

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE B: AIR POLLUTION
CHAPTER II: ENVIRONMENTAL PROTECTION AGENCY

PART 280
VISIBLE EMISSIONS FROM COKE OVEN BATTERIES:
PROCEDURES FOR DETERMINING COMPLIANCE

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AUTHORITY: Authorized by and implementing Sections 4(b), 4(e), 4(g), 4(m), 30 and 39(a) of the Environmental Protection Act, (Ill. Rev. Stat. 1979, ch. 111 1/2, par. 1004(b), 1004(e), 1004(g), 1004(m), 1030 and 1039(a)) and Rule 203(d)(5)(B) of the Illinois Pollution Control Board Rules and Regulations, Chapter 2: Air Pollution.

SOURCE: Adopted at 5 Ill. Reg. 4886, effective April 21, 1981.

Section 280.101 Preamble and Statutory Authority

- a) On September 6, 1979, the Pollution Control Board adopted a Final Order in its regulatory proceeding R780 which amended its previously adopted particulate emission limitations for steel manufacturing processes. Included in the R780 regulations are limitations of visible emissions from the following by-product coke plant emission sources and/or operations:
- Rule 203(d)(5)(B)(ii) -- charging operations
 - Rule 203(d)(5)(B)(iv) -- coke oven doors

 - Rule 203(d)(5)(B)(v) -- coke oven lids
 - Rule 203(d)(5)(B)(vi) -- coke oven offtake piping
- b) The regulations specify maximum time periods during which visible emissions are permitted during charging operations and maximum percentages of doors, lids, and offtake piping that are permitted to emit visible emissions. The purpose of this Rule is to establish procedures by which observers are able to determine the compliance status of byproduct coke oven batteries subject to Rules 203(d)(5)(B)(ii), 203(d)(5)(B)(iv), 203(d)(5)(B)(v), and 203(d)(5)(B)(vi).
- c) This Rule is promulgated pursuant to authority conferred on the Environmental Protection Agency by Sections 4(b), 4(e), 4(g), 4(m), 30 and 39(a) of the Environmental Protection Act, Ill.

Rev. Stat., ch. 111 1/2, pars. 1004(b), (e), (g) and (m), 1030 and 1039(a), and by Rule 203(d) (5) (B) the Illinois Pollution Control Board Rules and Regulations, Chapter 2: Air Pollution.

Section 280.102 Definitions

The following definitions shall apply to this rulemaking:

Bench: a platform running along both the coke and pusher sides of a coke oven battery used to support machinery and coke oven workers.

Buckstays: vertical Ibeams located on both ends of the walls between coke ovens utilized to hold together coke oven brickwork.

Charge Port: an opening in a roof of a coke oven through which coal is introduced.

Charge Port Lids: circular lids covering charge ports which are removed when coal is charged to a coke oven.

Charging Operation: the introduction of coal into a coke oven, beginning with the first introduction of coal into the oven and ending with the replacement of the final charge port lid.

Chuck Door: a door located on a pushside door of a coke oven which is opened to allow a leveler bar to enter a coke oven and level the coal in the oven.

Coke Oven Battery: a series of jointly operated, sløtype coke ovens, the operation of which results in destructive distillation of coal for conversion to coke.

Coke Oven Door: vertical face of a coke oven between the bench, the top of the battery, and two adjacent buckstays. The coke oven door includes, but is not limited to, the door, chuck door, door seal, door jamb, and refractory.

Dampered: condition of an oven ready to be pushed in which a valve between the standpipe assembly and collecting main is closed.

Door Jamb: one piece cast iron frame with a machined face which receives a coke oven door.

Door Seal: part of a coke oven door which contacts door jamb to effect a gas tight seal.

Jumper Pipe: U-shaped pipe attached to the larry car at the farthest charge port from the offtake piping which connects the charge port to an adjacent oven.

Larry Car: a vehicle which transfers and introduces coal into a

coke oven.

Offtake Piping: a set of piping extending from the connection on top of a coke oven to, and including, the connection of a gas collector main. Also known as a gooseneck or standpipe.

Pusher: machine which pushes hot coke out of a coke oven.

Quench car: vehicle into which hot coke is pushed from coke oven.

Refractory: all of the brickwork in a coke oven battery.

Topside: the top of a coke oven battery including, but not limited to, the charge ports and charge port lids.

Section 280.103 Applicability

The procedures contained herein shall apply to all coke oven batteries located within the State of Illinois. In evaluating visible emissions from coke oven batteries, observers shall take into account all such emissions except emissions of water vapor and "mere wisps of smoke" which have been specifically exempted by the Pollution Control Board, In the Matter of: Particulate Emissions from Steel Mills, R7&10, Opinion of the Board at page 4 (January 10, 1980).

Section 280.104 Determination of Visible Emissions from Coke Oven Charging Operations

Compliance with the coke oven charging emission limitation contained in Rule 203(d)(5)(B)(ii) of the Illinois Pollution Control Board Rules and Regulations, Chapter 2: Air Pollution shall be determined by the following procedure:

a) Observation Points.

Observations of charging emissions shall be made from any point or points on the topside of a coke oven battery from which an observer can obtain an unobstructed view of the charging operation.

b) Observations.

The observer shall time the visible emissions with a stopwatch while observing the charging operation. The observation shall commence as soon as coal begins to flow into the oven and shall terminate when the last charge port lid has been replaced. Simultaneous emissions from more than one emission point shall be timed and recorded as one emission and shall not be added individually to the total time.

c) Recording of Observations.

- 1) The observer shall determine and record the total number of seconds that charging emissions are visible during the charging of coal to the coke oven.
- 2) For each charge observed, the observer shall record the total number of seconds of visible emissions, the clock time for the initiation and completion of the charging operation, and the battery identification and oven number.
- 3) The observer shall not record any emissions observed after all charging port lids have been firmly seated following removal of the larry car, such as emissions occurring when a lid has been temporarily removed to permit spilled coal to be swept into the oven. The observer shall also not record emissions from the end oven on a coke oven battery which is unable to utilize a jumper pipe connection.

d) Interruptions of Observations.

In the event that observations of emissions from a charge are interrupted or there has been a malfunction in the charging operation, as defined by operating permits issued to the owner or operator of the coke oven battery pursuant to Rule 105, the data from that charge shall be invalidated and the observer shall note on his observation sheet the reason for invalidating the data. The observer shall then resume observation of the next consecutive charge or charges and continue until a set of five charges has been recorded.

e) Compliance Determination.

Compliance with Rule 203(d)(5)(B)(ii) shall be determined by summing the seconds of visible charging emissions observed during each of the five charges.

Section 280.105 Determination of Visible Emissions from Coke Oven Doors

Compliance with the coke oven door emission limitation contained in Rule 203(d)(5)(B)(iv) of the Illinois Pollution Control Board Rules and Regulations, Chapter 2: Air Pollution shall be determined by the following procedures:

a) Observation Points.

Observations of coke oven door emissions shall be made from a safe point beyond the clearance lines of the pusher and quench car where the observer can obtain an unobstructed view of each coke oven door.

b) Observations.

Each coke oven door shall be observed in sequence for only that period of time necessary to determine whether or not, at that time, there are visible emissions from any point of the coke

oven door while the observer walks along the side of the battery. The observer shall continue the procedure along the entire length of the battery on both sides.

c) Recording of Observations.

The observer shall record the battery identification, battery side, and identification number of each coke oven door emitting visible emissions.

d) Obstruction of Observer's View.

Before completing the traverse, or immediately thereafter, the observer shall attempt to reobserve the obstructed coke oven doors.

e) Compliance Determination.

Compliance with Rule 203(d)(5)(B)(iv) shall be determined by utilizing the following formula:

$$\frac{(\# \text{ of coke oven doors on operating ovens with visible emissions})}{(\# \text{ of coke oven doors} - (\# \text{ of obstructed on operating ovens}) \text{ coke oven doors})} \times 100 = 10\% \text{ or less}$$

Section 280.106 Determination of Visible Emissions from Charge Port Lids

Compliance with the charge port lid emission limitation contained in Rule 203(d)(5)(B)(v) of the Illinois Pollution Control Board Rules and Regulations, Chapter 2: Air Pollution shall be determined by the following procedure:

a) Observations.

Observations of any visible emissions other than charging emissions from the charge port lids shall be made and recorded during the period the observer walks the topside of a battery from one end to the other one time. Each oven shall be observed in sequence.

b) Recording of Observations.

The observer shall record the battery identification, the location of the lid emission on each oven, and whether an oven was dampered off.

c) Compliance Determination.

Compliance with Rule 203(d)(5)(B)(v) shall be determined by utilizing the following formula:

$$\frac{(\# \text{ of charging port lids on operating ovens with visible emissions})}{(\# \text{ number of charging port lids on operating ovens})} \times 100 = 5\% \text{ or less}$$

Section 280.107 Determination of Visible Emissions from Offtake Piping

Compliance with the offtake piping emission limitation contained in Rule 203(d)(5)(B)(vi) of the Illinois Pollution Control Board Rules and Regulations, Chapter 2: Air Pollutions shall be determined by the following procedure:

a) Observations.

Observations of any visible emissions from the offtake piping shall be made by traversing the topside of the battery near the centerline one time. During the traverse, the observer may stray from the centerline and walk as close as possible to the offtake piping in order to determine whether an observed emission is coming from the offtake piping. Each oven shall be observed in sequence.

b) Recording of Observations.

The observer shall record the battery identification, the points of offtake piping emission from any oven, and the oven number.

c) Compliance Determination.

Compliance with Rule 203(d)(5)(B)(vi) shall be determined by utilizing the following formula:

$$\frac{(\# \text{ of offtake pipes on operating ovens with visible emissions})}{(\# \text{ of offtake pipes on operating ovens})} \times 100 = 10\% \text{ or less}$$