

**§1910.261 Pulp, Paper and Paperboard Mills.**

**NOTE:** Instead of 1910.261, Pulp, Paper and Paperboard Mills, the following Oregon-initiated Rule, **437-002-0312 Oregon Rules for Pulp, Paper and Paperboard Mills**, was adopted:

**437-002-0312 Oregon Rules for Pulp, Paper and Paperboard Mills.**

**(1) General Requirements.**

**(a) Application.** *This section applies to establishments where pulp, paper, and paperboard are manufactured or converted. This section does not apply to logging and the transportation of logs to pulp, paper, and paperboard mills.*

**(b) Standards incorporated by reference.** *Standards covering issues of occupational safety and health which have general application without regard to any specific industry are incorporated by reference in sections (2) through (14) of this rule and in subsections (c) and (d) of this rule and made applicable under this rule. Such standards shall be construed according to the rules set forth in §1910.5, Applicability of Standards, in Subdivision A.*

**(c) General incorporation of standards.** *Establishments subject to this section shall comply with the following standards of the American National Standards Institute:*

**(A)** *Safety Requirements for Floor and Wall Openings, Railings, and Toeboards, A10.18-1983.*

**(B)** *Scheme for the Identification of Piping Systems, A13.1-1981 (R1993).*

**(C)** *Safety Code for Portable Wood Ladders, A14.1-1990.*

**(D)** *Safety Code for Portable Metal Ladders, A14.2-1990.*

**(E)** *Safety Code for Fixed Ladders, A14.3-1990.*

**(F)** *Safety Code for Cranes, Derricks, and Hoists, B30.2-1990.*

**(G)** *Overhead and Gantry Cranes, B30.17-1992.*

**(H)** *Crawler, Locomotive, and Truck Cranes, B30.8-1993.*

**(I)** *Safety Code for Woodworking Machinery, ANSI O1.1-1992.*

**(J)** *Method of Measurement of Real-Ear Protection of Hearing Protectors – Physical Attenuation of Ear Muffs, ANSI S3.19-1974 (R1990).*

**(K)** *Practice for Occupational and Educational Eye and Face Protection, ANSI Z87.1-1989.*

- (L) Requirements for Sanitation in Places of Employment, ANSI Z4.1-1986.*
- (M) Fundamentals Governing the Design and Operation of Local Exhaust Systems, Z9.2-1979 (R 1991).*
- (N) Practices for Respiratory Protection, ANSI Z88.2-1992.*
- (O) Safety Requirements for Industrial Head Protection, ANSI Z89.1-1986.*
- (P) Safety Color Code, ANSI Z535.1-1991.*
- (Q) Practice for the Inspection of Elevators (Inspector's Manual), ANSI/ASME A17.2-1988.*
- (R) Safety Code for Elevators, Dumbwaiters, and Moving Walks, ANSI/ASME A17.1-1990.*
- (S) Safety Code for Mechanical Power-Transmission Apparatus, ANSI/ASME B15.1-1992.*
- (T) Safety Code for Conveyors, Cableways, and Related Equipment, ANSI/ASME B20.1-1993.*
- (U) Power Piping, ANSI/ASME B31.1-1992.*
- (V) Safety Code for Powered Industrial Trucks, ANSI/ASME B56.1.*
- (W) Practice for Industrial Lighting, ANSI/IES RP-990.*
- (X) Installation of Blower and Exhaust Systems for Dust, Stock, and Vapor Removal or Conveying, ANSI/NFPA 91-1992.*
- (Y) Fire Department Self-Contained Breathing Apparatus Program, ANSI/NFPA 1404-1989.*
- (Z) Safety Code for Ventilation and Operation of Open-Surface Tanks, ANSI/UL 641-1985.*
- (d) Other standards.** *The following standards shall be considered standards under this section:*
- (A)** *ASME Boiler and Pressure Vessel Code, Section VIII, Unfired Pressure Vessels 1992, including addenda.*
- (B)** *Building Exits Code for Life Safety from Fire, NFPA 101-1991.*
- (C)** *NFPA Code for Prevention of Sulfur Fires and Explosions, NFPA 655-1993.*
- (D)** *Safety in the Transportation, Storage, Handling and Use of Explosives, IME Pamphlet No. 17, March 1987, Institute of Makers of Explosives.*

**(2) Employee Training.**

- (a)** *Employees shall not be permitted to operate any machine or equipment until they have received proper training and are familiar with safe operating procedures.*

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*(b) Employees shall be trained in proper lifting or moving techniques and methods. Mechanical devices should be used or employees should ask for assistance in lifting or moving heavy objects.*

*(c) In each area where hazardous substances may be encountered, personnel shall be trained to cope with emergencies arising from breaks, ruptures, or spills which would create a hazardous condition.*

*(d) Any faulty equipment or hazardous condition shall be promptly reported to the person in charge.*

*(e) When an employee is assigned to work alone in a remote or isolated area, a system shall be instituted whereby such employee reports to someone or a designated person shall check on his or her safety. The procedure shall designate the method of contact and the frequency. All persons will be trained on the procedures.*

### **(3) Safe Practices.**

*(a) Guards. All driving mechanisms, power transmission apparatus, and prime movers shall be constructed, guarded, and used in conformity with Subdivision O, Machinery and Machine Guarding.*

*(b) Inspection of controls and safety devices. Brakes, back stops, antirunaway devices, overload releases, and other safety devices shall be inspected and tested frequently to insure that all are operative and maintained in good repair.*

*(c) Personal protective clothing and equipment. Personal protective clothing and equipment shall be provided and worn in accordance with Subdivision I, Personal Protective Equipment. Respiratory protection must conform to the requirements of §1910.134 of Subdivision I.*

*(d) Floors and platforms. Floors, platforms, and work surfaces shall be guarded and maintained in accordance with §1910.23, in Subdivision D, Walking-Working Surfaces.*

*(e) Lockouts. Lockout/tagout shall be in accordance with the requirements of §1910.147, in Subdivision J, with the exception that:*

*(A) There will be no tagouts allowed in lieu of lockout for that which can be locked out. Tags are provided for identification and information purposes only.*

*(B) Persons engaged in repair, inspection, maintenance, or clean-up shall lockout the affected equipment, retain possession of the keys to the locks, and personally remove the lock and tag upon completion of the work.*

*(C) Group lockout. (See Appendices A and B.)*

*(i) When servicing and/or maintenance is performed by a crew, craft, department or other group, they shall utilize a procedure which affords the employees a level of protection equivalent to that provided by the implementation of a personal lockout device.*

- (ii) *Group lockout devices shall be used in accordance with the procedures required by §1910.147(c)(4) including, but not necessarily limited to, the following specific requirements.*
- (1) *Primary responsibility is vested in an authorized employee for a set number of employees working under the protection of a group lockout device (such as an operations lock);*
  - (2) *Provision for the authorized employee to ascertain the exposure status of individual group members with regard to the lockout of the machine or equipment; and*
  - (3) *When more than one crew, craft, department, etc. is involved, assignment or overall job-associated lockout control responsibility to an authorized employee designated to coordinate affected work forces and ensure continuity of protection; and*
  - (4) *Each authorized employee shall affix a personal lockout device to the group lockout device, group lockbox, or comparable mechanism when he or she begins work, and shall remove those devices when he or she stops working on the machine or equipment being serviced or maintained; and*
  - (5) *Any person involved in the lockout process shall have the right to place their own lock at each lockout location where group lockout procedures have been allowed.*
- (f) **Confined space entry.** *Confined space entry shall be in accordance with §1910.146, Permit-Required Confined Spaces, in Subdivision J.*
- (g) **Industrial power trucks.**
- (A) *All industrial power trucks and operations shall conform to §1910.178, Powered Industrial Trucks, Subdivision N, Material Handling and Storage. All forklift trucks shall be provided with overhead guards. Design requirements shall provide protection for the liquid petroleum gas tank. All guards shall be designed in compliance with §1910.178, Powered Industrial Trucks, in Subdivision N.*
  - (B) *Mirrors or other methods to ensure visibility shall be installed at blind corners or intersections which will allow operators to observe oncoming traffic.*
  - (C) *Every power truck operated from an end platform or standing position shall be equipped with a platform extending beyond the operator's position, strong enough to withstand a compression load equal to the weight of the loaded vehicle applied along the longitudinal axis of the truck with the outermost projection of the platform against the flat vertical surface.*
  - (D) *Pushing of vehicles or rail cars with the forks or clamps of a lift truck is prohibited.*

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**(h) Emergency lighting.**

*(A) Emergency lighting shall be provided wherever it is necessary for employees to remain at their machines or stations to shut down equipment in case of power failure. Emergency lighting shall be provided at stairways and passageways or aiseways used by employees for emergency exit in case of power failure. Emergency lighting shall be provided in all plant first aid and medical facilities.*

*(B) Emergency lighting shall be maintained in accordance with the manufacturer or engineering specifications, and shall be checked at least every 30 days for defects.*

**(i) Electrical equipment.** *All electrical installations and electrical utilization equipment shall comply with the National Electrical Code requirements and the provisions of Subdivision S, Electrical.*

**(4) Handling and Storage of Pulpwood and Pulp Chips.**

**(a) Handling pulpwood with forklift trucks.** *Where large forklift trucks, or lift trucks with clam-jaws, are used in the yard, the operator's enclosed cab shall be provided with an escape hatch, whenever the hydraulic arm blocks escape through the side doors.*

**(b) Handling pulpwood with cranes or stackers.**

*(A) Where locomotive cranes are used for loading or unloading pulpwood, the pulpwood shall be piled so as to allow a clearance of not less than 24 inches between the pile and the end of the cab of any locomotive crane in use, when the cab is turned in any working position.*

*(B) The minimum distance of the pulpwood pile from the centerline of a standard-gage track shall be maintained at not less than 8-1/2 feet.*

*(C) Logs shall be piled in an orderly and stable manner, with no projection into walkways or roadways.*

*(D) Rail cars shall not be spotted on tracks adjacent to the locomotive cranes unless a 24-inch clearance is maintained, as required in section (4)(b)(A) of this rule.*

*(E) The handling and storage of other materials shall conform to sections (4)(b)(A) and (B) of this rule with respect to clearance.*

*(F) Equipment and practices shall conform to American National Standards B30.2-1990 and B30.2.0-1967.*

*(G) Personal protective equipment for such uses as foot, head, and eye protection shall be required for workers on a job basis.*

*(H) No person shall be permitted to walk beneath a suspended load, bucket, or hook.*

**(c) Pulpwood storage and handling.**

**(A)** *Unauthorized vehicles and unauthorized foot traffic shall not be allowed in any active sorting, storing, loading, or unloading areas.*

**(B)** *Unloading lines shall be so arranged that it is not necessary for the workers to attach them on the pond or dump side of the load.*

**(C)** *Jackets or vests of fluorescent or other high visibility material shall be worn by persons working on dry land log storage.*

**(D)** *Wire rope doglines used for towing or rafting shall not be used when:*

**(i)** *They acquire jiggers to the extent that they present a hazard to the workers handling them; or*

**(ii)** *When they are weakened to the extent that they are hazardous.*

**(E)** *Boom sticks shall be capable of safely supporting the weight imposed upon them.*

**(F)** *Stiff booms shall be made by fastening not less than two boom sticks together. The width of the stiff boom shall be not less than 36 inches measured from outside to outside of the outer logs. The boom sticks shall be fastened together with not less than 4-inch by 6-inch cross ties or cable lashing properly recessed into notches in the boom sticks and secured.*

**(G)** *Pike poles shall be kept in good repair. Conductive pike poles shall not be used where it is possible that they may come in contact with electrical conductors.*

**(H)** *All log dumps shall be periodically cleared of bark and other debris.*

**(I)** *When cutting bands on bundled logs, workers shall position themselves in a safe location. Double-bitted axes shall not be used for cutting bands. Caution shall be used to prevent being struck by ends of bands being cut and, if needed, personal protective equipment shall be worn.*

**(J)** *Storing or sorting on water, or any boom work other than boom boat operations, shall require a minimum of two persons.*

**(d) Handling pulpwood from ships.**

**(A)** *Ladders and gangplanks with railings to boat docks shall meet the requirements of American National Standards A10.18-1983, A14.1-1990, A14.2-1990, and A14.3-1990, and shall be securely fastened in place.*

**(B)** *The hatch tender shall be required to signal the hoisting engineer to move the load only after the employees working in the hold are in the clear.*

**(C)** *The air in the ship's hold, tanks, or closed vessels shall be tested for oxygen deficiency and for toxic, explosive and combustible gases and vapors.*

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**(e) Handling pulpwood from flatcars and all other rail cars.**

**(A)** Railroad flatcars for the conveyance of pulpwood loaded parallel to the length of the car shall be equipped with safety-stake pockets.

**(B)** Where pulpwood is loaded crosswise on a flatcar sufficient stakes of sizes not smaller than 4 by 4 inches shall be used to prevent the load from shifting.

**(C)** When it is necessary to cut stakes, those on the unloading side should be partially cut through first, and then the binder wires cut on the opposite side. Wire cutters equipped with long extension handles shall be used. No person shall be permitted along the dumping side of the car after the stakes have been cut.

**(D)** When steel straps without stakes are used, the steel straps shall be cut from a safe area to prevent employees from being struck by the falling logs.

**(E)** Flatcars and all other cars shall be chocked during unloading. Where equipment is not provided with hand brakes, rail clamping chocks shall be used.

**(F)** A derail shall be used to prevent movement of other rail equipment into cars where persons are working.

**(f) Handling pulpwood from trucks.**

**(A)** Cutting of stakes and binder wires shall be done in accordance with section (4)(e)(C) of this rule.

**(B)** Where binder chain and steel stakes are used, the binder chains shall be released and the stakes tripped from the opposite side of the load spillage.

**(C)** Where binder chains and crane slings are used, the crane slings shall be attached and taut before the binder chains are released. The hooker shall see that the helper is clear before signaling for the movement of the load.

**(D)** The truck driver shall leave the truck cab and be in the clear, in a designated area, and shall be in clear view of the unloading equipment operator while the unloader is approaching the loaded truck.

**(E)** The truck driver shall remain outside the cab and clear of the load while logs are being unloaded except that, after a complete load is lifted as a unit and held stationary, the driver may enter the cab and drive forward from under the suspended load.

**(F)** Log unloaders shall not be moved about the premises with loads raised higher than absolutely necessary.

**(g) Handling pulp chips from rail cars.**

*(A) All cars shall be securely fastened in place and all employees in the clear before dumping is started.*

*(B) Personal protective equipment for such uses as foot, head, and eye protection shall be provided, and employees shall wear the equipment when working in the woodyard. Ear protection shall be provided when the noise level may be harmful.*

*(C) When a rollover-type unloading device is used for removing chips from cars, the cars shall be properly secured in place, and all employees shall be in the clear before dumping operation is started.*

**(h) Handling pulp chips and hog fuel from trucks and trailers.**

*(A) All trucks and trailers shall be secure and all employees in the clear before dumping is started.*

*(B) Personal protective equipment necessary to protect workers from hazards shall be provided and worn.*

*(C) Elevating platform-type or cable-lift type unloading devices shall have adequate back bumper stops.*

*(D) Side rails or other positive means to prevent the truck and/or trailer from falling shall be used while unloading the single trailer units.*

*(E) All persons shall be clear of all hoisting or elevating mechanisms before dumping commences.*

*(F) No person shall remain in any truck while the truck is being elevated.*

*(G) A safe area and suitable device shall be provided for the chip tester to use while taking chip samples.*

*(H) Rolled chip nets shall not be positioned where they cover the ladders on rail cars or trucks.*

**(I) Chip and hog fuel storage.**

*(i) When mobile equipment is used on top of hog fuel or chip piles, a roll-over protection system shall be installed on the equipment. If the cab is of the enclosed type, windshield wipers shall be installed.*

*(ii) Hog fuel bins shall be provided with standard railed platform or walkways near the top or other equally effective means shall be provided for use by employees engaged in dislodging hog fuel.*

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*(iii) Extreme care shall be taken to prevent chips or hog fuel from creating an overhang or bridging.*

*(iv) Employees shall be prohibited from working under overhangs or bridges.*

**(J) Chip and sawdust bins.** *Steam or compressed-air lances, or other facilities, shall be used for breaking down the arches caused by jamming in chip lofts. No worker shall be permitted to enter a bin unless done in accordance with §1910.146, Permit-Required Confined Spaces, in Subdivision J.*

**(i) Crane operations.**

**(A)** *Crane boom and load capacities as specified by the manufacturer shall be posted in the cab of the crane in accordance with §1910.180, Crawler, Locomotive and Truck Cranes, in Subdivision N, Material Handling and Storage.*

**(B)** *A safety device such as a heavy chain or cable at least equal in strength to the lifting cables shall be fastened to the boom and to the frame of the boom crane (if it is other than locomotive) at the base. Alternatively, a telescoping safety device shall be fastened to the boom and to the cab frame, so as to prevent the boom from snapping back over the cab in the event of lifting cable breakage.*

**(C)** *A crane shall not be operated where any part thereof may come within 10 feet of overhead powerlines (or other overhead obstructions) unless the powerlines have been de-energized, or clearances are maintained as specified in §1910.303, General Requirements, in Subdivision S, Electrical.*

**(D)** *Standard signals for the operation of cranes shall be established for all movements of the crane, in accordance with American National Standards B30.2-1990 and B30.8-1988.*

**(E)** *Only one member of the crew shall be authorized to give signals to the crane operator.*

**(F)** *All cranes shall be equipped with a suitable warning device such as a horn or whistle.*

**(G)** *A sheave guard shall be provided beneath the head sheave of the boom.*

**(H)** *Grapples, tongs, and buckets shall not be left suspended when not in use.*

**(j) Traffic warning signs or signals.**

**(A)** *A flagger shall direct the movement of cranes or locomotives being moved across railroad tracks or roads, and at any points where the vision of the operator is restricted. The flagger must always remain in sight of the operator when the crane or locomotive is in motion. The blue flag policy shall be used to mark stationary cars day and night. This policy shall include marking the track in advance of the spotted cars (flag for daytime, light for darkness).*

*(B) After cars are spotted for loading or unloading, warning flags or signs shall be placed in the center of the track at least 50 feet away from the cars and a derail set to protect workers in or on the car.*

**(k) Rail car operations and railroad warning devices.**

*(A) On a dead end spur, a blue signal may be displayed adjacent to the switch opening while cars are being loaded or unloaded. When such warning devices are displayed, the equipment shall not be coupled to or moved.*

*(B) Equipment which would obscure the blue signal shall not be placed on the track.*

*(C) Each maintenance crew shall display and remove its own set of blue signals.*

*(D) A flashing warning light or other device shall be installed near any opening which leads to a passageway crossing railroad tracks adjacent to the building. Such light or device shall be activated prior to any switching or movement of railroad equipment to warn workers of the dangerous condition in the area.*

*(E) Workers shall not crawl under or pass between coupled rail cars to cross tracks.*

*(F) An audible whistle, horn, or bell shall be sounded by the locomotive engineer to give adequate warning prior to switching across any road crossing.*

*(G) When switching railroad equipment in congested areas or across roadways or walkways, "flying switches" shall be prohibited.*

*(H) All freight car doors shall be inspected before workers open or close them. A safe method shall be used to open or close the door.*

**(I) Illumination.** *Artificial illumination shall be provided when loading or unloading is performed after dark, in accordance with American National Standard ANSI/IES-RP-1990, Practice for Industrial Lighting.*

**(m) Bridge or dock plates.**

*(A) The construction and use of bridge or dock plates shall conform to requirements of §1910.30(a), Walking-Working Surfaces, in Subdivision D.*

*(B) The sides of bridge or dock plates shall have an upturn or lip of at least 4 inches covering the area between the edge of the loading dock and edge of car or truck floor whenever the distance exceeds 18 inches to prevent wheeled equipment from running off the sides.*

*(C) Bridge or dock plates shall have at least 6 inches bearing surface on the loading dock.*

*(D) Bridge or dock plates intended to be moved by mechanized equipment shall be designed for this purpose or attachments for safe handling shall be used.*

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**(n) Hand tools.** *Handles of wood hooks shall be locked to the shank to prevent them from rotating.*

**(o) Removal of pulpwood.**

**(A)** *The ends of a woodpile shall be properly sloped and cross-tiered into the pile. Upright poles shall not be used at the ends of woodpiles. To knock down wood from the woodpile, mechanical equipment shall be used to permit employees to keep in the clear of loosened wood.*

**(B)** *If dynamite is used to loosen the pile, only authorized personnel shall be permitted to handle and discharge the explosive. An electric detonator is preferable for firing; if a fuse is used, it shall be an approved safety fuse with a burning rate of not less than 120 seconds per yard and a minimum length of 3 feet, in accordance with "Safety in the Transportation, Storage, Handling and Use of Explosives", IME Pamphlet No. 17, March 1987.*

**(p) Log hauls, slips and carriages.**

**(A)** *Controls shall be arranged to operate from a position where the operator will at all times be in the clear of logs, machinery, lines, and rigging.*

**(B)** *Controls shall be marked to indicate their function.*

**(C)** *An effective method of disengaging the head rig saws from the power unit shall be installed on all head rigs where the power unit is not directly controlled by the sawyer. The saws shall be disengaged from the source of power which shall be locked out before repairs or changes are made.*

**(D)** *When needed for protection of personnel, an automatic stop or interlocking device shall be installed on log hauls or slips.*

**(E)** *A barricade or other positive stop of adequate strength shall be provided to protect the sawyer from rolling logs.*

**(F)** *A guard shall be provided to prevent logs from rolling off the log deck into the well.*

**(G)** *The sawyer shall be safeguarded either by his or her location or by use of substantial screens or approved safety glass.*

**(H)** *A substantial stop or bumper shall be installed at each end of the carriage run.*

**(I)** *Canting gear or other equipment shall not be allowed to hang over the log deck in such a manner as to endanger employees.*

**(J)** *Canting gear controls shall be marked to indicate their function.*

**(K)** *The sawyer shall be primarily responsible for the safety of the carriage crew and off-bearers. He or she shall exercise due care in the operation of the carriage and log turning devices.*

**(L)** *A control device shall be provided so that the sawyer may stop the head rig section of the mill without leaving his or her stand.*

**(M)** *The feed control lever of friction or belt-driven carriage feed works shall be designed to operate away from the saws or carriage track.*

**(N)** *Feed works and log turning control levers shall be so arranged that they may be secured when not in use and shall be adequately guarded against accidental activation.*

**(O)** *Carriages upon which persons are required to work shall be solidly decked over and the employees properly protected.*

**(P)** *Substantial sweeps shall be installed in front of each carriage wheel. Such sweeps shall extend to within 1/4 inch of the rails.*

**(Q)** *Where power-operated log turners are used, carriage knees shall be provided with goosenecks or other substantial means of protecting the carriage crew.*

**(q) Belt conveyors.**

**(A)** *The sides of the conveyor shall be constructed so that the pulpwood will not fall off.*

**(B)** *Where conveyors cross passageways or roadways, a horizontal platform shall be provided under the conveyor extending out from the sides of the conveyor a distance equal to 1-1/2 times the length of the wood handled. The platform shall extend the width of the road plus 2 feet on each side and shall be kept free of wood and rubbish. The edges of the platform shall be provided with toeboards or other protection to prevent wood from falling, in accordance with American National Standard A10.18-1983.*

**(C)** *All conveyors for pulpwood shall have the in-running nips between chain and sprockets guarded; also, turning drums shall be guarded.*

**(D)** *Every belt conveyor shall have an emergency stop cable extending the length of the conveyor so that it may be stopped from any location along the line, or conveniently located stop buttons within 10 feet of each work station, in accordance with American National Standard ANS/ASME B20.1-1993.*

**(r) Signs.** *Where conveyors cross walkways or roadways in the yards, signs reading "Danger – Overhead Conveyor" or an equivalent warning shall be erected, in accordance with American National Standard for Safety Color Code, ANSI Z535.1-1991.*

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## **(5) Handling and Storage of Raw Materials Other Than Pulpwood or Pulp Chips.**

### **(a) Personal protective equipment.**

**(A)** Whenever possible, all dust, fumes, and gases incident to handling materials shall be controlled at the source, in accordance with OAR 437-002-0382, Oregon Rules for Air Contaminants, in Subdivision Z. Where control at the source is not possible, respirators with goggles or protective masks shall be provided, and employees shall wear them when handling alum, clay, soda ash, lime, bleach powder, sulfur, chlorine, and similar materials, and when opening rag bales.

**(B)** When handling liquid acid or alkali, workers shall be provided with approved eye and face protection and protective clothing, in accordance with Subdivision I, Personal Protective Equipment.

### **(b) Clearance.**

**(A)** When materials are being piled inside a building and upon platforms, an aisle clearance at least 3 feet greater than the widest truck in use shall be provided.

**(B)** Baled paper and rags stored inside a building shall not be piled closer than 18 inches to walls, partitions, or sprinkler heads.

### **(c) Piling and unpling pulp.**

**(A)** Piles of wet lap pulp (unless palletized) shall be stepped back one-half the width of the sheet for each 8 feet of pile height. Sheets of pulp shall be interlapped to make the pile secure. Pulp shall not be piled over pipelines to jeopardize pipes, or so as to cause overloading of floors, or to within 18 inches below sprinkler heads.

**(B)** Piles of pulp shall not be undermined when being unplied.

**(C)** Floor capacities shall be clearly marked on all floors.

### **(d) Chocking rolls.**

**(A)** Where rolls are pyramided two or more high, chocks shall be installed between each roll on the floor and at every row. Where pulp and paper rolls are stored on smooth floors in processing areas, rubber chocks with wooden core shall be used.

**(B)** When rolls are decked two or more high, the bottom rolls shall be chocked on each side to prevent shifting in either direction.

## **(6) Preparing Pulpwood.**

**(a) Gang and slasher saws.** A guard shall be provided in front of all gang and slasher saws to protect workers from wood thrown by saws. A guard shall be placed over tail sprockets.

- (b) Slasher tables.** Saws shall be stopped and power switches shall be locked out and tagged whenever it is necessary for any person to be on the slasher table.
- (c) Slasher drive belts, pulleys, and shafts.** All belts, pulleys, and shafts shall be guarded in accordance with American National Standard ANSI/ASME B15.1-1992.
- (d) Runway to the jack ladder.** The runway from the pond or unloading dock to the table shall be protected with standard handrails and toeboards. Inclined portions shall have cleats or equivalent nonslip surfacing, in accordance with Subdivision D, Walking-Working Surfaces. Protective equipment shall be provided for persons working over water.
- (e) Guards below table.** Where not protected by the frame of the machine, the underside of the slasher saws shall be enclosed with guards.
- (f) Conveyors.** The requirements of section (4)(q) of this rule shall apply.
- (g) Circular saws (not slasher saws).** Saws shall be provided with standard guards, in accordance with American National Standard ANSI O1.1-1992.
- (h) Fixed chain saws, circular cut-off saws, drag and swing saws.**
- (A)** Saws shall be so arranged that they will not project into any passageway when in an idle or working position. When existing conditions do not leave clear passage the saws shall be fenced off in order to make it impossible for anyone to walk into them.
- (B)** Drag saws and fixed chain saws shall be equipped with a device that will safely lock them in an "UP" position.
- (C)** All persons shall be in the clear before starting operations of a drag, chain, or swing saw.
- (D)** Log decks shall be equipped with a device to hold the material stable while being cut.
- (i) Barker feed.** Each barker shall be equipped with a feed and turnover device which will make it unnecessary for the operator to hold a bolt or log by hand during the barking operation. Eye, ear, and head protection shall be provided for the operator, in accordance with section (3)(c) of this rule.
- (j) Guards.** A guard shall be installed around barkers to confine flying particles, in accordance with ANSI/ASME B15.1-1992.
- (k) Stops.** All control devices shall be locked out and tagged when knives are being changed.
- (l) Speed governor.** Water wheels, when directly connected to barker disks or grinders, shall be provided with speed governors, if operated with gate wide open.

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**(m) Continuous barking drums.**

**(A)** When platforms or floors allow access to the sides of the drums, a standard railing shall be constructed around the drums. When two or more drums are arranged side by side, proper walkways with standard handrails shall be provided between each set, in accordance with section (3)(d) of this rule.

**(B)** Sprockets and chains, gears, and trunnions shall have standard guards, in accordance with section (3)(a) of this rule.

**(C)** Whenever it becomes necessary for a worker to go within a drum, the driving mechanism shall be locked and tagged, at the main disconnect switch, in accordance with section (3)(e) of this rule.

**(D)** This subsection (m) also applies to barking drums employed in the yard.

**(n) Intermittent barking drums.** In addition to motor switch, clutch, belt shifter, or other power disconnecting device, intermittent barking drums shall be equipped with a device which may be locked to prevent the drum from moving while it is being emptied or filled.

**(o) Hydraulic barkers.**

**(A)** Hydraulic barkers shall be enclosed with strong baffles at the inlet and the outlet. The operator shall be protected by at least five-ply laminated glass.

**(B)** The high pressure hoses of hydraulic barkers shall be secured in such a manner that the hose connection ends will be restrained if a hose connection fails.

**(p) Splitter block.** The block upon or against which the wood is rested shall have a corrugated surface or other means provided that the wood will not slip. Wood to be split, and also the splitting block, shall be free of ice, snow, or chips. The operator shall be provided with eye and foot protection. A clear and unobstructed view shall be maintained between equipment and workers around the block and the workers' help area.

**(q) Power control.** Power for the operation of the splitter shall be controlled by a clutch or equivalent device.

**(r) Knot cleaners.** The operators of knot cleaners of the woodpecker type shall wear eye protection equipment.

**(s) Chipper spout.** The feed system to the chipper spout shall be arranged in such a way that the operator does not stand in a direct line with the chipper spout. All chipper spouts shall be enclosed to a height of at least 42 inches from the floor or operator's platform. When other protection is not sufficient, the operator shall be protected from falling into the chipper by the use of a safety belt and lanyard. Ear protection equipment shall be worn by the operator and others in the immediate area if there is any possibility that the noise level may be harmful (see §1910.95, Occupational Noise Exposure, in Subdivision G).

*(t) Feeding material/clearing jams in machines. Appropriate safety belts and lanyards and face protection shall be used by employees who manually feed material or clear jams in machines unless other provisions are made which will protect the employees.*

*(u) Carriers for knives. Carriers shall be provided and used for transportation of knives.*

**(7) Rag and Old Paper Preparation.**

**(a) Ripping and trimming tools.**

*(A) Hand knives and scissors shall have blunt points, shall be fastened to the table with chain or thong, and shall not be carried on the person but placed safely in racks or sheaths when not in use.*

*(B) Hand knives and sharpening steels shall be provided with guards at the junction of the handle and the blade. Utility knives with blade exposure of 2-1/2 inches or less are exempted from this requirement.*

**(b) Shredders, cutters, and dusters.**

*(A) Rotating heads or cylinders shall be completely enclosed except for an opening at the feed side sufficient to permit only the entry of stock. The enclosure shall extend over the top of the feed rolls. It shall be constructed either of solid material or with mesh or openings not exceeding 1/2-inch and substantial enough to contain flying particles and prevent accidental contact with moving parts. The enclosure shall be bolted or locked into place.*

*(B) A smooth-pivoted idler roll resting on the stock or feed table shall be provided in front of feed rolls except when arrangements prevent the operator from standing closer than 36 inches to any part of the feed rolls.*

*(C) Any manually fed cutter, shredder, or duster shall be provided with an idler roll as per section (7)(b)(B) of this rule or the operator shall use special hand-feeding tools.*

*(D) Hoods of cutters, shredders, and dusters shall have exhaust ventilation, in accordance with §1910.94, Ventilation, in Subdivision G.*

**(c) Blowers.**

*(A) Blowers used for transporting rags shall be provided with feed hoppers having outer edges located not less than 48 inches from the fan.*

*(B) The arrangement of the blower discharge outlets and work areas shall be such as to prevent material from falling on workers.*

**(d) Conveyors.** *Conveyors and conveyor drive belts and pulleys shall be fully enclosed or, if open and within 7 feet of the floor, shall be constructed and guarded in accordance with section (4)(q) of this rule, and Subdivision N, Material Handling and Storage.*

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**(e) Guarding requirements.**

**(A)** *Traveling sections of conveyors and other equipment with wheels which run on rails or guides shall be guarded by sweep guards, installed in front of the traveling wheels in all areas where workers may be exposed to contact. Sweep guards shall have not greater than 1/4 inch clearance above the rail or guide.*

**(B)** *When using mechanical equipment to elevate the front end of the chip containers for dumping into a hopper, the shear area between the floor and the elevated section shall be safeguarded.*

**(f) Dust.** *Measures for the control of dust shall be provided, in accordance with American National Standard ANSI/NFPA 91-1992 and Subdivision I, Personal Protective Equipment.*

**(g) Rag cookers.**

**(A)** *When cleaning, inspection, or other work requires that persons enter rag cookers, all steam and water valves, or other control devices, shall be locked and tagged in the closed or "off" position. Blank flanging of pipelines is acceptable in place of closed and locked valves.*

**(B)** *When cleaning, inspection, or other work requires that persons must enter the cooker, one person shall be stationed outside in a position to observe and assist in case of emergency, in accordance with section (3)(f) of this rule.*

**(C)** *Rag cookers shall be provided with safety valves in accordance with the ASME Boiler and Pressure Vessel Code, Section VIII, Unfired Pressure Vessels – 1992.*

**(8) Chemical Processes of Making Pulp.**

**(a) Industrial kiln guns and ammunition.** *Management shall develop written instructions, including safety procedures, for storing and operating industrial kiln guns and ammunition. All persons working with this equipment shall be instructed in these procedures and shall follow them.*

**(b) Sulfur burners.**

**(A)** *Sulfur-burner houses shall be safely and adequately ventilated, and every precaution shall be taken to guard against dust explosion hazards and fires, in accordance with American National Standard Z9.2-1979 (R1991), and NFPA 655-1993.*

**(B)** *Nonsparking tools and equipment shall be used in handling dry sulfur.*

**(C)** *Sulfur storage bins shall be kept free of sulfur dust accumulation, in accordance with American National Standard ANSI Z9.2-1979 (R1991).*

**(D)** *Electric equipment shall be of the explosion-proof type, in accordance with the requirements of Subdivision S, Electrical.*

*(E) Sulfur-melting equipment shall not be located in the burner room.*

**(c) Protection for employees (acid plants).**

*(A) Gas masks, fitted with canisters containing absorbents for the particular acids, gases, or mists involved, shall be provided for employees of the acid department.*

*(B) Supplied air respirators shall be strategically located for emergency and rescue use.*

*(C) During inspection, repairs, or maintenance of acid towers, the worker shall be provided with eye protection, a supplied air respirator, a safety belt, and an attached lifeline. The line shall be extended to an attendant stationed outside the tower opening.*

**(d) Acid tower structure.** *Outside elevators shall be inspected daily during winter months when ice materially affects safety. Elevators, runways, stairs, etc., for the acid tower shall be inspected monthly for defects that may occur because of exposure to acid or corrosive gases.*

**(e) Tanks (acid).** *Entering acid tanks shall be in accordance with §1910.146, Permit-Required Confined Spaces, in Subdivision J.*

**(f) Clothing.** *Where lime slaking takes place, employees shall be provided with rubber boots, rubber gloves, protective aprons, and eye protection. A deluge shower and eye fountain shall be provided to flush the skin and eyes to counteract lime or acid burns.*

**(g) Lead burning.** *When lead burning is being done within tanks, fresh air shall be forced into the tanks so that fresh air will reach the face of the worker first and the direction of the current will never be from the source of the fumes toward the face of the workers. Supplied air respirators (constant-flow type) shall be provided.*

**NOTE:** *(For specifics refer to Subdivision Q, Welding, Cutting and Brazing; and §1910.1025, Lead, in Subdivision Z.)*

**(h) Hoops for acid storage tanks.** *Hoops of tanks shall be made of rods rather than flat strips and shall be safely maintained by scheduled inspections.*

**(i) Quicklime stoppages.** *Water shall not be used to unplug quicklime stops or plugs in pipes or confined spaces.*

**(j) Digester building exits.** *At least one unobstructed exit at each end of the room shall be provided on each floor of a digester building.*

**(k) Digester building escape respirators.** *Escape respirators shall be available for escape purposes only. These respirators shall meet the requirements of §1910.134 in Subdivision I, including the requirement to be inspected at frequent intervals, not to exceed one month.*

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**(l) Elevators.**

*(A) Elevators shall be constructed in accordance with American National Standard A17.1-1990.*

*(B) Elevators shall be equipped with escape respirators for the maximum number of passengers.*

*(C) Elevators shall be equipped with an alarm system to advise of failure.*

**(m) Blowoff valves and piping.**

*(A) The blowoff valve of a digester shall be arranged so as to be operated from another room, remote from safety valves.*

*(B) All fasteners used to secure digester piping shall conform to ANSI/ASME B31.1-1992.*

*(C) Digester blow valves shall be pinned or locked in closed position throughout the entire cooking period. This rule applies only to manually operated valves in batch digestors.*

**(n) Blow lines.**

*(A) When blow lines from more than one digester lead into one pipe, the cock or valve of the blow line from the tank being inspected or repaired shall be locked and tagged out, or the line shall be disconnected and blocked off.*

*(B) Test holes in piping systems. Test holes in blow lines of piping systems shall not be covered with insulation or other materials.*

**(o) Inspection and repair of tanks.** All piping leading to tanks shall be blanked off or valved and locked in accordance with §1910.147, Lockout/Tagout, in Subdivision J.

**(p) Blow pits and blow tanks.**

*(A) Blow-pit openings shall be preferably on the side of the pit instead of on top. When located on top, openings shall be as small as possible and shall be provided with railings, in accordance with Subdivision D, Walking-Working Surfaces.*

*(B) Entrance into blow pits must be done in accordance with §1910.146, Subdivision J.*

*(C) A signaling device shall be installed in the digester and blow-pit rooms and chip bins to be operated as a warning before and while digesters are being blown.*

*(D) Blow-pit hoops shall be maintained in a safe condition.*

**(q) Blowing batch digester.**

**(A)** Blowoff valves shall be opened slowly.

**(B)** After the digester has started to be blown, the blowoff valve shall be left open, and the hand plate shall not be removed until the digester cook signals the blowpit person that the blow is completed. Whenever it becomes necessary to remove the hand plate to clear stock, operators shall wear eye protection equipment and protective clothing to guard against burns from hot stock.

**(C)** Means shall be provided whereby the digester cook shall signal the person in the chip bin before starting to load the digester.

**(r) Inspecting and repairing digester.**

**(A)** Valves controlling lines leading into a digester shall be locked out and tagged in accordance with §1910.147, Lockout/Tagout, in Subdivision J.

**(B)** Sources of energy associated with a digester shall be isolated in accordance with §1910.147, Lockout/Tagout, in Subdivision J.

**(C)** Entry into the digester shall be in accordance with §1910.146, Permit-Required Confined Spaces, in Subdivision J.

**(D)** The concentration of lead in the air shall not exceed the limits specified in §1910.1025, Lead, Subdivision Z.

**(E)** All employees entering digesters for inspection or repair work shall be provided with protective headgear.

**(F)** Eye protection and dust respirators shall be provided to workers while the old brick lining is being removed, in accordance with Subdivision I, Personal Protective Equipment.

**(G)** Sanitary facilities shall be provided as specified in §1910.141, Sanitation, in Subdivision J.

**(s) Pressure tanks-accumulators (acid).**

**(A)** Safety regulations governing inspection and repairing of pressure tanks-accumulators (acid) shall be the same as those specified in section (8)(t) of this rule.

**(B)** The pressure tanks-accumulators shall be inspected twice annually and more frequently if required by the manufacturer or engineer's recommendations. (Refer to Boiler and Pressure Vessel Safety Laws of the State Building Codes Division, Department of Consumer and Business Services.)

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**(t) Pressure vessels (safety devices).**

**(A)** Each unfired pressure vessel shall have a pressure relieving device or devices installed and operated in accordance with ASME Boiler and Pressure Vessel Code, Section VIII (Unfired Pressure Vessels – 1992). In the case of batch digesters with safety pressure relieving devices installed directly to the pressure vessel, means shall be devised to verify regularly that the safety devices have not become plugged or corroded to the point of being inoperative.

**(B)** All safety devices shall conform to Paragraph U-2 in the ASME Boiler and Pressure Vessel Code, Section VIII, Unfired Pressure Vessels – 1992.

**(u) Miscellaneous.** Insofar as the processes of the sulfate and soda operations are similar to those of the sulfite processes, sections (8)(a) through (t) of this rule shall apply.

**(A)** Quick operating showers, bubblers, etc., shall be available for emergency use in case of caustic soda burns.

**(B)** Rotary tenders, smelter operators, and those cleaning smelt spouts shall be provided with eye protection equipment (fitted with lenses that filter out the harmful rays emanating from the light source) when actively engaged in their duties, in accordance with §1910.132, in Subdivision I.

**(C)** Piping, valves and fittings between the digester, blowpit, and blow tanks shall be in accordance with ANSI/ASME B31.1-1992. These shall be inspected at least semi-annually to determine the degree of deterioration and repaired or replaced when necessary, in accordance with American National Standards ANSI/ASME B31.1-1992.

**(v) Welding.** Welding on blow tanks, accumulator tanks, or any other vessels where turpentine vapor or other combustible vapor could gather shall be done only after the vessel has been completely purged of fumes. Fresh air shall be supplied workers inside of vessels.

**NOTE:** See Subdivision Q, Welding, Cutting and Brazing, for additional welding requirements.

**(w) Turpentine systems and storage tanks.** Nonsparking tools and ground hose shall be used when pumping out the tank. The tank shall be surrounded by a berm or moat.

**(x) Recovery furnace area.**

**(A)** An audible warning system shall be installed in kraft and soda base sulfite recovery furnace areas and shall be activated whenever an emergency exists.

**(B)** All personnel working in recovery furnace areas shall be instructed on procedures to be followed when emergency warning systems are activated.

**(C)** Emergency warning systems in the recovery furnace areas shall be kept in proper working condition and shall be tested or checked weekly.

- (D)** Workers shall stand to the side while opening a furnace or boiler firebox door.
- (E)** Smelt-dissolving tanks shall be covered and the cover kept closed, except when samples are being taken.
- (F)** Smelt tanks shall be provided with vent stacks and explosion doors, in accordance with American National Standard ANSI/UL 641-1985.
- (G)** An emergency shutdown procedure as currently recommended by the boiler manufacturer shall be implemented and used when an emergency shutdown is required. Both normal and emergency shutdown procedures shall be posted.
- (H)** Recovery furnaces and power boilers are to be constructed, maintained, and serviced as required by the State Building Codes Division of the Department of Consumer and Business Services.
- (I)** Open pipes shall not be used as punch bars if the use would create a hazard.
- (J) Furnace room.** Exhaust ventilation shall be provided where niter cake is fed into a rotary furnace and shall be so designed and maintained as to keep the concentration of hydrogen sulfide gas below the limits listed in OAR 437-002-0382, Oregon Rules for Air Contaminants, in Subdivision Z.

**(9) Bleaching.**

**(a) Bleaching containers.** Bleaching containers, such as cells, towers (bleaching engines), etc., except the Bellmer type, shall be completely covered on the top, with the exception of one small opening large enough to allow filling but too small to admit a person. Platforms leading from one engine to another shall have standard guardrails, in accordance with Subdivision D, Walking-Working Surfaces.

**(b) Bleach plant alarm system.** An audible alarm system shall be installed and it shall be activated whenever a serious leak or break develops in the bleach plant area which creates a health or fire hazard.

**(c) Bleach mixing rooms.**

**(A)** Areas where dry bleach powder is mixed shall be provided with adequate exhaust ventilation, located at the floor level, in accordance with ANSI/UL 641-1985.

**(B)** Respiratory protection shall be provided for emergency use, in accordance with American National Standards ANSI/NFPA 1404- 1989, and Z88.2-1980. Respiratory protection must conform to the requirements of §1910.134 of Subdivision I.

**(C)** For emergency and rescue work, self-contained air masks or supplied air equipment shall be provided in accordance with American National Standards Z88.2-1980. Respiratory protection must conform to the requirements of §1910.134 of Subdivision I.

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**(d) Liquid chlorine.**

**(A)** Tanks of liquid chlorine shall be stored in an adequately ventilated unoccupied room, where their possible leakage cannot affect workers.

**(B)** Gas masks capable of absorbing chlorine shall be supplied, conveniently placed, and regularly inspected, and workers who may be exposed to chlorine gas shall be instructed in their use.

**(C)** For emergency and rescue work, independent self-contained breathing apparatus or supplied air equipment shall be provided.

**(D)** At least two exits, remote from each other, shall be provided for all rooms in which chlorine is stored.

**(E)** Spur tracks upon which tank cars containing chlorine and caustic are spotted and connected to pipelines shall be protected by means of a derail in front of the cars.

**(F)** All chlorine, caustic, and acid lines shall be marked for positive identification, in accordance with American National Standard A13.1-1981 (R 1985).

**(e) Handling chlorine dioxide.**

**(A)** Chlorine dioxide generating and storage facilities shall be placed in areas which are adequately ventilated and are easily kept clean of wood, paper, pulp, etc., to avoid contamination which might cause a reaction. This can be accomplished by placing these facilities in a separate room or in a designated outside space.

**(B)** Safety showers and/or jump tanks and eyewash fountains shall be provided for persons working around sodium chlorate and the other hazardous chemicals involved in this process.

**(C)** Water hoses for flushing spills shall be adequate in size and located where needed.

**(D)** The generating area shall have signs in accordance with Subdivision J, General Environmental Controls, warning of the hazard and restricting entrance to authorized personnel only.

**(E)** Facilities handling sodium chlorate and chlorine dioxide shall be declared "No Smoking" areas and shall have signs posted accordingly.

**(F)** All equipment involved in the chlorine dioxide process where pressure may be generated shall be provided with adequate pressure relief devices.

**(G)** Respiratory protective equipment approved for use in exposures to chlorine and chlorine dioxide gases shall be provided.

*(H) Management shall be responsible for developing written instructions including safety procedures for operating and maintaining the generator and associated equipment. All personnel working on this equipment shall be thoroughly trained in these procedures and shall follow them.*

*(I) Only authorized personnel shall be allowed in close proximity to the chlorine dioxide generating equipment.*

*(J) When reasonably possible, the sample station should be located on the outside of the generating room. Goggles must be worn when taking samples.*

*(K) Welding or burning shall not be performed on the generator system while it is operating. Immediately before maintenance can be performed on the inside of any of this equipment, it shall be thoroughly flushed with water and purged of hazardous gases.*

*(L) Chlorine and chlorine dioxide gas shall be carried away from the work place and breathing area by an exhaust system. The gas shall be rendered neutral or harmless before being discharged into the atmosphere. The requirements of American National Standard Z9.2-1979 (R1991) shall apply to this subdivision.*

**(f) Handling sodium chlorate.**

*(A) Workers handling and working with sodium chlorate shall be thoroughly trained in precautions to be used in handling and special work habits.*

*(B) Workers exposed to direct contact with sodium chlorate shall wear appropriate personal protective equipment.*

*(C) Facilities for storage and handling of sodium chlorate shall be constructed so as to eliminate possible contact of dry or evaporated sodium chlorate with wood or other material which could cause a fire or explosion.*

*(D) Chlorine gas shall be carried away from the work place and breathing area by an exhaust system. The gas shall be rendered neutral or harmless before being discharged into the atmosphere. The requirements of American National Standard Z9.2-1979 (R1991) shall apply to this subdivision.*

*(E) Sodium chlorate facilities shall be constructed with a minimum of packing glands, stuffing boxes, etc.*

**(g) Bagged or drummed chemicals.** *Bagged or drummed chemicals require efficient handling to prevent damage and spillage. Certain oxidizing chemicals used in bleaching pulp and also in some sanitizing work require added precautions for safety in storage and handling. In storage, these chemicals shall be isolated from combustible materials and other chemicals with which they will react such as acids. They shall also be kept dry, clean and uncontaminated.*

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## **(10) Mechanical Pulp Process.**

### **(a) Pulp grinders.**

- (A)** Water wheels directly connected to pulp grinders shall be provided with speed governors limiting the peripheral speed of the grinder to that recommended by the manufacturer.
- (B)** Doors of pocket grinders shall be arranged so as to keep them from closing accidentally.
- (b) Butting saws.** Hood guards shall be provided on butting saws, in accordance with American National Standard ANSI O1.1-1992.
- (c) Floors and platforms.** The requirements of section (3)(d) of this rule shall apply.
- (d) Personal protection.** Persons exposed to falling material shall wear eye, head, foot, and shin protection equipment, in accordance with Subdivision I, Personal Protective Equipment.

## **(11) Stock Preparation.**

### **(a) Pulp shredders.**

- (A)** Cutting heads shall be completely enclosed except for an opening at the feed side sufficient to permit only entry of stock. The enclosure shall be bolted or locked in place. The enclosure shall be of solid material or with mesh or other openings not exceeding 1/2-inch.
- (B)** Either a slanting feed table with its outer edge not less than 36 inches from the cutting head or an automatic feeding device shall be provided.
- (C)** Repairs for cleaning of blockage shall be done only when the shredder is shutdown and control devices locked.
- (D)** All power-driven mechanisms shall be guarded in accordance with section (3)(a) of this rule.
- (b) Pulp conveyors.** Pulp conveyors and conveyor drive belts and pulleys shall be fully enclosed, or if open and within 7 feet of the floor, shall be constructed and guarded in accordance with Subdivision N, Material Handling and Storage, and Subdivision O, Machinery and Machine Guarding.
- (c) Floors, steps, and platforms.** The requirements of section (3)(d) of this rule shall apply.
- (d) Beaters.**
  - (A)** Beater rolls shall be provided with covers.
  - (B)** Guardrails 42 inches high shall be provided around beaters where tub tops are less than 42 inches from the floor, in accordance with section (3)(d) of this rule and Subdivision D, Walking-Working Surfaces.

*(C) When cleaning, inspecting, or other work requires that persons enter the beaters, all control devices shall be locked and tagged out, in accordance with §1910.147, Lockout, in Subdivision J.*

*(D) When beaters are fed from the floor above, the chute opening, if less than 42 inches from the floor, shall be provided with a complete rail or other enclosure. Openings for manual feeding shall be sufficient only for entry of stock and shall be provided with at least two permanently secured crossrails, in accordance with Subdivision D, Walking-Working Surfaces.*

*(E) Floors around beaters shall be provided with sufficient drainage to remove wastes.*

**(e) Pulpers.**

*(A) All pulpers having the top or any other opening of the vessel less than 42 inches from the floor or work platform shall have such openings guarded by railed or other enclosures. For manual charging, openings shall be sufficient only to permit the entry of stock and shall be provided with at least two permanently secured crossrails, in accordance with §1910.23, Guarding Floor and Wall Openings and Holes, in Subdivision D.*

*(B) When cleaning, inspecting or other work requires persons to enter the pulpers it shall be in accordance with §1910.146, Permit-Required Confined Spaces, in Subdivision J. All power mechanisms shall be guarded as required in Subdivision O, Machinery and Machine Guarding.*

*(C) Cleaning or inspecting pulpers or other work, including work above the pulper in a dangerous position, shall be in accordance with §1910.147, Lockout, in Subdivision J.*

*(D) All power mechanisms shall be guarded in accordance with Subdivision O, Machinery and Machine Guarding.*

**(f) Pulping devices.**

*(A) Emergency stop controls shall be provided at the feed point when pulping devices are fed manually from the floor above.*

**(g) Guillotine-type roll splitters.** *Rolls shall be centered and in a horizontal position directly below the guillotine-type blade while being split. No part of the body shall be under the guillotine-type blade.*

**(h) Stock chests and tanks.**

*(A) All control devices shall be locked when persons enter stock chests, in accordance with §1910.147, Lockout/Tagout, in Subdivision J.*

*(B) All power mechanisms shall be guarded in accordance with Subdivision O, Machinery and Machine Guarding.*

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*(C) When cleaning, inspecting, or other work requires that persons enter stock chests, they shall be provided with a low-voltage extension light.*

**(12) Machine Room.**

**(a) Controls and safety devices.**

*(A) Electrically or manually operated power disconnecting devices for all power-operated equipment shall be provided within easy reach of the operator while in his or her normal operating position. If necessary for safety of the operation, the machine shall be so equipped that retarding or braking action can be applied at the time of or after the source of power is deactivated.*

*(B) Pulp and paper machines shall be equipped with stopping devices. The devices shall be located where they can be used readily to stop the machines or sections of the machine. Power disconnect devices and retarding or braking controls provided for in section (12)(a)(A) of this rule are required for the safe operation of a pulp and paper machine.*

*(C) Brakes, back stops, antirunaway devices, overload releases, and other safety devices shall be inspected and tested frequently to insure that all are operative and maintained in good repair.*

*(D) An audible alarm shall be sounded prior to starting up any section of a pulp or paper machine. Sufficient time shall be allowed between activation of the alarm system and start-up of the equipment to allow any persons to clear the hazardous area.*

*(E) In starting up a dryer section, dryers shall be preheated and steam for heating the drums shall be introduced slowly, while the drums are revolving.*

*(F) Employees shall not attempt to remove a broken carrier rope from a dryer while the section is running at operating speed.*

*(G) Employees shall not feed a stack with any hand-held device which is capable of going through the nip.*

*(H) Employees shall stop dryer to remove a wrap except in cases where it can be safely removed by using air or other safe means.*

*(I) Special protective gloves shall be provided and shall be worn by employees when filing or handling sharp-edged doctor blades.*

*(J) Employees shall not place their hands between the sharp edge of an unloaded doctor blade and the roll while cleaning the doctor blade.*

*(K) The crane operator shall ascertain that reels are properly seated at winder stand or at reel arms before he or she disengages the hooks.*

*(L) Shaftless winders shall be provided with a barrier guard of sufficient strength and size to confine the rolls in the event they become dislodged while running.*

*(M) Employees shall keep clear of hazardous areas around the lowerator, especially all lowerator openings in a floor and where roll is being discharged.*

*(N) If a powered roll ejector is used it should be interlocked to prevent accidental actuation until the receiving platform or roll lowering table is in position to receive the roll.*

*(O) Provision shall be made to hold the rider roll when in a raised position unless counterbalancing eliminates the hazard.*

**(b) Drives.**

*(A) All drives, pulleys, couplings, and shafts on equipment requiring service while operating shall have standard guards in accordance with section (3)(a) of this rule.*

*(B) All drives shall be provided with lockout devices at the power switch which interrupts the flow of current to the unit.*

*(C) All ends of rotating shafts including dryer drum shafts shall be completely guarded.*

*(D) All accessible disengaged doctor blades should be covered.*

*(E) All exposed shafts shall be guarded. Crossovers shall be provided.*

*(F) Oil cups and grease fittings shall be placed in a safe area remote from nip and heat hazards.*

**(c) Protective equipment.** *Face shields, aprons and rubber gloves shall be provided for workers handling acids in accordance with sections (3)(c) and (5)(a) of this rule.*

**(d) Walkways.** *Steps and footwalks along the fourdrinier and press section shall have nonslip surfacing and be complete with standard handrails, when practical, in accordance with §1910.23, in Subdivision D, Walking-Working Surfaces.*

**(e) Steps.** *Steps of uniform rise and tread with nonslip surfaces shall be provided at each press in accordance with Subdivision D, Walking-Working Surfaces.*

**(f) Plank walkways.** *A removable plank shall be provided along each press, with standard guardrails installed. The planks shall have nonslip surfaces in accordance with Subdivision D, Walking-Working Surfaces.*

**(g) Dryer lubrication.** *If a gear bearing must be oiled while the machine is in operation, an automatic oiling device to protect the oiler shall be provided, or oil cups and grease fittings shall be placed along the walkways out of reach of hot pipes and dryer gears.*

**(h) Levers.** *All levers carrying weights shall be constructed so that weights will not slip or fall off.*

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**(i) First dryer.** *Either a permanent guardrail or apron guard or both shall be installed in front of the first dryer in each section in accordance with Subdivision O, Machinery and Machine Guarding.*

**(j) Steam and hot-water pipes.** *All exposed steam and hot-water pipes within 7 feet of the floor or working platform or within 15 inches measured horizontally from stairways, ramps, or fixed ladders shall be covered with an insulating material, or guarded in such manner as to prevent contact.*

**(k) Dryer gears.** *Dryer gears shall be guarded except where the oilers' walkway is removed out of reach of the gears' nips and spokes and hot pipes in accordance with Subdivision O, Machinery and Machine Guarding.*

**(l) Broke hole.**

**(A)** *A guardrail shall be provided at broke holes in accordance with Subdivision D, Walking-Working Surfaces.*

**(B)** *Where pulpers are located directly below the broke hole on a paper machine and where the broke hole opening is large enough to permit a worker to fall through, any employee pushing broke down the hole shall wear a safety belt and lanyard. The lanyard shall be fastened in such a manner that it is impossible for the person to fall into the pulper.*

**(C)** *An alarm bell or a flashing light shall be actuated before dropping material through the broke hole.*

**(m) Feeder belt.** *A feeder belt or other effective device shall be provided for starting paper through the calender stack.*

**(n) Steps.** *Steps or ladders of uniform rise and tread with nonslip surfaces shall be provided at each calender stack. Handrails and hand grips shall be provided at each calender stack in accordance with Subdivision D, Walking-Working Surfaces.*

**(o) Grounding.** *All calender stacks and spreader bars shall be grounded in accordance with Subdivision S, Electrical, as protection against shock induced by static electricity.*

**(p) Sole plates.** *All exposed sole plates between dryers, calenders, reels, and rewinders shall have a nonskid surface.*

**(q) Nip points.** *The hazard of the nip points on all calender rolls shall be eliminated or minimized by means of an effective barrier device, or by feeding the paper into the rolls by means of a rope carrier, air jets, or hand feeding devices.*

**(r) Scrapers.** *Alloy steel scrapers with pullthrough blades approximately 3 by 5 inches in size shall be used to remove "scabs" from calender rolls.*

**(s) Illumination.** *Permanent lighting shall be installed in all areas where employees are required to make machine adjustments and sheet transfers in accordance with American National Standard ANSI/IES RP-1990.*

**(t) Control panels.** *All control panel handles and buttons shall be protected from accidental contact.*

**(u) Lifting reels.**

**(A)** *The reels shall stop rotating before being lifted from bearings.*

**(B)** *All lifting equipment (clamps, cables, and slings) shall be maintained in a safe condition and inspected regularly.*

**(C)** *Reel shafts with square block ends shall be guarded.*

**(v) Feeder belts.** *Feeder belts, carrier ropes, air carriage, or other equally effective means shall be provided for starting paper into the nip or drum-type reels.*

**(w) In-running nip.**

**(A)** *Where the nipping points of all drum winders and rewinders is on the operator's side, it shall be guarded by barrier guards interlocked with the drive mechanism.*

**(B)** *A zero speed switch or locking device shall be installed to prevent the guard from being raised, lowered, or removed while the roll is turning.*

**(x) Core collars.** *Set screws for securing core collars to winding and unwinding shafts shall not protrude above the face of the collar. All edges of the collar with which an operator's hand comes in contact shall be beveled to remove all sharp corners.*

**(y) Slitter knives.** *Slitter knives shall be guarded so as to prevent accidental contact. Carriers shall be provided and used for transportation of slitter knives.*

**(z) Winder shaft.** *The winder shall have a guide rail to align the shaft for easy entrance into the opened rewind shaft bearing housings.*

**(aa) Handling rolls, winders and core shafts.** *Mechanical handling equipment shall be provided for handling rolls, winder shafts, and core shafts that are too heavy for safe manual handling based on the NIOSH Work Practice Guide for Manual Lifting – 1981.*

**(bb) Winder area.** *A nonskid surface shall be provided in front of the winder to prevent accidental slipping.*

**(cc) Radiation.** *Special standards regarding the use of radiation equipment shall be posted and followed as required by §1910.1096, Ionizing Radiation, in Subdivision Z.*

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## **(13) Finishing Room.**

**(a) Cleaning rolls.** *Rolls shall be cleaned only on the outrunning side.*

**(b) Emergency stops.** *Electrically or manually operated quick power disconnecting devices, interlocked with braking action, shall be provided on all operating sides of the machine within easy reach of all employees. These devices shall be tested by making use of them when stopping the machine.*

**(c) Core collars.** *The requirements of section (12)(x) of this rule, and the requirements in Subdivision O, Machinery and Machine Guarding, shall apply.*

**(d) Elevators.** *These shall be in accordance with American National Standard ANSI/ASME A17.1-1990.*

**(e) Control panels.** *The requirements of section (12)(t) of this rule shall apply.*

### **(f) Guillotine-type cutters.**

**(A)** *Each guillotine-type cutter shall be equipped with a control which requires the operator and helper, if any, to use both hands to engage the clutch when operated from within reach of blade.*

**(B)** *Each guillotine-type cutter shall be equipped with a nonrepeat device.*

**(C)** *Carriers shall be provided and used for transportation of guillotine-type cutter knives.*

### **(g) Rotary cutter.**

**(A)** *On single-knife machines a guard shall be provided at a point of contact to the knife.*

**(B)** *On duplex cutters the protection required for single-knife machines shall be provided for the first knife, and a hood shall be provided for the second knife.*

**(C)** *Safe access shall be provided to the knives of a rotary cutter by means of catwalks with nonslip surfaces, railings, and toeboards in accordance with Subdivision D, Walking-Working Surfaces.*

**(D)** *A guard shall be provided for the spreader or squeeze roll at the nip side on sheet cutters.*

**(E)** *Electrically or manually operated quick power disconnecting devices with adequate braking action shall be provided on all operating sides of the machine within easy reach of all operators.*

**(F)** *The outside slitters shall be guarded.*

**(h) Platers.**

**(A)** A guard shall be arranged across the face of the rolls to serve as a warning that the operator's hand is approaching the danger zone.

**(B)** A quick power disconnecting device shall be installed on each machine within easy reach of the operator.

**(i) Finishing room rewinders.**

**(A)** The nipping points of all drum winders and rewinders located on the operator's side shall be guarded by either automatic or manually operated barrier guards of sufficient height to protect fully anyone working around them. The barrier guard shall be interlocked with the drive mechanism to prevent operating above jog speed without the guard in place. A zero speed switch should be installed to prevent the guard from being raised while the roll is turning.

**(B)** A nonskid surface shall be provided in front of the rewinder to prevent an employee from slipping in accordance with section (3)(d) of this rule.

**(C)** Mechanical lifting devices shall be provided for placing and removing rolls from the machine.

**(j) Control panels.** The requirements of section (12)(t) of this rule shall apply.

**(k) Roll-type embosser.** The nipping point located on the operator's side shall be guarded by either automatic or manually operated barrier guards interlocked with the drive.

**(l) Converting machines.**

**(A)** When using a crane or hoist to place rolls into a backstand and the operator cannot see both ends of the backstand, appropriate means will be implemented to eliminate hazards involved. The operator shall ascertain that rolls are properly seated at winder stand or at roll arms before he or she disengages the hooks.

**(B)** All power closing sections shall be equipped with an audible warning system which will be activated when closing the sections.

**(C)** Slitters, slotters, and scorers not in use shall be properly stored so as not to create a hazard.

**(D)** Mechanical handling equipment shall be provided for handling rolls or devices that are too heavy for safe manual handling based on the NIOSH Work Practice Guide for Manual Lifting – 1981.

**(E) Sheer and pinch points.** Sheer and pinch points at the feed mechanism shall be color-coded orange and/or identified by signs in accordance with Subdivision J, General Environmental Controls.

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**(m) Sorting and counting tables.**

**(A)** Tables shall be smooth and free from splinters, with edges and corners rounded.

**(B)** Paddles shall be smooth and free from splinters.

**(n) Roll splitters.** The nip point and cutter knife shall be guarded by either automatic or manually operated barrier guards.

**(o) Corrugators.**

**(A)** Rails of rail-mounted devices such as roll stands shall be flush with the adjacent floor, and so installed to provide a minimum of 18 inches clearance between the equipment and walls or other fixed objects.

**(B)** All corrugating and pressure rolls shall be equipped with appropriately designed and installed threading guides so as to prevent contact with the infeed nip of the various rolls by the operator.

**(C)** Lower elevating conveyor belt rolls on the single facer bridge shall have a minimum nip clearance of 4 inches.

**(D)** Web shears at the discharge end of the double facer shall be equipped with barrier-type guards.

**(E)** Slitter stations not in use shall be disconnected from the power source by positive means.

**(F)** The adhesive system shall be so designed and installed as to keep fumes and airborne dust within limits in accordance with OAR 437-002-0382, Oregon Rules for Air Contaminants, in Subdivision Z.

**(14) Materials Handling.**

**(a) Hand trucks.** No person shall be permitted to ride on a powered hand truck unless it is so designed by the manufacturer. A limit switch shall be on operating handle – 30° each way from a 45° angle up and down.

**(b) Power trucks.** Power trucks shall comply with Subdivision N, Material Handling and Storage. Adequate ventilation shall be provided and the trucks properly maintained, so that dangerous concentrations of carbon monoxide cannot be generated, especially in warehouses or other isolated areas of a plant.

**(c) Carton-stitching machine.** The carton-stitching machine shall be guarded to prevent the operator from coming in contact with the stitching head.

**(d) Banding of skids, cartons, cases, etc.** Banders and helpers shall wear eye protection equipment in accordance with section (3)(c) of this rule.

**(e) Unloading cars or trucks.**

**(A) Loading and unloading materials.** *Platforms with ladders or stairways shall be installed or alternative methods made available when needed so that workers may safely gain access to and perform work on the top of rail cars or trucks when ladders are not installed on such equipment.*

**(B)** *Where steel bands or wires are used in boxcars or trucks, all loaders and helpers shall wear eye protection in accordance with Subdivision I, Personal Protective Equipment.*

**(C)** *The construction and use of bridge or dock plates shall conform to the requirements of American National Standard B56.1-1988.*

**(D)** *Flag signals, derails, or other protective devices shall be used to protect workers during switching operations. The blue flag policy shall be invoked according to section (4)(j) of this rule.*

**Stat. Auth.:** ORS 654.025(2) and ORS 656.726(4).

**Stats. Implemented:** ORS 654.001 to 654.295.

**Hist:** OR-OSHA Admin. Order 7-1994, f. 11/4/94, ef. 1/3/95.

OR-OSHA Admin. Order 3-1998, f. 7/7/98, ef. 7/7/98.

OR-OSHA Admin. Order 2-2001, f. 2/5/01, ef. 2/5/01.

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**Appendix A (Non-Mandatory)**

**A. Group Lockout/Tagout.**

*The group lockout/tagout procedures described in the Pulp and Paper standard require each authorized employee to be in control of potentially hazardous energy release during their servicing/maintenance work assignments. Under most circumstances, where servicing/maintenance is to be conducted during only one shift by an individual or a small number of persons working together, the installation of each individual's lockout/tagout device upon each energy isolating device would not be a burdensome procedure. However, when many energy sources or many persons are involved, and/or the procedure is to extend over more than one shift, (possibly several days, or weeks) consideration must be given to the implementation of a lockout/tagout procedure that will ensure the safety of the employees involved and will provide for each individual's control of the energy hazards. The following procedures are presented as examples to illustrate the implementation of a group lockout/tagout procedure involving many energy isolating devices and/or many servicing/maintenance personnel. They illustrate several alternatives for having authorized employees affix personal lockout/tagout devices in a group lockout/tagout setting. These examples are not intended to represent the only acceptable procedures for conducting group operations.*

**1. Definitions.** *Various terms used in the examples are defined below.*

- a. Primary Authorized Employee** *is the authorized employee who exercises overall responsibility for adherence to the company lockout/tagout procedure. (See §1910.147 (f)(3)(ii)(A).)*
- b. Principal Authorized Employee** *is an authorized employee who oversees or leads a group of servicing/maintenance workers (e.g., plumbers, carpenters, electricians, metal workers, mechanics).*
- c. Job-Lock** *is a device used to ensure the continuity of energy isolation during a multi-shift operation. It is placed upon a lockbox. A key to the job-lock is controlled by each assigned primary authorized employee from each shift.*
- d. Job-Tag with Tab** *is a special tag for tagout of energy isolating devices during group lockout/tagout procedures. The tab of the tag is removed for insertion into the lockbox. The company procedure would require that the tagout job-tag cannot be removed until the tab is rejoined to it.*
- e. Master Lockbox** *is the lockbox into which all keys and tabs from the lockout or tagout devices securing the machine or equipment are inserted and which would be secured by a "job-lock" during multi-shift operations.*
- f. Satellite Lockbox** *is a secondary lockbox or lockboxes to which each authorized employee affixes his/her personal lock or tag.*

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- g. Master Tag is a document used as an administrative control and accountability device.*
- h. Work Permit is a control document which authorizes specific tasks and procedures to be accomplished.*
- 2. Organization.** *A group lockout/tagout procedure might provide the following basic organizational structure:*
- a. A primary authorized employee would be designated. This employee would exercise primary responsibility for implementation and coordination of the lockout/tagout of hazardous energy sources, for the equipment to be serviced.*
- b. The primary authorized employee would coordinate with equipment operators before and after completion of servicing and maintenance operations which require lockout/tagout.*
- c. A verification system would be implemented to ensure the continued isolation and de-energization of hazardous energy sources during maintenance and servicing operations.*
- d. Each authorized employee would be assured of his/her right to verify individually that the hazardous energy has been isolated and/or de-energerized.*
- e. When more than one crew, craft, department, etc., is involved, each separate group of servicing/maintenance personnel would be accounted for by a principal authorized employee from each group. Each principal employee is responsible to the primary authorized employee for maintaining accountability of each worker in that specific group in conformance with the company procedure. No person may sign on or sign off for another person, or attach or remove another person's lockout/tagout device, unless the provisions of the exception to §1910.147(e)(3) are met.*
- 3. Examples of Procedures for Group Lockout/Tagout.** *Examples are presented for the various methods of lockout/tagout using lockbox procedures. An example of an applicable method for complex process equipment is also presented.*
- a. The following procedures address circumstances ranging from a small group of servicing/maintenance employees during a one-shift operation to a comprehensive operation involving many workers over a longer period.*
- (1) Type A.** *Each authorized employee places his/her personal lock upon each energy isolating device and removes it upon departure from that assignment. Each authorized employee verifies or observes the de-energization of the equipment.*
- (2) Type B.** *Under a lockbox procedure, a lock is placed upon each energy isolation device after de-energization. The key(s) are then placed into a lockbox. Each authorized employee assigned to the job then affixes his/her personal lock to the lockbox. As a member of a group, each assigned authorized employee verifies that all hazardous energy has been rendered safe. The lockout/tagout devices cannot be removed or the energy isolating device turned on until the appropriate key is matched to its lock.*

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- (3) **Type C.** After each energy isolating device is locked/tagged out and the keys placed into a master lockbox, each servicing/maintenance group “principal” authorized employee places his/her personal lock upon the master lockbox. Then each principal authorized employee inserts his/her key into a satellite lockbox to which each authorized employee in that specific group affixes his/her personal lock. As a member of a group, each assigned authorized employee verifies that all hazardous energy has been rendered safe. Only after the servicing/maintenance functions of the specific subgroup have been concluded and the personal locks of the respective employees have been removed from the satellite lockbox can the principal authorized employee remove his/her lock from the master lockbox.
- (4) **Type D.** During operations to be conducted over more than one shift (or even many days or weeks) a system such as described here might be used. Single locks/tags are affixed upon a lockbox by each authorized employee as described at Type B or Type C above. The master lockbox is first secured with a job-lock before subsequent locks by the principal authorized employees are put in place on the master lockbox. The job-lock may have multiple keys if they are in the sole possession of the various primary authorized employees (one on each shift). As a member of a group, each assigned authorized employee verifies that all hazardous energy has been rendered safe. In this manner, the security provisions of the energy control system are maintained across shift changes while permitting reenergization of the equipment at any appropriate time or shift.

**Stat. Auth.:** ORS 654.025(2) and 656.726(4).

**Stats. Implemented:** ORS 654.001 to 654.295.

**Hist:** OR-OSHA Admin. Order 7-1994, f. 11/4/94, ef. 1/3/95.



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**Appendix B (Non-Mandatory)**

**Lockout/Tagout Permit Procedure Model Procedure**

**I. Policy**

*It is the policy of \_\_\_\_\_ to provide a safe and healthful work environment. All individuals performing work where they may be exposed to the unexpected or unwanted start-up of equipment or the release of hazardous energy, are required to be adequately trained and protected from such hazards.*

*This permit lockout/tagout procedure applies to all individuals or groups requiring lockout/tagout protection while performing work on specific equipment for which there is no established written procedure available. Each Department Manager is responsible for implementing and enforcing these procedures for all areas and equipment under his/her control.*

**II. Purpose**

*The purpose of this permit procedure is to ensure that all appropriate steps are taken to control hazardous energies in the absence of a formal written procedure. The intent is to prevent injury or death from exposure to hazardous energies.*

**III. Definitions**

***Affected Employees** are operators and others who need to be notified of work being performed, equipment being locked out, or energy being restored in their work area or area of responsibility, but who have not locked out.*

***Authorized Employees** are employees assigned to perform work that requires protection under the lockout/tagout policy, and who have locked out.*

***Hazardous Energy** means any level of energy present that can cause unexpected or unwanted movement, activation, flow, or exposure that could result in injury. Sources may include:*

- 1) **Electrical:** Alternating and direct current sources, static electricity or stored electrical energy in devices such as capacitors.*
- 2) **Chemical:** Energy released through direct contact or by combining chemical substances.*
- 3) **Thermal:** Heat generated from electrical, combustion, chemical, mechanical (friction), or nuclear sources.*
- 4) **Pneumatic:** Gaseous systems operating at positive (compressed) or negative (vacuum) pressures.*

- 5) **Radiation:** Ionizing sources including alpha, beta, neutron, gamma, and x-ray. Non-ionizing sources including ultraviolet, infrared, microwave and visible light.
- 6) **Hydraulic:** Fluids pressurized to perform work.
- 7) **Mechanical Potential:** Movement of a body or an object by gravity, spring or striking force.

**Lockout Overseer** means the qualified person designated by the company to verify compliance with requirements of the lockout procedure.

**Lockbox** means the device used to secure the primary lock key(s) used in a group lockout procedure.

**Personal Lock** means the locking device used by an employee to secure potentially hazardous energy for his/her personal protection.

**Primary Lock (Lockbox Lock)** means the locking device used to lock out each energy source in a group lockout procedure.

**Responsible Person** means an employee thoroughly knowledgeable with the equipment to be locked out, and designated by the company to place primary locks on energy sources for group lockout.

**Secondary Lock** means a personal lock used to secure a lockbox in a group lockout procedure.

**Transfer of Custody** means the transfer of responsibility from one Responsible Person and/or Lockout Overseer to another at the end of his/her work period.

#### **IV. General Requirements**

The lockout/tagout rule requires procedures be developed, documented and utilized for the control of potentially hazardous energy. The lockout/tagout permit procedure provides employees the means to develop and document energy control procedures as they are needed. By following the steps outlined in this policy, all requirements for utilizing a written energy control procedure will be met.

**Exception:** The procedure need not be documented for a particular machine or equipment, when all of the following elements exist:

- 1) The machine or equipment has no potential for stored or residual energy or reaccumulation of stored energy after shut down which could endanger employees;
- 2) the machine or equipment has a single energy source which can be readily identified and isolated;
- 3) the isolation and locking out of that energy source will completely de-energize and deactivate the machine or equipment;

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- 4) *the machine or equipment is isolated from that energy source and locked out during servicing or maintenance;*
  - 5) *a single lockout device will achieve a locked-out condition;*
  - 6) *the lockout device is under the exclusive control of the authorized employee performing the servicing or maintenance;*
  - 7) *the servicing or maintenance does not create hazards for other employees; and*
  - 8) *the employer, in utilizing this exception, has had no accidents involving the unexpected activation or re-energization of the machine or equipment during servicing or maintenance.*
- A. *If a written procedure is required but not available, the employees will not start work until a lockout permit is completed and approved.*
  - B. *The department where the work is to be performed is responsible for assigning a Lockout Overseer to verify compliance with the permit procedure requirements.*
  - C. *One person, thoroughly knowledgeable with the equipment and the hazardous energies involved will be designated as the Responsible Person.*
  - D. *The Lockout Overseer will accompany the Responsible Person while completing the permit requirements.*
  - E. *Each personal lock shall be labeled identifying the worker.*
  - F. *The completed permit will be available at the job site or at the group lockout device while employees are working on the equipment.*

## **V. Additional Requirements for Group Lockout**

- A. *The Responsible Person will place the first “secondary lock” on the lockbox.*
- B. *The Lockout Overseer will place the second “secondary lock” on the lockbox.*
- C. *Each individual has the right to verify the lockout of all energy sources and/or to place his/her own personal lock on each lockout point.*
- D. *Each authorized employee must have his or her personal lock on the lockbox while working on the affected equipment.*
- E. *Whenever there is a transfer of custody, the replacement(s) will verify that the primary locks are properly placed.*

- F. When the work is complete and all other secondary locks are removed, the Responsible Person will verify that the area is clear before removing his/her secondary lock and primary locks.*
- G. When contractors use a lockbox, the contractor supervisor will be a Lockout Overseer.*
- H. Lockbox Locks are to be unique primary locks and so identified.*

**VI. Permit Procedure**

*The LOCKOUT PERMIT (see attachment A) is completed in the following steps:*

- A. Determine the type of lockout to be performed (group lockout or individual lockout) and check the appropriate box on the permit. When group lockout is used the Responsible Person and Lockout Overseer, in addition to developing the lockout procedure, will also place the primary locks and verify energy isolation.*
- B. Fill in the date that the permit is issued.*
- C. Name or describe the equipment or system to be locked out.*
- D. Determine the scope of the work to be done, and indicate this on the permit. (For example: To replace carbon rings on dryer cans #1 through #25.)*
- E. Name the Lockout Overseer and Responsible Person on the permit. (Please Print)*
- F. Identify the affected employees to be notified before the lockout begins and those to be notified before energy is restored.*
- G. If equipment is being locked out at this time, verify the equipment has been shut down using proper shutdown procedures. List any special procedures to be used for shutdown or start up.*
- H. Indicate the type(s) of potential hazardous energy which may be present.*
- I. Identify each energy source, equipment identification, lockout location and proper status. See example below.*
- J. Identify how energy isolation is verified, and perform test. (i.e. start test, drain valve, pressure gauge, voltage check).*
- K. If the LOCKOUT PERMIT is used to perform a group lockout, the initials of the Lockout Overseer and Responsible Person are required to indicate each isolation point has been properly locked out and energy isolation verified.*

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- L. If the LOCKOUT PERMIT is used for personal lockout, each Authorized Employee shall initial the identified energy sources after each has been locked/tagged and energy isolation verified.*
  
- M. Each Authorized Employee will sign-on after they place their locks on the equipment or group lockout device, and sign-off after they remove their locks.*
  
- N. Return To Service steps are checked after each is completed. (Work Area Inspected, Affected Employees Notified, Locks Removed, Energy Restored, Control Returned to Operator.)*
  
- O. The name of the person the permit is returned to.*
  
- P. Permits shall be held by the company for a minimum of 6 months from the date of issue.*

**Stat. Auth.:** ORS 654.025(2) and 656.726(4).  
**Stats. Implemented:** ORS 654.001 to 654.295.  
**Hist:** OR-OSHA Admin. Order 7-1994, f. 11/4/94, ef. 1/3/95.

<i>Energy Source</i>	<i>Equip. ID</i>	<i>Lockout Location</i>	<i>Status</i>	<i>Resp. Person</i>	<i>Lockout Overseer</i>	<i>Tested</i>
<i>160# Steam Header</i>	<i>V1301-B</i>	<i>#3 P.M. Basement</i>	<i>Close, Lock, Drain</i>	<i>J.D.</i>	<i>S.Q.</i>	<i>X</i>
<i>Electrical</i>	<i>Str.#1234</i>	<i>Basement Load Center</i>	<i>Close, Lock, Check Voltage</i>	<i>J.D.</i>	<i>S.Q.</i>	<i>X</i>

