILS

|   |                |
|---|----------------|
| Client:   | SCOPE OF WORKS |
| Project Name:                                     |                |
| Project Address:                                  |                |
| Project Manager:                                  |                |
| Contact Phone:                                    |                |
| Date Risk Assessment supplied to Project Manager: |                |

| RISK MATRIX  |   |               |                    |            |  |                |                                   |  |  |
|--|---|---------------|--------------------|------------|--|----------------|-----------------------------------|--|--|
| LIKELIHOOD   | INSIGNIFICANT                               | MINOR         | MODERATE           | MAJOR      | CATASTROPHIC   | SCORE          | ACTION                            | HIERARCHY OF CONTROLS  |  |
| ALMOST CERTAIN   | 3<br>HIGH                                   | 3<br>HIGH     | 4<br>ACUTE         | 4<br>ACUTE | 4<br>ACUTE   |                |                                   | <b>Elimination</b><br>Remove the hazard.   |  |
| LIKELY   | 2<br>MODERATE                               | 3<br>HIGH     | 3<br>HIGH          | 4<br>ACUTE | 4<br>ACUTE   | 4A<br>ACUTE    | DO NOT PROCEED                    | <b>Substitution</b><br>Replace the hazard.   |  |
| POSSIBLE   | 1<br>LOW                                    | 2<br>MODERATE | 3<br>HIGH          | 4<br>ACUTE | 4<br>ACUTE   | 3H<br>HIGH     | Review before work starts.        | Isolation<br>Isolate People from the hazard  |  |
| UNLIKELY   | 1<br>LOW                                    | 1<br>LOW      | 2<br>MODERATE      | 3<br>HIGH  | 4<br>ACUTE   | 2M<br>MODERATE | Ensure control measures in place. | <b>Engineering</b><br>Isolate the hazard   |  |
| RARE   | 1<br>LOW                                    | 1<br>LOW      | 2<br>MODERATE      | 3<br>HIGH  | 3<br>HIGH  | 1L<br>LOW      | Monitor and keep records.         | <b>Administrative</b><br>Change  |  |
|  |   |               |                    |            |  |                |                                   | <b>PPE</b>   |  |
| <b>Risk Rating &amp; Required Action:</b>  |   |               |                    |            |  |                |                                   | <b>Notes on Hierarchy of Controls:</b>   |  |
| 4A Stop work. The risk is intolerable. Eliminate the hazard or redesign the activity before proceeding. A Safe Work Method Statement (SWMS) or higher-level authorisation is required. |   |               |                    |            |  |                |                                   | Remember to apply controls in the preferred order shown by the coloured pyramid:   |  |
| 3H Review and approve additional controls before task starts. Senior supervisor sign-off needed.   |   |               |                    |            |  |                |                                   | 1. <b>Eliminate</b>  |  |
| 2M Ensure all nominated controls are in place and effective. Proceed with caution; monitor conditions.   |   |               |                    |            |  |                |                                   | 2. Substitute  |  |
| 1L Proceed, following standard operating procedures. Monitor and keep records.   |   |               |                    |            |  |                |                                   | 3. Isolate   |  |
|  |   |               |                    |            |  |                |                                   | 4. Engineering   |  |
|  |   |               |                    |            |  |                |                                   | 5. Administrative  |  |
|  |   |               |                    |            |  |                |                                   | 6. PPE   |  |
| <b>Consequence Scale:</b>  |   |               |                    |            |  |                |                                   | Always document <b>why</b> a lower-order control is accepted if elimination or substitution is not reasonably practicable. |  |
| Consequence  | People (injury/illness)                     |               | Project / Assets   |            | Compliance / Reputation                                  |                |                                   |  |  |
| Catastrophic   | Fatality or permanent total disability      |               | project shutdown   |            | Significant regulator intervention; criminal prosecution |                |                                   |  |  |
| Major  | Serious injury/illness (hospital > 5 days)  |               | critical delay     |            | Improvement notice; major media coverage                 |                |                                   |  |  |
| Moderate   | Medical-treatment injury; lost-time > 1 day |               | moderate delay     |            | Minor breach; adverse client comment                     |                |                                   |  |  |
| Minor  | First-aid only, no lost time                |               | negligible delay   |            | Isolated non-conformance                                 |                |                                   |  |  |
| Insignificant  | No injury                                   |               | no schedule impact |            | Deviation caught and corrected on site                   |                |                                   |  |  |
|  |   |               |                    |            |  |                |                                   | <i>aligned with Safe Work Australia's Managing the risk of fatigue at work (2023) and ISO 45001:2018 clauses 6–8.</i>      |  |

| JOB STEP                 | POTENTIAL HAZARDS                                      | IR           | CONTROL MEASURES   | RR            |
|--------------------------|--|--------------|--|---------------|
| SPECIFIC WORK STEPS      | HAZARDS THAT MAY ARISE                                 | INITIAL RISK | SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS   | RESIDUAL RISK |
| 1. Preparation           | incorrect procedures, lack of training                 | 4A           | <ul style="list-style-type: none"> <li>- Conduct comprehensive safety training before equipment handling</li> <li>- Ensure procedures are documented and accessible to all workers</li> <li>- Perform regular refresher courses on procedures</li> <li>- Engage experienced personnel to oversee operations</li> <li>- Implement a safety management system</li> <li>- Encourage open communication about safety concerns</li> <li>- Establish a buddy system for new employees</li> <li>- Use safety checklists before starting tasks</li> <li>- Evaluate competency of workers regularly</li> <li>- Provide clear instructions</li> </ul>            | 2M            |
| 2. Equipment Inspection  | hidden defects, improper inspection                    | 4M           | <ul style="list-style-type: none"> <li>- Implement a systematic inspection programme</li> <li>- Train inspectors on identification of common defects</li> <li>- Use tested and calibrated inspection tools</li> <li>- Schedule inspections according to recommended intervals</li> <li>- Employ third-party experts for critical inspections</li> <li>- Maintain detailed inspection records</li> <li>- Implement follow-up actions for detected defects</li> <li>- Regularly review and update inspection procedures</li> <li>- Incorporate feedback from previous inspections</li> <li>- Establish accountability for inspection outcomes</li> </ul> | 2M            |
| 3. Depressurising Vessel | overpressure release, failure to depressurise properly | 4A           | <ul style="list-style-type: none"> <li>- Use auto-release valves to control pressure</li> <li>- Conduct regular valve maintenance</li> <li>- Train staff on manual depressurisation steps</li> <li>- Ensure pressure gauges are accurate</li> <li>- Perform gradual depressurisation to avoid surge</li> <li>- Establish clear communication during process</li> <li>- Use appropriate PPE for operators</li> <li>- Set up no-entry zones around vessels</li> </ul>  | 1L            |

| JOB STEP                         | POTENTIAL HAZARDS                         | IR           | CONTROL MEASURES  | RR            |
|----------------------------------|---|--------------|---|---------------|
| SPECIFIC WORK STEPS              | HAZARDS THAT MAY ARISE                    | INITIAL RISK | SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS  | RESIDUAL RISK |
|                                  |   |              | <ul style="list-style-type: none"> <li>- Regularly review depressurisation procedures</li> <li>- Document incidents to inform safety improvements</li> </ul>  |               |
| 4. Visual Inspection             | missed defects, personal injury           | 3H           | <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> | 1L            |
| 5. Non-Destructive Testing (NDT) | equipment malfunction, improper technique | 4A           | <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p>                   | 2M            |
| 6. Cleaning                      | chemical exposure, slips and trips        | 3H           | <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p>   | 1L            |

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|--------------------------|--------------------------------------|--------------|--|---------------|
| SPECIFIC WORK STEPS      | HAZARDS THAT MAY ARISE               | INITIAL RISK | SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS | RESIDUAL RISK |
|                          |                                      |              |  |               |
| 7. Component Replacement | incorrect parts, installation errors | 4A           |  | 2M            |
| 8. Welding               | fire hazards, toxic fumes            | 4A           |  | 2M            |
| 9. Pressure Testing      | equipment failure, operator error    | 4A           |  | 2M            |

| JOB STEP              | POTENTIAL HAZARDS                        | IR           | CONTROL MEASURES   | RR            |
|-----------------------|--|--------------|--|---------------|
| SPECIFIC WORK STEPS   | HAZARDS THAT MAY ARISE                   | INITIAL RISK | SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS | RESIDUAL RISK |
|                       |  |              |  |               |
| 10. Final Inspection  | oversights, undetected defects           | 3H           |  | 2M            |
| 11. Documentation     | incomplete records, data inconsistencies | 3H           |  | 1L            |
| 12. Operator Training | lack of skill, insufficient knowledge    | 4A           |  | 1L            |

| JOB STEP                              | POTENTIAL HAZARDS                            | IR           | CONTROL MEASURES   | RR            |
|---------------------------------------|--|--------------|--|---------------|
| SPECIFIC WORK STEPS                   | HAZARDS THAT MAY ARISE                       | INITIAL RISK | SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS | RESIDUAL RISK |
|                                       |  |              |  |               |
| 13. Implementation of Safety Controls | inadequate controls, lack of adherence       | 4A           |  | 1L            |
| 14. Routine Maintenance               | equipment deterioration, unforeseen failures | 3H           |  | 1L            |
| 15. Review and Feedback               | feedback overlooked, lack of follow-through  | 3H           |  | 2M            |

| JOB STEP            | POTENTIAL HAZARDS      | IR           | CONTROL MEASURES  | RR            |
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|                     |                        |              | <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> |               |
|                     |                        |              |   |               |

SAMPLE



## EMERGENCY RESPONSE – CALL 000 FOR EMERGENCIES

Ensure to have an Emergency Management Plan in place as well as adequate numbers of trained first aid staff with easy access to fully stocked first aid kits, rescue equipment, material safety data sheets, adequate access to emergency communication equipment and fire-fighting equipment suitable for all classes of fire and ignition sources.

## LEGISLATIVE REFERENCES

RELEVANT LEGISLATION AND CODES OF PRACTICE. DELETE THE LEGISLATIVE REFERENCES IF ANY STATE THAT ARE NOT APPLICABLE

### Queensland & Australian Capital Territory

Work Health and Safety Act 2011

Work Health and Safety Regulations 2011

Legislation QLD: <https://www.worksafe.qld.gov.au/laws-and-compliance/work-health-and-safety-laws>

Codes of Practice QLD: <https://www.worksafe.qld.gov.au/laws-and-compliance/codes-of-practice>

Legislation ACT: <https://www.worksafe.act.gov.au/laws-and-compliance/acts-and-regulations>

Codes of Practice ACT: <https://www.worksafe.act.gov.au/laws-and-compliance/codes-of-practice>

### Victoria

Occupational Health and Safety Act 2004

Occupational Health and Safety Regulations 2017

Legislation VIC: <https://www.worksafe.vic.gov.au/occupational-health-and-safety-act-and-regulations>

Codes of Practice VIC: <https://www.worksafe.vic.gov.au/compliance-codes-and-codes-practice>

### New South Wales

Work Health and Safety Act 2011

Work Health and Safety Regulations 2017

Legislation NSW: <https://www.safework.nsw.gov.au/legal-obligations/legislation>

Codes of Practice NSW: <https://www.safework.nsw.gov.au/resource-library/list-codes-of-practice>

### Western Australia

Work Health and Safety Act 2020

Work Health and Safety Regulations 2022

Legislation Western Australia: <https://www.commerce.wa.gov.au/worksafe/legislation>

Codes of Practice WA: <https://www.commerce.wa.gov.au/worksafe/codes-practice>

### Northern Territory

Work Health and Safety (National Uniform Legislation) Act 2011

Work Health and Safety (National Uniform Legislation) Regulations 2011

Legislation NT: <https://worksafe.nt.gov.au/laws-and-compliance/workplace-safety-laws>

Codes of Practice NT: <https://worksafe.nt.gov.au/laws-and-compliance/codes-of-practice>

### Safe Work Australia Links

Law and Regulation (All States): <https://www.safeworkaustralia.gov.au/law-and-regulation>

Model Codes of Practice: <https://www.safeworkaustralia.gov.au/resources-publications/model-codes-of-practice>

### Model Codes of Practice

- Managing noise and preventing hearing loss at work
- Confined spaces
- Labelling of workplace hazardous chemicals
- Managing risks of hazardous chemicals in the workplace
- Welding processes
- First aid in the workplace
- Managing the risk of falls at workplaces
- Hazardous manual tasks
- Managing the risk of falls in housing construction
- Managing electrical risks in the workplace
- Demolition work
- Excavation work
- Work health and safety consultation, cooperation and coordination
- Managing the work environment and facilities
- How to manage work health and safety risks
- Managing risks of plant in the workplace
- Construction work

### South Australia

Work Health and Safety Act 2012 (SA)

Work Health and Safety Regulations 2012 (SA)

Legislation for SA: <https://www.safework.sa.gov.au/resources/legislation>

Codes of Practice for SA: <https://www.safework.sa.gov.au/workplaces/codes-of-practice#COPs>

### Tasmania

Work Health and Safety Act 2012

Work Health and Safety (Transitional and Consequential Provisions) Act 2012

Work Health and Safety Regulations 2012

Work Health and Safety (Transitional) Regulations 2012

Legislation for TAS: <https://worksafe.tas.gov.au/topics/laws-and-compliance/acts-and-regulations>

Codes of Practice for TAS: <https://worksafe.tas.gov.au/topics/laws-and-compliance/codes-of-practice>

Details of permits, licenses or access required by regulatory bodies (add or delete as required):

- Permits from local council
- Authorisation to commence work
- Any required documents.