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SAFETY STANDARD FOR SAFEGUARDING MACHINES AND EQUIPMENT

1.0 PURPOSE

To establish safety requirements for the use and safeguarding of industrial machines and equipment.

2.0 BACKGROUND INFORMATION

New standard for the use, handling, and safeguarding of machines and equipment. (No background information was found during a revision of existing standards.)

3.0 SCOPE

This standard applies to the safe use of machines and equipment in shops and floating equipment pertaining to the Panama Canal Authority (ACP) and to contracts working in ACP facilities.

4.0 LEGAL FOUNDATION

This Standard is established pursuant to Agreement No. 12 of the Board of Directors of the Panama Canal Authority (ACP), Safety and Health Regulations, Chapter 1, Article 8.

5.0 DEFINITIONS

5.1 Safeguard: Protection barrier between an individual and the equipment to be utilized, with the purpose of protecting people and parts of equipment (e.g.: lathes, circular saws, other).

6.0 GENERAL

6.1 Safeguarding area:

6.1.1 There shall be sufficient clearance provided around and between machines to allow for safe operations, set up and servicing, material handling, and waste removal.

6.1.2 All rotating or moving parts of equipment shall be guarded to prevent physical contact.

6.1.3 Workers shall be protected from any existing or potential hazard, such as cutting objects that might cause injuries to their hands or feet.

6.1.4 All dangerous work stations, machinery, holes and/or operations shall be adequately guarded.

6.1.5 All noncurrent-carrying metal parts of electrically operated machines shall be bonded and grounded.

6.1.6 All belts, gears, pulleys and rotating or movable chains shall be properly guarded.

6.1.7 Machine guards shall be secured and so arranged that they do not offer a hazard in their use.

6.1.8 All machines and equipment shall be kept clean, free from grease or oil, with an established preventive maintenance program.

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6.1.9 No machine or equipment shall be utilized without the supervisor's permission or the relevant training.

6.1.10 To remove a guard from a machine, it has to be authorized by the supervisor.

6.1.11 No unauthorized person shall be close to an operating machine.

6.2 Stationary Equipment:

6.2.1 Stationary equipment shall be placed in a safe location and anchored in order to prevent them from sliding or moving.

6.2.2 Fixed machinery shall be provided with appropriate safety guards to prevent injuries to the operator and other employees resulting from point of operation, ingoing nip point, rotating parts, flying chip, and spark hazards.

6.2.3 Workers shall be protected from fix or anchored objects that might cause injuries, such as sharp edges on machines or equipment.

6.2.4 Foot operated switches shall be adequately safeguarded, or be placed where they may not be accidentally activated by workers or falling objects.

6.2.5 There shall be a power shut-off switch within reach of the operator's position at each machine.

6.2.6 Coolant-using machines shall be safeguarded to protect the operator as well as other workers close to the area from splashes.

6.2.7 Pulleys and belts within 7 feet of the floor or working level shall be properly guarded.

6.2.8 Prior to cleaning, oiling, repairing or adjusting any machine part, including the safeguards, the equipment shall be disconnected and all movement must have stopped.

6.2.9 Verify that all machines are constructed so as to be free from excessive vibration when the largest tool is mounted and run at full speed.

6.2.10 Fan blades shall have a safeguard with openings that do not exceed ½ inch when operating within 7 feet from the floor.

6.2.11 Circular saws, blades, and other cutting tools shall be kept adequately sharp and with all of their safeguards and protectors.

6.3 PORTABLE TOOLS:

6.3.1 All mechanically driven portable saws shall have safeguards on top and under the supporting base. The **upper** safeguard shall cover the saw down to the teeth gullet, except for the minimum required arc to allow the base tilt for bevel cuts. The **lower** safeguard shall cover the saw down to the teeth gullet except for the minimum required arc to allow the adequate retraction and contact with the work. When removing the tool from the object on which you are working, the lower safeguard shall automatically and instantly return to its safety position.

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6.3.2 Pneumatic tools shall be fixed to hose or its connection by way of an effective means that prevent the tool from accidentally becoming disconnected.

6.3.3 Pneumatic impact (percussion) tools safety clamps or retainers shall be installed firmly and maintained in conditions that prevent the accidental expulsion of the tool.

6.3.4 All portable power tools shall have a constant pressure switch (dead man switch) that will shut off the power when pressure is released.

6.4 Duly marked equipment:

6.4.1 All manually operated valves and switches controlling the operation of equipment and machines shall be clearly identified and readily accessible.

6.4.2 Emergency stop buttons shall be red.

6.5 Instructions for the machine operator. All operators shall:

6.5.1 Wear safety glasses or goggles.

6.5.2 Avoid wearing loose or baggy garments close to machinery.

6.5.3 Wear the right safety shoes.

6.5.4 Remove all rings, necklaces, watches or bracelets.

6.5.5 Wear their hair up if it grows down from their shoulders level.

6.5.6 Abstain from using compressed air to clean the garments, tools or machines.

6.6 Training:

6.6.1 Maintenance operators and workers shall be trained in the use of safeguards, their location, and how they provide protection in machinery and equipment.

6.6.2 Maintenance operators and workers shall be trained on how and under which conditions safeguards may be removed.

6.6.3 Workers shall be trained on the procedure to report when they notice that there are missing or damaged or inadequate safeguards in their working areas.

6.6.4 Files maintenance and access to the information: Training files shall be kept in receiving and delivering units. These files shall be accessible to all employees, pursuant to such ACP regulations that may be applicable.

7.0 RESPONSIBILITES

Responsibilities for ensuring the compliance with this standard are described on the Safety and Occupational Health Management Standard of the ACP.

8.0 INQUIRIES



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Any information or clarification of the content or application of this Standard must be requested in writing to the Safety and Industrial Hygiene Unit (RHSH).

9.0 EXCEPTIONS

Any requests for changes or temporary exceptions to this Standard must be made in writing to the Safety and Industrial Hygiene Unit (RHSH).

10.0 TERM

This Standard shall remain in force until amended or revised.

11.0 REFERENCES

11.1. Concepts and Safeguards Techniques for the General Machinery Industry, Labor Department, Industrial Safety and Health Administration. # 3067

11.2. Manual for Preventing Industrial Accidents, 11th Edition, 1997, Itasca, Illinois. National Safety Council.