SUBPART 2 - SLAG, COKE, AND MISCELLANEOUS SULFUR SOURCES

§2105.20 SLAG QUENCHING

No person shall operate, or allow to be operated, any slag handling operation, unless such person takes all reasonable actions and applies BACT to prevent and minimize the emission of hydrogen sulfide and other air contaminants from slag quenching. The Department may, by order or permit condition, require the implementation of such actions as:

a. For granulated slag facilities:

1. The rapid quenching of molten slag with a jet stream of water so as to suppress the formation of hydrogen sulfide; and/or,

2. The frequent removal of slag from slag pits to avoid its accumulation above the water surface.

b. For hard slag facilities:

1. Pouring practices that achieve the thinnest uniform slag layers practicable;

2. Pit filling schedules that maximize the air cooling time between subsequent slag pours over a given surface and the air cooling time prior to the quenching of slag with water;

3. Systems for distributing quench water uniformly over the slag surface at rates sufficiently high to minimize or prevent the evolution of hydrogen sulfide;

4. Excavation of slag pits in such a way as to achieve the maximum practicable volume and/or surface area; and/or

5. Modifications to the size and/or geometry of slag pits or facilities.

c. For hard slag ladle pits which began operation after September 7, 1977, at least BACT shall be utilized and not more than 2,300 tons of molten slag per acre of the new hard slag ladle pit shall be poured per day; provided, however, that upon demonstration to the satisfaction of the Department that the use of an alternative control technique will result in the emission of air contaminants less than or equal to that emitted by the use of the maximum daily pouring rate, the Department may permit the utilization of such control technique in lieu of the maximum daily pouring rate.

§2105.21 COKE OVENS AND COKE OVEN GAS

{portions effective August 15, 1997, the remainder effective February 1, 1994; Paragraph e.6 added June 22, 1995, effective July 11, 1995 and amended May 14, 2010 effective May 24, 2010; §2105.21.b, e, and h amended effective August 15, 1997; Subsection f amended February 12, 2007 effective April 1, 2007. Subsection i added August 29, 2013, effective September 23, 2013. Paragraph e.6 amended November 13, 2014, effective January 1, 2015.}

a. **Charging.** No person shall operate, or allow to be operated:

1. Any battery of coke ovens installed, replaced, or reconstructed, or at which a major modification was made on or after January 1, 1978, in such manner that the aggregate of visible charging emissions exceeds a total of 55 seconds during any five (5) consecutive charges on such battery; or

2. Any other battery of coke ovens in such manner that the aggregate of visible charging emissions exceeds a total of 75 seconds during any four (4) consecutive charges on such battery.

b. **Door Areas.** No person shall operate, or allow to be operated, any battery of coke ovens in such manner that:

1. For any batteries installed, replaced, or reconstructed, or at which a major modification was made on or after January 1, 1978, at any time, there are visible emissions from more than five percent (5%) of the door areas of the operating coke ovens in such battery, excluding the two door areas of the last oven charged and any door areas obstructed from view;

2. For any other batteries, other than those subject to Paragraph b.3 of this Section, at any time, there are visible emissions from more than ten percent (10%) of the door areas of the operating coke ovens in such battery, excluding the two door areas of the last oven charged and any door areas obstructed from view;

3. For any of the following batteries, at any time, there are visible emissions from more than eight percent (8%) of the door areas of the operating coke ovens in such battery, excluding the two door areas of the last oven charged and any door areas obstructed from view:

SPECIFIC COKE OVEN BATTERIES

	Source Name	Location
A.	Coke Battery #1	USX Corp. Clairton, PA
B.	Coke Battery #2	USX Corp. Clairton, PA
C.	Coke Battery #3	USX Corp. Clairton, PA
D.	Coke Battery #7	USX Corp. Clairton, PA
E.	Coke Battery #8	USX Corp. Clairton, PA
F.	Coke Battery #9	USX Corp. Clairton, PA
G.	Coke Battery #19	USX Corp. Clairton, PA

; or

4. Emissions from the door areas of any coke oven exceed an opacity of 40% at any time 15 or more minutes after such oven has been charged.

5. Unless for any of the following batteries at the USX Clairton Coke Works, Clairton , Pennsylvania, there is installed big plug doors on the coke side of each oven by January 1, 2000. Any replacement doors on theses batteries, replaced after January 1, 2000, will also be big plug doors. A big plug door is a door that, when installed, contains a plug with minimum dimensions as listed below:

SPECIFIC COKE OVEN BATTERIES

	Source Name	Minimum Width	Minimum Depth
A.	Coke Battery #1	18 1/4"	14 1/2"
B.	Coke Battery #2	18 1/4"	14 1/2"
C.	Coke Battery #3	18 1/4"	14 1/2"
D.	Coke Battery #7	17"	16 3/16"
E.	Coke Battery #8	17"	16 3/16"
F.	Coke Battery #9	17"	16 3/16"
G.	Coke Battery #19	17"	16 1/4"
H.	Coke Battery #20	17"	16 1/4"

c. **Charging Ports.** No person shall operate, or allow to be operated:

1. Any battery of coke ovens installed, replaced, or reconstructed, or at which a major modification was made on or after January 1, 1978, in such manner that, at any time, there are visible emissions from more than one percent (1%) of the charging ports or charging port seals on the operating coke ovens of such battery; or

2. Any other battery of coke ovens in such manner that, at any time, there are visible emissions from more than two percent (2%) of the charging ports or charging port seals on the operating coke ovens of such battery.

d. **Offtake Piping.** No person shall operate, or allow to be operated:

1. Any battery of coke ovens installed, replaced, or reconstructed, or at which a major modification was made on or after January 1, 1978, in such manner that, at any time, there are visible emissions from more than four percent (4%) of the offtake piping on the operating coke ovens of such battery; or

2. Any other battery of coke ovens in such manner that, at any time, there are visible emissions from more than five percent (5%) of the offtake piping on the operating coke ovens of such battery.

e. **Pushing.** No person shall operate, or allow to be operated, any battery of coke ovens unless there is installed on such battery a pushing emission control device which is designed to reduce fugitive emissions from pushing to the minimum attainable through the use of BACT, nor shall any person operate, or allow to be operated any battery of coke ovens in such manner that:

1. At any time, the particulate mass emission rate from the pushing emission control device, for any battery other than those subject to Paragraph e.2 or e.3 of this Section, exceeds a rate determined by an outlet concentration of 0.020 grains per dry standard cubic foot, or the rate determined by the following formula, whichever is greater:

$A = 0.76W^{0.42}$ where A = allowable mass emission rate in pounds per hour per battery, and
W = actual coke pushing rate in tons of coke per hour per battery;

2. At any time, the particulate mass emission rate from the pushing emission control device, for any of the following batteries, exceeds a rate determined by an outlet concentration of 0.010 grains per dry standard cubic foot:

SPECIFIC COKE OVEN BATTERIES

	Source Name	Location
A.	Coke Battery #1	USX Corp. Clairton, PA
B.	Coke Battery #2	USX Corp. Clairton, PA
C.	Coke Battery #3	USX Corp. Clairton, PA
D.	Coke Battery #7	USX Corp. Clairton, PA
E.	Coke Battery #8	USX Corp. Clairton, PA
F.	Coke Battery #9	USX Corp. Clairton, PA
G.	Coke Battery #19	USX Corp. Clairton, PA
H.	Coke Battery #1	Shenango Inc Neville PA

3. At any time, the particulate mass emission rate from the pushing emission control device, for any of the following batteries, exceeds a rate determined by an outlet concentration of 0.040 pounds per ton of coke:

SPECIFIC COKE OVEN BATTERIES

	Source Name	Location
A.	Coke Battery #13	USX Corp. Clairton, PA
B.	Coke Battery #14	USX Corp. Clairton, PA
C.	Coke Battery #15	USX Corp. Clairton, PA
D.	Coke Battery #20	USX Corp. Clairton, PA
E.	Coke Battery B	USX Corp. Clairton, PA

4. Fugitive pushing emissions or emissions from the pushing emission control device outlet equal or exceed an opacity of 20% at any time, except if the Department determines in writing, upon written application from the person responsible for the coke ovens setting forth all information needed to make such determination, that such emissions are of only minor significance with respect to causing air pollution and do not prevent or interfere with the attainment or maintenance of any ambient air quality standard (any such determination shall be submitted as a proposed revision to Allegheny County's portion of the SIP);

5. Visible emissions from the transport of hot coke in the open atmosphere exceed ten percent (10%) opacity at any time; or

6. For any of the following batteries, at any time, the hot coke fails to be held under the hood of the pushing emission control (PEC) device for at least 67 seconds immediately after the pusher ram begins to move and the damper to the PEC device is opened or for at least 15 seconds immediately following the fall of the last of the coke into the hot car, whichever is longer:

SPECIFIC COKE OVEN BATTERIES

	Source Name	Location
A.	Coke Battery #1	USX Corp. Clairton, PA
B.	Coke Battery #2	USX Corp. Clairton, PA
C.	Coke Battery #3	USX Corp. Clairton, PA
D.	Coke Battery #7	USX Corp. Clairton, PA
E.	Coke Battery #8	USX Corp. Clairton, PA
F.	Coke Battery #9	USX Corp. Clairton, PA
G.	Coke Battery #13	USX Corp. Clairton, PA
H.	Coke Battery #14	USX Corp. Clairton, PA
I.	Coke Battery #15	USX Corp. Clairton, PA
J.	Coke Battery #19	USX Corp. Clairton, PA
K.	Coke Battery #20	USX Corp. Clairton, PA

except that this Paragraph shall only be effective during the period from 30 days following the issuance of a written notice by the Department to the owner or operator of such battery that EPA has required the implementation of the contingency measures under the portion of the PM-10 SIP for the Liberty Borough/Clairton area, until issuance of a written notice by the Department that such measures are no longer required.

f. **Combustion Stacks.** No person shall operate, or allow to be operated, any battery of coke ovens in such manner that, at any time, emissions from the combustion stack serving such battery:

1. For any battery of coke ovens installed, replaced, or reconstructed, or at which a major modification was made on or after January 1, 1978, exceed a particulate concentration of 0.015 grains per dry standard cubic foot;
2. For any battery other than those subject to Paragraph f.1 of this Section, exceed a particulate concentration of 0.030 grains per dry standard cubic foot;
3. Equal or exceed an opacity of 20% for a period or periods aggregating in excess of three (3) minutes in any 60 minute period; or
4. Equal or exceed an opacity of 60% at any time.

Measurements of opacity shall be performed according to the methods for visible emissions established by §2107.11 of this Article.

g. **Quenching.** No person shall quench, or allow the quenching of, coke unless the emissions from such quenching are vented through a baffled quench tower and the water used for such quenching is equivalent to, or better than, the water quality standards established for the nearest stream or river by regulations promulgated by the DEP under the Pennsylvania Clean Streams Law, Act of June 22, 1937, PL. 1987, as amended, 35 P.S. 691.1 et seq., except that water from the nearest stream or river may be used for the quenching of coke. The nearest stream or river to the USX Corporation facility in Clairton, PA, shall be the Monongahela River.

h. **Coke oven gas.** Except as provided for in this Section, no person shall operate, or allow to be operated, any source in such manner that unburned coke oven gas is emitted into the open air. In addition, no person shall flare, mix, or combust coke oven gas, or allow such gas to be flared, mixed, or combusted, unless the concentration of sulfur compounds, measured as hydrogen sulfide, in such gas is less than or equal to the following concentrations:

1. Where the rated production capacity of the coke plant producing such gas is less than 70 million standard cubic feet of coke oven gas per day, a concentration of 70 grains per hundred dry standard cubic feet of coke oven gas or the concentration determined by the following formula whichever is less:

$A = 156E^{-0.27}$ where A = allowable hydrogen sulfide content in grains per hundred dry standard cubic feet of coke oven gas, and
E = maximum coke oven gas production rate in millions of cubic feet per day;

2. For all coke batteries installed, replaced, or reconstructed, or at which a major modification was made on or after January 1, 1978, where the rated production capacity of the coke plant producing such gas is equal to or more than 70 million standard cubic feet of coke oven gas per day, other than those subject to Paragraph h.3 of this Section, a concentration of ten grains per hundred dry cubic feet of coke oven gas;

3. For the following battery, on and before December 31, 1996, a concentration of 45 grains per hundred dry cubic feet of coke oven gas, and after December 31, 1996, a concentration of 34 grains per hundred dry cubic feet of coke oven gas:

SPECIFIC COKE OVEN BATTERIES

	Source Name	Location
A.	Coke Battery #1	Shenango Inc Neville PA

4. The standard set forth in Paragraph h.2 of this Section for the following coke oven batteries designated 13, 14, 15, 20, and B at the USX Corporation Clairton Works shall be deemed satisfied for such batteries if the coke oven gas from the following batteries and treated by the Clairton Works coke oven gas desulfurization system in existence as of June 24, 1993, has a sulfur compound concentration, measured as H_2S, of no greater than 40 grains per hundred dry standard cubic feet of coke oven gas produced by the Clairton Works, when all sulfur emissions from its Claus Sulfur Recovery Plant and the tail gas cleaning equipment thereon, expressed as equivalent H_2S, are added to the measured H_2S.

SPECIFIC COKE OVEN BATTERIES

Source Name		Location
A.	Coke Battery #1	USX Corp. Clairton, PA
B.	Coke Battery #2	USX Corp. Clairton, PA
C.	Coke Battery #3	USX Corp. Clairton, PA
D.	Coke Battery #7	USX Corp. Clairton, PA
E.	Coke Battery #8	USX Corp. Clairton, PA
F.	Coke Battery #9	USX Corp. Clairton, PA
G.	Coke Battery #13	USX Corp. Clairton, PA
H.	Coke Battery #14	USX Corp. Clairton, PA
I.	Coke Battery #15	USX Corp. Clairton, PA
J.	Coke Battery #19	USX Corp. Clairton, PA
K.	Coke Battery #20	USX Corp. Clairton, PA
L.	Coke Battery B	USX Corp. Clairton, PA

5. For all other coke batteries, where the rated production capacity of the coke plant producing such gas is equal to or more than 70 million standard cubic feet of coke oven gas per day, other than those subject to Paragraph h.2 or h.3 of this Section, a concentration of 50 grains per hundred dry cubic feet of coke oven gas.

The concentration of sulfur compounds specified by this Subsection shall include tail-gas sulfur, measured as hydrogen sulfide, emitted from sulfur removal equipment.

i. **Soaking**. At no time shall soaking emissions from a standpipe cap opening exceed twenty percent (20%) opacity. An exclusion from this opacity limit shall be allowed for two (2) minutes after a standpipe cap is opened. Compliance with this standard shall be determined through observing the standpipe from a position where the observer can note the time the oven is dampered off and, following the two minute exclusion, read the soaking emissions from the open standpipe in accordance with Method 9.