**Machine Guarding Checklist**

If you answer “no” to any of these questions, do not operate the machine until all safeguards are in place.

**General Requirements**

|  |  |
| --- | --- |
| Machine guards prevent body parts from contacting moving parts. | [ ]  Yes [ ]  No |
| Machine guards are secure and difficult to remove. | [ ]  Yes [ ]  No |
| Machine guards block objects from falling into moving parts. | [ ]  Yes [ ]  No |
| Machine guards do not interfere with easy operation of the equipment. | [ ]  Yes [ ]  No |
| Machine guards do not prevent the equipment from being oiled. | [ ]  Yes [ ]  No |
| Equipment can be shut down safely without removing the machine guards. | [ ]  Yes [ ]  No |

**Mechanical Hazards**

|  |  |
| --- | --- |
| The point of operation safeguard protects workers’ body parts from encountering moving parts. | [ ]  Yes [ ]  No |
| Have safeguards been recently removed or altered? | [ ]  Yes [ ]  No |
| The machine guards do not require any sort of improvement. | [ ]  Yes [ ]  No |
| All sprockets, gears, pulleys, and flywheels are properly guarded. | [ ]  Yes [ ]  No |
| All belts and chains are guarded. | [ ]  Yes [ ]  No |
| All screws, keyways, collars, and other dangerous parts are covered. | [ ]  Yes [ ]  No |
| Operators can access both starting and stopping controls easily from their workstation. | [ ]  Yes [ ]  No |
| Each operator has his/her own set of controls. | [ ]  Yes [ ]  No |
| Each hazardous moving part is covered by a machine guard of some kind. | [ ]  Yes [ ]  No |

**Electrical Hazards**

|  |  |
| --- | --- |
| All machine and machine guards follow fire and electrical standards set forth by the NFPA and National Electrical Code. | [ ]  Yes [ ]  No |
| There are no loose conduit fittings. | [ ]  Yes [ ]  No |
| Machines are properly grounded with no loose fixtures. | [ ]  Yes [ ]  No |
| Machine power supply is correctly fused and protected. | [ ]  Yes [ ]  No |
| Workers do not experience shocks when plugging in or turning on the equipment. | [ ]  Yes [ ]  No |

**Training**

|  |  |
| --- | --- |
| Workers have required training to safely operate the machinery. | [ ]  Yes [ ]  No |
| Workers have received training on the machine guarding, including how to protect it from damage and maintain it. | [ ]  Yes [ ]  No |
| All maintenance technicians have received equipment-specific training for the care of machines under their supervision. | [ ]  Yes [ ]  No |
| Workers have been taught to notify managers of issues with the machine guarding before they resume operation. | [ ]  Yes [ ]  No |
| Workers have been trained on when and how to safely remove machine guards. | [ ]  Yes [ ]  No |

**Maintenance**

|  |  |
| --- | --- |
| Maintenance equipment has proper guarding. | [ ]  Yes [ ]  No |
| Technicians employ lockout devices for all energy sources before starting maintenance activities. | [ ]  Yes [ ]  No |
| The facility has an established lockout/tagout procedure, including a policy for violations of the policy. | [ ]  Yes [ ]  No |

**Machine Safeguarding Review Checklist**

Complete a full review of your machine safeguarding measures by filling out this checklist. Use the notes section at the bottom of checklist to expand on any issues or failures you come across.

|  |
| --- |
| **Project Details** |
| Machine Description/ID #: |  |
| Project Title: |  |
| Project Status: |  ☐ Design ☐ Pilot Start Up ☐ Full Start Up |
| Manufacturing Engineer: |  |
| Project EHS Specialist: |  |
| **General Information** |
| Type of Equipment: |  ☐ New ☐ Used |
| Are the operational instructions in your native language? |  ☒ Yes ☐ No |
| **Specific Safeguarding Issues** |
| **Will the machine utilize any of the following energy sources?** |
| Electric 3-phase (indicate voltage) |  ☐ Yes ☐ No ☐ N/A |
| Electric single phase (indicate voltage) |  ☐ Yes ☐ No ☐ N/A |
| Hydraulic |  ☐ Yes ☐ No ☐ N/A |
| Thermal/heat/pressurized liquid |  ☐ Yes ☐ No ☐ N/A |
| Electrodes/elements |  ☐ Yes ☐ No ☐ N/A |
| Natural gas/compressed gas/fuel oil |  ☐ Yes ☐ No ☐ N/A |
| **How will the machine be operated?** |
| Remote control |  ☐ Yes ☐ No ☐ N/A |
| Moveable control/pedestal control |  ☐ Yes ☐ No ☐ N/A |
| Panel mounted control |  ☐ Yes ☐ No ☐ N/A |
| Individual station control |  ☐ Yes ☐ No ☐ N/A |
| **Specific Safeguarding Issues** |
| How many start controls is the machine fitted? |  |
| What color are the start controls? |  |
| Is the machine fitted with the necessary indicators for safe operation? |  ☐ Yes ☐ No ☐ N/A |
| Is the operator able to read the indicators easily from the control position? |  ☐ Yes ☐ No ☐ N/A |
| In the event of a power loss, does the machine incorporate restarting features that can only be operated through voluntary intervention? |  ☐ Yes ☐ No ☐ N/A |
| Is the machine fitted with emergency stops that are red? |  ☐ Yes ☐ No ☐ N/A |
| Is the machine fitted with a mechanism that when initiated will bring the machine safely to a complete stop? |  ☐ Yes ☐ No ☐ N/A |
| Is the control circuit logic of the machine designed to prevent any failure that could lead to a dangerous situation? |  ☐ Yes ☐ No ☐ N/A |
| Are the machine/components/fittings designed and constructed so that under foreseen conditions they will be stable enough for use without the danger of overturning, falling or unexpected movement? |  ☐ Yes ☐ No ☐ N/A |
| If material is fed to the machine automatically, are the feeding devices properly safeguarded? |  ☐ Yes ☐ No ☐ N/A |
| Is the machine fitted with devices to prevent non ergonomic, repetitive or inadequate movements? |  ☐ Yes ☐ No ☐ N/A |
| Is the machine designed to prevent risks from falling or ejected objects (e.g. work pieces, tools, cutting fragments, wastes, etc.)? |  ☐ Yes ☐ No ☐ N/A |
| Are the accessible parts of the machine free from sharp angles and rough surfaces? |  ☐ Yes ☐ No ☐ N/A |
| Are the guards designed to protect exposed persons from the risks associated with moving parts (such as pulleys, belts, gears, cutting tools, cylinders, etc.)? |  ☐ Yes ☐ No ☐ N/A |
| Is the machine designed and constructed so that all electrical hazards are eliminated or are effectively guarded? |  ☐ Yes ☐ No ☐ N/A |
| Is the machine designed and constructed to prevent or limit the buildup of potentially dangerous electrostatic charges and/or be fitted with an electrostatic discharging system? |  ☐ Yes ☐ No ☐ N/A |
| Is the machine designed and constructed to avoid all potential hazards associated with all other energy types (e.g. hydraulic, pneumatic, thermal, etc.) including stored energy? | [ ]  Yes [ ]  No [ ]  N/A |
| Are the connections (such as hydraulic, electrical, etc.) designed to make it impossible to incorrectly mate the system, and will relevant markings be supplied on all connections? | [ ]  Yes [ ]  No [ ]  N/A |
| Are adequate guards available to eliminate risks of injury caused by contact with, or proximity to, machinery parts or materials at high or very low temperatures? | [ ]  Yes [ ]  No [ ]  N/A |
| Is the machine designed and constructed to eliminate/minimize all risks of fire and overheating (risks could be posed by gases, liquids, dusts, vapors, substances produced or used by the machine, or the machine itself)? | [ ]  Yes [ ]  No [ ]  N/A |
| If the machine incorporates the use of any laser equipment, are all applicable laser emitting devices properly guarded? | [ ]  Yes [ ]  No [ ]  N/A |
| Are the adjustment, lubrication and maintenance points located outside all danger zones? | [ ]  Yes [ ]  No [ ]  N/A |
| Are warning signs provided and affixed to the machine for applicable dangers (pinch points, hot/cold surfaces, etc.)? | [ ]  Yes [ ]  No [ ]  N/A |
| Is the machine marked legibly and indelibly with the following specific information: Name and Address of Manufacturer? | [ ]  Yes [ ]  No [ ]  N/A |
| If the machine is a mechanical power press, is the tonnage and die stroke of the press marked legibly and indelibly? | [ ]  Yes [ ]  No [ ]  N/A |
| If the machine is a mechanical power press, are dies stamped with he following information: tonnage, stroke, length, weight? | [ ]  Yes [ ]  No [ ]  N/A |
| Is the machine marked legibly and indelibly with the following specific information: Designation of series or type and Serial Number? | [ ]  Yes [ ]  No [ ]  N/A |
| Is the machine fitted with negative ventilation to avoid dust exposition? | [ ]  Yes [ ]  No [ ]  N/A |
| Is the machine fitted with devices to collect all the residual or waste? | [ ]  Yes [ ]  No [ ]  N/A |
| Is the workstation’s space enough to perform future major maintenance? | [ ]  Yes [ ]  No [ ]  N/A |
| Are the pressure vessels in accordance with legal requirements? | [ ]  Yes [ ]  No [ ]  N/A |
| Is the machine or workstation with adequate illumination level? | [ ]  Yes [ ]  No [ ]  N/A |
| Is the machine designed and constructed to limit the noise level below 85dB(A)? | [ ]  Yes [ ]  No [ ]  N/A |
| Is the machine designed to prevent ergonomic risks to the operator? | [ ]  Yes [ ]  No [ ]  N/A |
| **Additional Notes** |
|  |
| Completed by: | Completion Date: |