

system control station, or by some other competent person, of the bypass dampers, air-tempering louvers, discharge mechanism, and other dryer system equipment.

**§ 77.309-1 Control stations; location.**

Thermal dryer system control stations constructed after June 30, 1971, shall be installed at a location which will give to the operator of the control station the widest field of visibility of the system and equipment.

**§ 77.310 Control panels.**

(a) All thermal dryer system control panels constructed after June 30, 1971 shall be located in an area which is relatively free of moisture and dust and shall be installed in such a manner as to minimize vibration.

(b) A schematic diagram containing legends which show the location of each thermocouple, pressure tap, or other control or gaging instrument in the drying system shall be posted on or near the control panel of each thermal drying system.

(c) Each instrument on the control panel shall be identified by a name-plate or equivalent marking.

(d) A plan to control the operation of each thermal dryer system shall be posted at or near the control panel showing a sequence of startup, normal shutdown, and emergency shutdown procedures.

**§ 77.311 Alarm devices.**

Thermal dryer systems shall be equipped with both audible and visual alarm devices which are set to operate when safe dryer temperatures are exceeded.

**§ 77.312 Fail safe monitoring systems.**

Thermal dryer systems and controls shall be protected by a fail safe monitoring system which will safely shut down the system and any related equipment upon failure of any component in the dryer system.

**§ 77.313 Wet-coal feedbins; low-level indicators.**

Wet-coal bins feeding thermal drying systems shall be equipped with both audible and visual low-coal-level indicators.

**§ 77.314 Automatic temperature control instruments.**

(a) Automatic temperature control instruments for thermal dryer system shall be of the recording type.

(b) Automatic temperature control instruments shall be locked or sealed to prevent tampering or unauthorized adjustment. These instruments shall not be set above the maximum allowable operating temperature.

(c) All dryer control instruments shall be inspected and calibrated at least once every 3 months and a record or certificate of accuracy, signed by a trained employee or by a servicing agent, shall be kept at the plant.

**§ 77.315 Thermal dryers; examination and inspection.**

Thermal dryer systems shall be examined for fires and coal-dust accumulations if the dryers are not restarted promptly after a shutdown.

**Subpart E—Safeguards for Mechanical Equipment**

**§ 77.400 Mechanical equipment guards.**

(a) Gears; sprockets; chains; drive, head, tail, and takeup pulleys; flywheels; couplings; shafts; sawblades; fan inlets; and similar exposed moving machine parts which may be contacted by persons, and which may cause injury to persons shall be guarded.

(b) Overhead belts shall be guarded if the whipping action from a broken line would be hazardous to persons below.

(c) Guards at conveyor-drive, conveyor-head, and conveyor-tail pulleys shall extend a distance sufficient to prevent a person from reaching behind the guard and becoming caught between the belt and the pulley.

(d) Except when testing the machinery, guards shall be securely in place while machinery is being operated.

**§ 77.401 Stationary grinding machines; protective devices.**

(a) Stationary grinding machines other than special bit grinders shall be equipped with:

(1) Peripheral hoods (less than 90° throat openings) capable of withstanding the force of a bursting wheel.

(2) Adjustable tool rests set as close as practical to the wheel.

(3) Safety washers.

(b) Grinding wheels shall be operated within the specifications of the manufacturer of the wheel.

(c) Face shields or goggles, in good condition, shall be worn when operating a grinding wheel.

**§ 77.402 Hand-held power tools; safety devices.**

Hand-held power tools shall be equipped with controls requiring constant hand or finger pressure to operate the tools or shall be equipped with friction or other equivalent safety devices.

**§ 77.403 Mobile equipment; falling object protective structures (FOPS).**

(a) When necessary to protect the operator of the equipment, all rubber-tired or crawler-mounted self-propelled scrapers, front-end loaders, dozers, graders, loaders, and tractors, with or without attachments, that are used in surface coal mines or the surface work areas of underground coal mines shall be provided with substantial falling object protective structures (FOPS). FOPS which meet the requirements of the Society of Automotive Engineers (SAE) Standard J 231 shall be considered to be a "substantial" FOPS. An authorized representative of the Secretary may approve a FOPS which provides protection equivalent to SAE J 231.

(b) When necessary to protect the operator of the equipment, forklift or powered industrial trucks shall be provided with substantial FOPS. Such FOPS shall meet the requirements of the State of California, Division of Industrial Safety, General Safety Orders, Register 72, Number 6, February 8, 1972, Article 25, Section 3655—"Overhead Guards for High-Lift Rider Trucks."

(Sec. 101(a), Federal Coal Mine Health and Safety Act of 1969, as amended (83 Stat. 745; 30 U.S.C. 811(a))

[39 FR 24007, June 28, 1974]

**§ 77.403a Mobile equipment; rollover protective structures (ROPS).**

(a) All rubber-tired or crawler-mounted self-propelled scrapers, front-end loaders, dozers, graders, loaders,

and tractors, with or without attachments, that are used in surface coal mines or the surface work areas of underground coal mines shall be provided with rollover protective structures (hereinafter referred to as ROPS) in accordance with the requirements of paragraphs (b) through (f) of this section, as applicable.

(b) *Mobile equipment manufactured on and after September 1, 1974.* All mobile equipment described in paragraph (a) of this section manufactured on and after September 1, 1974 shall be equipped with ROPS meeting the requirements of the Department of Labor specified in §§ 1926.1001 and 1926.1002 of Part 1926, Title 29, Code of Federal Regulations—Safety and Health Regulations for Construction.

(c) *Mobile equipment manufactured prior to September 1, 1974.* All mobile equipment described in paragraph (a) of this section manufactured prior to September 1, 1974 shall be equipped with ROPS meeting the requirements of paragraphs (d) through (f) of this section, as appropriate, no later than the dates specified in paragraphs (1), (2), and (3) of this paragraph (c), unless an earlier date is required by an authorized representative of the Secretary under paragraph (c)(4) of this section:

(1) Mobile equipment manufactured between July 1, 1971, and September 1, 1974, shall be equipped with ROPS no later than March 1, 1975.

(2) Mobile equipment manufactured between July 1, 1970, and June 30, 1971, shall be equipped with ROPS no later than July 1, 1975.

(3) Mobile equipment manufactured between July 1, 1969, and June 30, 1970, shall be equipped with ROPS no later than January 1, 1976.

(4) Irrespective of the time periods specified in paragraph (c) (1) through (3) of this section an authorized representative of the Secretary may require such mobile equipment to be equipped with ROPS at an earlier date when necessary to protect the operator of the equipment under the conditions in which the mobile equipment is, or will be operated. The authorized representative of the Secretary shall in writing advise the operator that the equipment shall be equipped with a