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| https://www-p.unisa.edu.au/styleguide/logos/images/logo_unisa_RGB-blue.png | WHS FORM | WHS41 |
| Plant & EQUIPMENT Risk AssessmentThis form supports the **Managing Workplace Health and Safety Risks** procedure |  |
| **Useful electronic links:**This form can be expanded electronically or extra information (e.g. photos) attached.* [UniSA Safety & Wellbeing website](https://i.unisa.edu.au/staff/ptc/safety-and-wellbeing/)
* [SafeWork SA Resources](https://www.safework.sa.gov.au/law-compliance/laws-regulations/codes-practice) (Legislation and codes of practice)
* [[Australian Standards online](https://www.techstreet.com/sa?_bt=353035286355&_bk=%2Baustralian+%2Bstandards&_bm=b&_bn=g&_bg=72582871578&gclid=EAIaIQobChMI66DD643E6AIVlxmPCh0xMwHDEAAYAiAAEgJKwvD_BwE) (UniSA subscription)](http://www.saiglobal.com/online/autologin.asp)
 |
|  |
| **Workplace (Unit/Institute):** |
| Assessment No: | Assessment Date: / / | Review Date: / /(3 years maximum) |
| **Description of item of plant or equipment:** *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*Location: Campus \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Room no \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Person in charge of the plant or equipment: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Manufacturer/MakeModel\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Serial no and/or UniSA Asset No:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_When purchased:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Installing company (if applicable) ­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Company performing any servicing or calibration: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(if applicable) |
| **Any relevant regulation, code, standard, guideline or manufacturer handbook (list)[[1]](#footnote-1):**Work Health and Safety Regulations 2012, Regs 203 to 226. General duties for management or control of plant.[[2]](#footnote-2)Approved Code of Practice: *Managing Risks of Plant in the Workplace* (Safe Work Australia) |
| **Plant register and SafeWork SA registration:**Is the plant recorded on your local workplace plant register (WHS40 or similar)? Yes/NoDoes the plant require registration with SafeWork SA (Refer WHS Regs, Schedule 5 Part 2)[[3]](#footnote-3)? Yes/No* Is the plant registered with SafeWork SA? Yes/No SWSA Cert/Reg No.
* Is the registration of the plant recorded locally on WHS31 or similar? Yes/No.

For sources of ionising radiation please contact your Departmental Radiation Safety Officer or the University RSO. |
| **Licensing**Are there any licensing requirements associated with ownership or operation of the plant? Yes/NoE.g.: operation of the plant constitutes ‘high risk work’; plant producing ionising radiation.* Are the licences obtained and recorded in the workplace licence register (WHS30 or similar)? Yes/No.

For sources of ionising radiation please contact your Departmental Radiation Safety Officer or the University RSO. |

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| **Step 1** - **Form a team of assessors. Decide who else should be consulted.** |
| Risk assessor(s):Others consulted: (e.g. elected health and safety representative, operator of the plant, other personnel exposed to risks) |
| **Step 2** - **Identify the hazards** associated with the plant or equipment being assessed |
| **Hazards: Potential to cause harm to people, property or the environment. Tick the applicable hazards[[4]](#footnote-4)** |
| **Mechanical hazards** |  | **Radiation** |  | **Unexpected startup, unexpected overrun/overspeed** |  |
| Contact with moving parts; mass and stability problems | **[ ]**  | Low-frequency, radio frequency radiation; microwaves | **⬜** | Failure/Display of control system | **⬜** |
| Accumulation of energy inside machinery eg elastic elements (springs), liquids or gases under pressure, the effect of vacuum | **⬜** | Infrared, visible and UV radiation | **⬜** | Restoration of energy supply after Interruption | **⬜** |
| Crushing hazard | **⬜** | X-rays and gamma rays | **⬜** | External influences on electrical equipment | **⬜** |
| Shearing hazard | **⬜** | Lasers | **⬜** | Other external influences (gravity, wind etc.) | **⬜** |
| Cutting or severing hazard | **⬜** | Alpha and beta rays, electron beams neutrons | **⬜** | Errors in software | **⬜** |
| Entanglement hazards | **⬜** | **Materials and substances** |  | Errors made by operator (human/machine mismatch) | **⬜** |
| Drawing in or trapping hazard | **⬜** | Contact with or inhalation of harmful fluids, gases, mists, fumes and dusts | **⬜** | **Relating to traveling function** |  |
| Impact hazard | **⬜** | Fire and explosion | **⬜** | Movement when starting engine | **⬜** |
| Stabbing puncture | **⬜** | Biological or microbiological hazards | **⬜** | Movement without driver at driving position | **⬜** |
| Friction or abrasion hazard | **⬜** | **Ergonomics** |  | Movement without all parts in a safe position | **⬜** |
| High pressure | **⬜** | Unhealthy postures or excessive effort | **⬜** | Excessive speed of pedestrian-controlled machinery | **⬜** |
| **Electrical hazards** |  | Inadequate consideration of hand-arm or foot-leg anatomy | **⬜** | Excessive oscillations when moving | **⬜** |
| Contact of persons with live parts (direct contact) | **⬜** | Neglected use of PPE | **⬜** | Insufficient ability of machinery to be slowed down, stopped and immobilized | **⬜** |
| Contact of persons with parts which have become live under faulty conditions (indirect contact) | **⬜** | Inadequate lighting | **⬜** | From handling of the machine (lack of stability) | **⬜** |
| Approach to live parts under high voltage | **⬜** | Mental overload and underload, stress | **⬜** | **Mechanical hazard and hazardous events** |  |
| Electrostatic phenomena | **⬜** | Human error, human behavior | **⬜** | From load falls, collisions, machine tipping (lack of stability) | **⬜** |
| Thermal radiation or other phenomena such as projection of molten particles and chemical effects from short circuits, overloads | **⬜** | Inadequate design, location or identification of manual controls | **⬜** | Uncontrolled loading-overloading-overturning moments exceeded | **⬜** |
| **Thermal hazards** |  | Inadequate design or location of visual display units | **⬜** | Unexpected/unintended movement of loads | **⬜** |
| Burns, scalds and other injuries by possible contact with objects or materials (hot or cold) | **⬜** | **Vibration** |  | **Due to power source and to the transmission of power** |  |
| Damage to health by hot or cold working environment | **⬜** | Use of hand held machines | **⬜** | Hazards from engine and the batteries | **⬜** |
| **Noise** |  | Whole body vibration | **⬜** | Hazards from transmission of power between machines | **⬜** |
| Hearing Loss or other physiological disorders | **⬜** | **OTHER** |  | Hazards from coupling and towing | **⬜** |
| Interference with speech, acoustic signals | **⬜** |  | **⬜** |  |  |

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| **List the hazards identified from above** |
| 1. |  | 6. |  |
| 2. |  | 7. |  |
| 3. |  | 8. |  |
| 4. |  | 9. |  |
| 5. |  | 10. |  |
| Any specific circumstances (describe):      |
| Persons at risk (list):Are any undergraduate students operating the plant or equipment? Yes/NoAre any postgraduate students operating the plant or equipment? Yes/No |
| **Step 3 – Risk assessment****Step 4 – Risk controls**  | For each identified hazard rate the risk using the Risk Rating Matrix.Detail controls measures required to address the risks applying the Hierarchy of Controls |
| Controls to be considered from the following hierarchy of control |
| 1. Elimination (is it necessary?)
2. Substitution
3. Isolation (restrict access)
4. Engineering (guarding, redesign)
 | 1. Administration (training. SOPs,)
2. Personal Protective Equipment (PPE) (e.g. gloves, leather apron, coveralls, respirator)
 |
| **Identified Hazards****Exposure** | **Risk assessment** | **Risk Rating** | **Required Controls** | **Controls Implemented** |
|  | **Consequences** | **Likelihood** |  |  |  |
|  | Select | Select | Select |  | Yes [ ]  | No [ ]  |
|  | Select | Select | Select |  | Yes [ ]  | No [ ]  |
|  | Select | Select | Select |  | Yes [ ]  | No [ ]  |
|  | Select | Select | Select |  | Yes [ ]  | No [ ]  |
|  | Select | Select | Select |  | Yes [ ]  | No [ ]  |
|  | Select | Select | Select |  | Yes [ ]  | No [ ]  |
|  | Select | Select | Select |  | Yes [ ]  | No [ ]  |
| Note: Consider any cleaning, maintenance or testing activities and any foreseeable abnormal situations. | Select | Select | Select |  | Yes [ ]  | No [ ]  |
|  | Select | Select | Select |  | Yes [ ]  | No [ ]  |
|  | Select | Select | Select |  | Yes [ ]  | No [ ]  |
|  | Select | Select | Select |  | Yes [ ]  | No [ ]  |
|  | Select | Select | Select |  | Yes [ ]  | No [ ]  |
|  | Select | Select | Select |  | Yes [ ]  | No [ ]  |
| **Is the risk?** (Tick one) | [ ]  Adequately controlled. No further action required - Sign off form as completed. |
|  | [ ]  Inadequately controlled. Further Action/Investigation required. Continue with Step 5. |
| **Step 5 – Implementation Plan (for controls not already in place)** |
| **Control Option** | **Resources** | **Person(s) responsible** | **Proposed implementation date** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
| **Step 6 – Comments and endorsements** |
|      Name:       Signature:       Date:       |
| **Assessment Approval:** (e.g.Principal researcher, Head of research group, General Manager, Technical Services Manager)I am satisfied that the risks are not significant and/or adequately controlled and that resources required will be provided.Name:       Signature:       Date:      Position Title:       |

**Risk Assessment Matrix**

**Prioritising Hazards and Risks**

|  |  |
| --- | --- |
| **C****o****n****s****e****q****u****e****n****c****e** | Probability |
|  | Very Likely | Likely | Unlikely | Highly Unlikely |
| Life Threatening | **High** | **High** | **High** | Medium |
| Detrimental | **High** | **High** | **Medium** | **Medium** |
| Harmful | High | **Medium** | **Medium** | Low |
| Negligible | **Medium** | **Medium** | Low | **Low** |

**Hazard Consequence Rating Table**

|  |  |
| --- | --- |
| **Life Threatening** | Hazard may cause death or total loss of one or more bodily functions (e.g. loss of an arm, an eye, huge financial loss etc). |
| **Detrimental** | Hazard may cause severe injury, illness or permanent partial loss of one or more bodily functions (eg. noise induced hearing loss), or serious property damage, loss of production capability. |
| **Harmful** | Hazard may cause a reportable incident i.e. an incident that results in the employee being unable to undertake their normal duties for 7 days or more, or significant property damage, high financial loss. |
| **Negligible** | Hazard may cause minor injury, illness or property damage, first aid treatment only or no injury, low financial loss. |

**Probability Rating Table**

|  |  |
| --- | --- |
| **Very Likely** | Exposure to hazard likely to occur frequently. |
| **Likely** | Exposure to hazard likely to occur but **not** frequently. |
| **Unlikely** | Exposure to hazard unlikely to occur. |
| **Highly Unlikely** | Exposure to hazard so unlikely that it can be assumed that it will not happen. |

Risk Priority Table

|  |  |  |
| --- | --- | --- |
| Risk Priority | Definitions of Priority | Suggested Time Frame |
| High | Situation critical, stop work immediately or consider cessation of work process.Must be fixed today, consider short term and/or long term actions. | Now |
| **Medium** | Is very important, must be fixed this week, consider short term and/or long term actions. | **This Week** |
| **Low** | Is still important but can be dealt with through scheduled maintenance or similar type programming. However, if solution is quick and easy then fix it today.Review and/or manage by routine procedures. | **1 - 3 Months** |

1. For a list of technical standards refer to Appendix C of *Managing Risks of Plant in the Workplace* [↑](#footnote-ref-1)
2. Additional obligations apply for designing, manufacturing, importing, supplying, installing, constructing or commissioning plant. [↑](#footnote-ref-2)
3. See also Appendix A (second page) of *Managing Risks of Plant in the Workplace*. [↑](#footnote-ref-3)
4. See also Appendix B, Hazard Checklist, of *Managing the Risks of Plant in the Workplace*. [↑](#footnote-ref-4)