|  |  |
| --- | --- |
| Plant |  |
| Assessor (s) |  |
| Location |  |
| Assessment Date |  | Plant ID |  |
| Faculty / Division |  |
| School / Area |  |

|  |
| --- |
| Picture of Plant |
|  |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Exposed Persons | Maintenance  | 🞏 | Inexperienced Operator  | 🞏 | Bystander  | 🞏 | Construction | 🞏 |
| Cleaner  | 🞏 | Skilled Operator  | 🞏 |  | 🞏 |  | 🞏 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Frequency of Exposure | On a daily basis  | 🞏 | Few times weekly | 🞏 | Few times monthly | 🞏 |
| Few times yearly | 🞏 | Annually | 🞏 | One-off | 🞏 |

|  |  |
| --- | --- |
| Assessor (s) |  |

| **Potential Hazards** |
| --- |
| **Hazard** | **Applicable?** | **Hazard Description** |
| Access limitations | 🞏 | Operation or maintenance involves constrained or awkward postures |
| Biological hazards | 🞏 | The use or maintenance of the plant can lead to exposure to hazardous biological materials |
| Chemical hazards | 🞏 | The use or maintenance of the plant can lead to exposure to hazardous chemicals or dusts |
| Cold surfaces | 🞏 | Contact with very cold surfaces or work in cold conditions during operation or maintenance is possible |
| Confined spaces | 🞏 | Operation or maintenance involves access to confined spaces |
| Controls inadequate | 🞏 | The layout or design of controls can lead to wrong choice of controls, inadvertent activation or other accidents |
| Design inadequate | 🞏 | Poor design or layout of the plant could lead to accidents |
| Electrical | 🞏 | Exposed conductors, overloaded circuits, damaged or potentially damaged leads and switches |
| Explosive | 🞏 | Use or create flammable liquids, explosive dusts |
| Falling hazards | 🞏 | Uprotected holes or gaps in walkways or access areas |
| Flammable materials | 🞏 | Handling flammable materials |
| Flying objects | 🞏 | Debris given off or ejected in an uncontrolled manner (e.g. from drills, grinders etc) |
| High pressures | 🞏 | Plant that work under pressure (e.g. pressure lines) |
| Hot surfaces | 🞏 | Contact with hot surfaces during operation or maintenance is possible |
| Inadequate breaking | 🞏 | Breaking that for mobile plant that will not stop movement |
| Labelling inadequate | 🞏 | Labelling of hazards and controls unclear, confusing or inadequate |
| Lighting inadequate | 🞏 | Lighting is adequate given the work |
| Mobile plant | 🞏 | Plant that moves (e.g. forklifts, trucks, vehicles) |
| Moving parts | 🞏 | Parts that may move unexpectedly (e.g. clamped workbits) |
| Noise | 🞏 | Noise |
| Operator restraints inadequate | 🞏 | Restraints such as seatbelts / harnesses for operators missing or inadequate |
| Poor housekeeping | 🞏 | Good housekeeping difficult to maintain due to design, work practices etc |
| Radiation hazards | 🞏 | The use or maintenance of the plant can lead to exposure to hazardous radiation (ionising/non-ionising) |
| Repetitive movement | 🞏 | Operation requires highly repetitive movements |
| Rotating or oscillating parts | 🞏 | Belts, pulleys, flwheels, shafts, spindles, slides, cams, sprockets |
| Sharp parts | 🞏 | Blades, saws, cutters |
| Signs /information inadequate | 🞏 | Signs (e.g. safe working limits for pullies) or other information inadequate |
| Steam | 🞏 | Plant that may unexpectedly release steam or very hot water |
| Trapping hazards | 🞏 | Operation or maintenance can lead to persons becoming trapped |
| Tripping hazards | 🞏 | Lack of safe access or paths around plant |
| Uncontrolled movement | 🞏 | Plant or loads that may move unexpectedly or in an uncontrolled manner |
| Unstable loads or plant | 🞏 | Plant or loads that may tip or rollover |
| Unstable parts | 🞏 | Parts that may fall or collapse |
| Unstable work platforms | 🞏 | Work platforms that are unstable or slippery |
| Ventilation inadequate | 🞏 | Inadequate ventilation leading to hazardous exposures and possibly asphyxiation |
| Vibration | 🞏 | The plant vibrates or leads to vibration in surrounding surfaces |
| Work at heights | 🞏 | Operation or maintenance involves working more than 2 metres of the ground |
| Other Hazards / Notes: |

| **Risk** | **Applicable?** | **Risk Description** |
| --- | --- | --- |
| Abrasion | 🞏 | Risk from cuts, punctures, shearing |
| Accidental activation | 🞏 | Risk from accidental activation (switches, controls) |
| Asphyxiation | 🞏 | Risk from lack of oxygen in confined spaces or from sudden release of gases/cryogenics (e.g. nitrogen) |
| Burns | 🞏 | Risk of burns from heat, steam, laser or flames |
| Cold | 🞏 | Risk from cold (hypothermia, frostbite, increased risk of exertion injury) |
| Collapse | 🞏 | Risk from collapse of plant or part of |
| Crush | 🞏 | Risk from crush from falling object or moving plant in restricted spaces |
| Cuts | 🞏 | Risk from cuts, punctures, shearing |
| Electrocution | 🞏 | Risk of electrocution from exposed wiring, overhead/underground lines etc |
| Entanglement | 🞏 | Risk of entanglement in moving parts |
| Entrapment | 🞏 | Risk of entrapment in hazardous location (e.g. cold room) |
| Explosion | 🞏 | Risk of explosion from flammable or unstable materials in the presence of an ignition source. |
| Eye injury | 🞏 | Risk from flying objects from ejected materials |
| Eye injury from radiation | 🞏 | Risk of eye injury (burns) from welding flash, lasers, UV light or other very bright objects |
| Falls | 🞏 | Risk from falls |
| Hearing injury | 🞏 | Risk to hearing from loud noise |
| Heat | 🞏 | Risk from high temperatures (dehydration, heat stress) |
| High pressure | 🞏 | Risk from high pressure leaks (hydraulic fluids, air) |
| Hit by moving object | 🞏 | Risk from flying objects from ejected materials |
| Hit by moving plant | 🞏 | Risk from plant moving |
| Infection | 🞏 | Risk from exposure to infectious material |
| Pinch | 🞏 | Risk from pinch or nip points |
| Posture | 🞏 | Risk from poor access (confined spaces, awkward access) creates postural problems |
| Puncture | 🞏 | Risk from cuts, punctures, shearing |
| Radiation | 🞏 | Risk from radiation (ionising, UV) |
| Repetitive strain | 🞏 | Risk muscular / tendon / nerve injury from overuse |
| Shearing | 🞏 | Risk from cuts, punctures, shearing |
| Skin irritation / dermatitis | 🞏 | Risk from exposure to some chemicals |
| Slips | 🞏 | Risk of injury from slipping on unsafe or unstable surfaces |
| Suffocation | 🞏 | Risk from suffocation (confined spaces) |
| Toxic materials | 🞏 | Risk from toxic substances (vapors, fumes, dusts) |
| Trip hazard | 🞏 | Risk from tripping over leads, loose mats etc |
| Vibration | 🞏 | Risk from vibration |
| Other Risks / Notes: |

|  |
| --- |
| **Risk Ratings:** |
| Not Determined |  |
| Very Low  | No action required except continuous improvement |
| Low  | Periodic review required: continuous improvement |
| Medium  | Review for improvement |
| High  | Short term action required: continuing review required |
| Extreme  | Immediate action required: consider suspending operations |

| NA - not applicable for this situationOK - controls in place and working effectivelythe next three categories will be used to create an action listR - may need improving - in place controls that are not working effectively or need reviewI - Implement - new or additional controls that are strongly recommendedC - Consider - new or additional controls may be needed and should be considered |
| --- |
| **Control Hierarchy** | **Control** | **NA** | **OK** | **R** | **I** | **C** |
| 1. Elimination | De-commissioning/disposal of the plant | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 2. Substitution | Alternative plant/equipment | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 3a. Modification | Noise insulation | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 3a. Modification | Vibration suppressors | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 3b. Isolation | Controlled, keyed access | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 3b. Isolation | Enclose whole machine (remote operation) | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 3b. Isolation | Enclosure of electrical wiring, steam lines etc | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 3b. Isolation | Guarding of moving parts | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 3b. Isolation | Heat/cold insulation | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 3b. Isolation | Interlocking device | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 3b. Isolation | Screens and barriers | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 3c. Engineering | Approach alarms | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 3c. Engineering | Clamping or securing work-pieces | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 3c. Engineering | Design of controls and readouts | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 3c. Engineering | Door releases in walk-in service spaces, plant rooms etc | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 3c. Engineering | Emergency stops and automatic cutoffs (including RCDs) | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 3c. Engineering | Guard rails (to prevent falls, limit access) | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 3c. Engineering | Improve access / egress | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 3c. Engineering | Intrinsically safe / flameproof electrical fittings | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 3c. Engineering | Isolation switches | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 3c. Engineering | Lighting | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 3c. Engineering | Limiting devices / controls | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 3c. Engineering | Ventilation / extraction systems | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 3d. Mechanical Aids | Automatic air quality alarms | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 3d. Mechanical Aids | Keyed and controlled access to areas and plant | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 3d. Mechanical Aids | Non-slip flooring or mats | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 3d. Mechanical Aids | Visual and audible alarms / warning when operating (e.g. reverse beepers) | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 3d. Mechanical Aids | Work platforms | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 4. Administrative | Approve/test/register changes to plant | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 4. Administrative | Decontamination procedures (after work / before maintenance) | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 4. Administrative | Electrical safety testing | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 4. Administrative | Emergency procedures and equipment | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 4. Administrative | Housekeeping | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 4. Administrative | Inspect equipment etc before use | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 4. Administrative | Labelling (e.g. rating of lifting gear, hazardous piping) | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 4. Administrative | Marking of walkways, steps etc | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 4. Administrative | Material Safety Data Sheets | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 4. Administrative | Operate and maintain to manufacturer's/supplier's instructions/specifications | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 4. Administrative | Operator licensing | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 4. Administrative | Operator training / induction | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 4. Administrative | Permit procedures, lock-out procedures | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 4. Administrative | Registration | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 4. Administrative | Review / update / verify operating procedures | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 4. Administrative | Safe Operating Procedures | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 4. Administrative | Supervision by experienced operator | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 4. Administrative | Test air quality | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 4. Administrative | Test of warning alarms, emergency releases, auto-cut-offs, isolation switches | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 4. Administrative | Test operation of control measures (e.g. ventilation) as per standards | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 4. Administrative | Warning signs | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 4. Administrative | Workplace inspections | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 5. Personal Protective Equipment | Cooling / heating vest | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 5. Personal Protective Equipment | Eye protection | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 5. Personal Protective Equipment | Gloves | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 5. Personal Protective Equipment | Hearing protection | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 5. Personal Protective Equipment | Helmet or other head protection | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 5. Personal Protective Equipment | Laboratory coat / overalls / coveralls | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 5. Personal Protective Equipment | Personal monitoring equipment (dosimeters, radiation badges...) | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 5. Personal Protective Equipment | Respiratory protection | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| 5. Personal Protective Equipment | Safety boots/footwear | 🞏 | 🞏 | 🞏 | 🞏 | 🞏 |
| Other Controls / Notes |

|  |
| --- |
| **Action Plan** |

|  |  |
| --- | --- |
| **Control Type** | Elimination/Substitution/Engineering/Administrative/Personal Protection |
| **Action** |  |
| **Action By** |  |
| **Target Date** |  | **Start Date** |  | **Finish Date** |  |

|  |  |
| --- | --- |
| **Control Type** | Elimination/Substitution/Engineering/Administrative/Personal Protection |
| **Action** |  |
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| **Target Date** |  | **Start Date** |  | **Finish Date** |  |

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