**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: | | |