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|  | Health & Safety  plant risk assessment Form |

| Ra No.: | Date: | Version No.: | Review Date: | Authorised by: |
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| STEP 1 – ENTER INFORMATION ABOUT THE ACTIVITY/TASK, ITS LOCATION AND THE PEOPLE COMPLETING THE RISK ASSESSMENT |
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| Location name: | Building No.: | Room No.: | | Date: | | Assessed by: | | HSR/Employee represenative: |
| Users of the plant: | | Plant (Manufacturer’s name and model no.):  Serial No.: | | | | | | |
| Purpose of plant: | | **Does the plant require licensing/registration?** | | | Yes  No | Licensing/Registration No.: | | |
| **Additional information for pressure vessels.**  (Refer to AS 4343) | | | Design approval no.: | | Date of manufacture: | |
| Class (A, B, C, D E): | | Number of pressure chambers: | |
| Description of how plant is used: | | | | | | | | |
| Does the operator require a licence or competency? | External licence | | Specify: | | | | | |
| Internal competency | | Specify: | | | | | |
| No specific competency | |  | | | | | |

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| Workplace conditions (Describe layout and physical conditions - including access and egress) | |
| Consider operation outside of normal conditions  ● Cleaning ● Non-standard use ● Breakdown & repair  ● Maintenance ● Commissioning ● Decommissioning  ● Emergency situations |  |
| List systems of work for using the plant:  ● Training ● SOPs  ● Manufacturer’s information and instructions ● Inspections  ● Emergency situations |  |
| Is there past experience with the activity/task that may assist in the assessment?  ● Existing controls ● SOPs ● Standards  ● Industry standards ● Incidents & near-hits ● Legislation & Codes  ● Training ● Incident Investigation ● Guidance material |  |

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| Step 2: Select a Risk Rating Method |

Two Variable Risk Matrix

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| (1) Definitions of likelihood labels | | | |
| Level | Likelihood (Probability) | | |
| Descriptor | Description | Expected to occur |
| A | Almost certain | The event will occur on an annual basis | Once a year or more |
| B | Likely | The event has occurred several times or more in your career | Once every three years |
| C | Possible | The event might occur once in your career | Once every 10 years |
| D | Unlikely | The event does occur somewhere from time to time | Once every 30 years |
| E | Rare | Heard of something like the event occurring elsewhere | Once every 100 years |

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| (2) Definitions of consequence labels | |
| Severity level | Consequences |
| V Catastrophe | One or more fatalities and/or severe irreversible disability to one or more people |
| IV Major | Extensive injury or impairment to one or more persons |
| III Moderate | Short term disability to one or more persons |
| II Insignificant | Medical treatment and/or lost injury time <2 weeks |
| I Negligible | First aid treatment or no treatment required |

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| (3) Risk rating matrix | | | | | |
| Likelihood  label | Consequence label | | | | |
| I | II | III | IV | V |
| A | Medium | High | High | Very high | Very high |
| B | Medium | Medium | High | High | Very high |
| C | Low | Medium | High | High | High |
| D | Low | Low | Medium | Medium | High |
| E | Low | Low | Medium | Medium | High |

Three Variable Risk Calculator

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| (1) Definitions of exposure variables | |
| Exposure | E |
| Continuously or many times daily | 10 |
| Frequently: Approximately once daily | 6 |
| Occasionally: Once a week to once a month | 3 |
| Infrequently: Once a month to once a year | 2 |
| Rarely: Has been known to occur | 1 |
| Very rarely: Not known to have occurred | 0.5 |

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| (2) Definitions of likelihood variables | |
| Likelihood | L |
| Almost certain: The most likely outcome if the event occurs | 10 |
| Likely: Not unusual, perhaps 50-50 chance | 6 |
| Unusual but possible: (e.g. 1 in 10) | 3 |
| Remotely possible: A possible coincidence (e.g. 1 in 100) | 1 |
| Conceivable: Has never happened in years of exposure, but possible (eg 1 in 1,000) | 0.5 |
| Practically impossible: Not to knowledge ever happened anywhere (e.g. 1 in 10,000) | 0. 1 |

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| (3) Definitions of consequence variables | |
| Consequences | C |
| Catastrophe: Multiple fatalities | 100 |
| Disaster: Fatality | 50 |
| Very serious: Permanent disability/ill health | 25 |
| Serious: Non-permanent injury or ill health | 15 |
| Important: Medical attention needed | 5 |
| Noticeable: Minor cuts and bruises or sickness | 1 |

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| (4) Risk score calculator | |
| Risk Score = E x L x C | |
| Risk score | Risk rating |
| > 600 | Very high |
| 300 - 599 | High |
| 90 - 299 | Medium |
| < 90 | Low |

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| STEP 3 – Identify hazards and associated risk Scores and controls | |
| For each of the following prompts:   * **Review the prompts/examples** for each hazard category that may potentially exist for the activity/task; * Determine and record a **raw risk score** by referencing the two variable risk matrix or the three variable risk calculator; * In the **comments** box, describe when and where the hazard is present; * Specify the risk **control type**, for each current or proposed risk control; * Provide a **control description** for each current or proposed risk control; * Where **proposed risk control(s)** have been identified complete a [**Health & Safety Action Plan**](file:///\\is-fs1b\propbuild\Environment%20Health%20and%20Safety\Web%20documents%20repository\2015%20-%20Shared%20Drive\Plant\safety.unimelb.edu.au\docs\health-and-safety-action-plan.docx); * Determine the **residual risk score** referencing the same two variable risk matrix or three variable risk calculator used to determine the raw risk score | Hierarchy of Control (Control Type)  El – Elimination  S – Substitution  En – Engineering Is – Isolation G – Guarding  Sh – Shielding  A – Administrative T – Training In – Inspection  M – Monitoring H – Health Monitoring  P – PPE |

| Category | Raw Risk score | Comments (when and where hazard is present) | Control type | Control description  (Current And Proposed) | Residual Risk Score |
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| Can the following items become ENTANGLED with moving parts of the plant, or materials in motion: |  |  |  |  |  |
| ● Hair  ● Jewellery  ● Rags  ● Gloves ● Clothing  ● Other |  |  |  |  |  |
| Can anyone be CRUSHED due to: |  |  |  |  |  |
| ● Falling, uncontrolled or unexpected movement of plant or load  ● Lack of capacity to slow, stop or immobilise the plant  ● Under or trapped between plant and materials or fixed structure  ● Contact with moving parts during testing, inspection, maintenance, cleaning or repair ● Being thrown off  ● Tipping or rolling over ● Parts of plant collapsing  ● Other |  |  |  |  |  |
| Can anyone be CUT, STABBED or PUNCTURED by coming in contact with: |  |  |  |  |  |
| ● Moving plant or parts ● Work pieces disintegrated  ● Sharp or flying objects ● Work pieces ejected  ● Other |  |  |  |  |  |
| SHEARING – Can anyone’s body parts be cut off between: |  |  |  |  |  |
| ● Two parts of the plant  ● A part of the plan and a work piece or structure  ● Other |  |  |  |  |  |
| Can anyone be STRUCK by moving objects due to: |  |  |  |  |  |
| ● Plant or work pieces being ejected or disintegrated  ● Uncontrolled or unexpected plant movement  ● Mobility ● Other |  |  |  |  |  |
| Can anyone using the plant or in the vicinity of the plant, SLIP, TRIP or FALL due to: |  |  |  |  |  |
| ● The working environment ● Uneven work surface  ● Lack of guardrails ● Poor housekeeping  ● Slippery work surfaces  ● Other |  |  |  |  |  |
| FRICTION - Can anyone be burnt due to: |  |  |  |  |  |
| ● Contact with moving parts or surfaces of the plant  ● Material handled by the plant  ● Other |  |  |  |  |  |
| Can anyone be injured by ELECTRICAL shock or burnt due to: |  |  |  |  |  |
| ● Damaged/poorly maintained leads or switch  ● Working near or contact with live electrical conductors  ● Water near electrical equipment  ● Lack of isolation procedures  ● Other |  |  |  |  |  |
| EMERGENCY STOP BUTTONS - can injury from interaction with the plant be caused by: |  |  |  |  |  |
| ● Lack of prominence of emergency stop  ● Emergency stop not red in colour  ● Stored energy being released slowly or at a sequent time  ● Lack of clarity of emergency stop markings  ● Restarting plant by resetting the emergency stop button  ● Emergency stop not being fail to safe ● Other |  |  |  |  |  |
| Can anyone be injured by an EXPLOSION of the following items triggered by plant operation |  |  |  |  |  |
| ● Gas  ● Dust  ● Vapours  ● Liquids  ● Other |  |  |  |  |  |
| Can anyone be SUFFOCATED due to: |  |  |  |  |  |
| ● Lack of oxygen  ● Atmospheric contamination  ● Other |  |  |  |  |  |
| ENVIRONMENTAL CONDITIONS – Can anyone suffer ill health due to: |  |  |  |  |  |
| Exposure to high temperatures  Exposure to low temperatures  Rain  Sun  Flora  Fauna  Other – specify: |  |  |  |  |  |
| HIGH TEMPERATURE or FIRE – Can anyone: |  |  |  |  |  |
| ● Come into contact with objects at high temperature  ● Be injured by fire  ● Other |  |  |  |  |  |
| Can anyone come into contact with FLUIDS or GASES under HIGH PRESSURE due to: |  |  |  |  |  |
| ● Failure of the plant?  ● Misuse of the plant?  ● Other |  |  |  |  |  |
| ERGONOMIC (incl manual handling) - Can anyone be injured due to: |  |  |  |  |  |
| ● Seating design ● Excessive effort ● Poor lighting  ● Repetitive body movement or posture  ● Poor workplace or plant design ● Controls layout and design  ● Lack of consideration for human behaviour causing mental or physical stress  ● Other |  |  |  |  |  |
| RADIATION Can anyone be injured/suffer ill health due to: |  |  |  |  |  |
| ● Ionising radiation ● Lasers ● Ultraviolet light  ● Microwaves ● Radio waves  ● Infrared ● Magnetic resonance  ● Other |  |  |  |  |  |
| Can anyone be injured or suffer ill health from exposure to OTHER HAZARDS: |  |  |  |  |  |
| ● Chemicals ● Fumes ● Dusts  ● Vibration ● Noise ● Biologicals  ● Lighting ● Toxic gases or vapours  ● Engineered nanoparticles  ● Other |  |  |  |  |  |

| STEP 4 – ImpleMEntation and consultation process | | | | |
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| Determine the person responsible for reviewing and implementing the risk assessment including the identified controls. Ensure a [**Health & Safety Action Plan**](file:///\\is-fs1b\propbuild\Environment%20Health%20and%20Safety\Web%20documents%20repository\2015%20-%20Shared%20Drive\Plant\safety.unimelb.edu.au\docs\health-and-safety-action-plan.docx) has been completed, reviewed and signed off where proposed controls have been identified.  Obtain the authorisation of the management representative.  Ensure the HSR (if applicable) has been consulted. Ensure the employees undertaking the activity have been consulted.  **Record below the names of the persons consulted.** | | | | |
| Research Group Leader |  | | HSR/Employee representative |  |
| Employee(s) |  | | Employee(s) |  |
| Employee(s) |  | | Employee(s) |  |
| Person Responsible for implementation or escalation | |  | | |

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| Extra writing room - use this page to enter extended comments or descriptions |
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For use in conjunction with the [*OHS risk management procedure*](https://policy.unimelb.edu.au/MPF1191) and the [*Regulated plant risk management procedure*](https://safety.unimelb.edu.au/publications/procedure/plant/).

For further information, refer to <http://safety.unimelb.edu.au/tools/risk/> or contact your [Local Health & Safety contact](http://safety.unimelb.edu.au/about/contacts/local.html).