**Section 220.30 Thermal Dryers**

a) Thermal dryers; general.

All dryer systems used for drying coal at high temperatures, hereinafter referred to as thermal dryers, including without limitation, rotary dryers, continuous carrier dryers, vertical tray, and cascade dryers, multilouver dryers, suspension or flash dryers, and fluidized bed dryers, shall be maintained and operated in accordance with the provisions of Section 220.30(b) through (f).

b) Dryer heating units; operation.

1) Dryer heating units shall be operated to provide reasonably complete combustion before heated gases are allowed to enter hot gas inlets.

2) Dryer heating units which are fired by pulverized coal, shall be operated and maintained in accordance with the recommended standards set forth in the National Fire Protection Association Handbook, 12th Edition, Section 9, "Installation of Pulverized Fuel Systems," 1962.

c) Bypass stacks.

Thermal dryer systems shall include a bypass stack, relief stack, or individual discharge stack provided with automatic venting which will permit gases from the dryer heating unit to bypass the heating chamber and vent to the outside atmosphere during any shutdown operation.

d) Hot gas inlet chamber dropout doors.

Thermal dryer systems which employ a hot gas inlet chamber shall be equipped with drop-out doors at the bottom of the inlet chamber or with other effective means which permit coal, fly-ash, or other heated material to fall from the chamber.

e) Explosion release vents.

Drying chambers, dry-dust collectors, ductwork connecting dryers to dust collectors, and ductwork between dust collectors and discharge stacks shall be protected with explosion release vents which open directly to the outside atmosphere, and all such vents shall be:

1) Hinged to prevent dislodgment;

2) Designed and constructed to permit checking and testing by manual operation; and

3) Equal in size to the cross-sectional area of the collector vortex finder where used to vent dry dust collectors.

f) Access to drying chambers, hot gas inlet chambers and ductwork; installation and maintenance.

Drying chambers, hot gas inlet chambers and all ductwork in which coal dust may accumulate shall be equipped with tight sealing access doors which shall remain latched during dryer operation to prevent the emission of coal dust and the loss of fluidizing air.

g) Fire protection.

Based on the need for fire protection measures in connection with the particular design of the thermal dryer, an authorized representative of the Department may require any of the following measures to be employed:

1) Water sprays automatically actuated by rises in temperature to prevent fire, installed inside the thermal dryer systems, and such sprays shall be designed to provide for manual operation in the event of power failure.

2) Fog nozzles, or other no less effective means, installed inside the thermal dryer systems to provide additional moisture or an artificial drying load within the drying system when the system is being started or shut down.

3) The water system of each thermal dryer shall be interconnected to a supply of compressed air which permits constant or frequent purging of all water sprays and fog nozzles or other no less effective means of purging shall be provided.

h) Thermal dryers; location and installation; general.

1) All thermal dryer systems erected or installed at any coal mine shall be located at least one hundred (100) feet from any underground coal mine opening, and one hundred (100) feet from any surface installation where the heat, sparks, flames, or coal dust from the system might cause a fire or explosion.

2) All thermal dryer systems erected or installed may be covered by roofs; however, such systems shall not be otherwise enclosed unless necessary to protect the health and safety of persons employed at the mine. Where such systems are enclosed, they shall be located in separate fireproof structures of heavy construction with explosion pressure release devices (such as hinged wall panels, window sashes, or louvers), which provide at least one (1) square foot of area for each eighty (80) cubic feet of space volume and which are distributed as uniformly as possible throughout the structure.

i) Structures housing other facilities; use of partitions.

All thermal dryer systems installed in any structure which also houses a tipple, cleaning plant, or other operating facility shall be separated from all other working areas of such structure by a substantial partition capable of providing greater resistance to explosion pressures than the exterior wall or walls of the structure. The partition shall also include substantial, self-closing fire doors at all entrances to the areas adjoining the dryer system.

j) Visual check of system equipment.

Frequent visual checks shall be made by the operator of the thermal dryer system control station, or by some other qualified person, of the bypass dampers, air-tempering louvers, discharge mechanism, and other dryer system equipment.

k) Control stations; location.

All thermal dryer system control stations 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.

l) Control panels.

1) All thermal dryer system control panels 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.

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

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

4) 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 procedure.

m) 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.

n) 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.

o) 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.

p) Automatic temperature control instruments.

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

2) 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.

3) All dryer control instruments shall be inspected and calibrated at least once (1) every three (3) months and a record or certificate of accuracy, signed by a person qualified to inspect and calibrate such instruments shall be kept at the plant.

q) 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.