

Acme Coke
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Emission Control Work Practice Plan
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STEEL COMPANY
COKE DIVISION
EMISSION CONTROL
WORK PRACTICE PLAN

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PREPACB

This plan has been developed to meet the NESHAP for Coke Oven Emissions required under S63.306 of the Clean Air Act, and must be implemented should a second exceedence of the visible emission standard occur within a six month period.

_____ Division Manager

_____ Asst. Division Manager

_____ Area Manager

(b) (1) All Acme Steel Coke Oven operating personnel with job requirements related to emission control will receive specialized initial training and periodic refreshers regarding the performance of their responsibilities as they impact emissions control.

(1) Areas of responsibility assigned by job title and the associated emission points

- (A) Pusher Machine Operator
 - a) pusher side doors
 - b) charging operation
- (B) Larry Car Operator
 - a) charging operation
 - b) offtake systems
- (C) Door Machine Operator
 - a) coke side doors
- (D) Lidmen
 - a) lids
 - b) offtake systems
 - c) charging operations
- (E) Door Cleaner
 - a) pusher side doors
 - b) coke side doors
- (F) Sprayman
 - a) collector main and sprays
 - b) dampers
- (G) Patchers
 - a) jambs
 - b) frames
 - c) brickwork
- (H) Door Repair/Adjustors
 - a) pusher side doors
 - b) coke side doors
- (I) Ovens Supervisors
 - a) Ovens Shift Manager
 - 1) doors
 - 2) charging operations
 - b) Top Charging Shift Manager
 - 1) lids
 - 2) offtakes
 - 3) charging operations
 - c) Heating Manager
 - 1) collector mains
 - d) Door Repair/Patcher Manager
 - 1) door repair/adjustm
 - 2) brickwork, jambs,

(11) Initial and refresher training to cover job procedures for cleaning and inspection.

- A) Pusher Machine Operator
 - a) pusher side door plug and holder (top)
 - b) door gas passage
 - c) knife edge
 - d) door jamb (top section)
 - e) charging procedure
 - f) chuck door
- B) Larry Car Operator
 - a) offtakes
 - b) charging procedures
 - c) machine - emission control devices
- C) Door Machine Operator (Assists Door Cleaner)
 - a) coke side door plug and holder
 - b) door gas passage
 - c) knife edge
 - d) jamb cleaner
- D) Lidman
 - a) top side port lids
 - b) charge holes and castings
 - c) offtake system
 - d) charging procedure
 - e) dampers and aspiration system
- E) Door Cleaner
 - a) door plug and holder
 - b) knife edge
 - c) gas passage
 - d) jamb
 - e) bench level housekeeping
- F) Spray Person
 - a) collector main
 - b) main sprays
 - c) dampers
- G) Patchers
 - a) brickwork repair
 - b) jambs (pointing)
 - c) frames and buckstays
 - d) charge hole castings
 - e) flue castings
- H) Door Repairmen/Adjustors
 - a) door repair
 - b) door replacement
 - c) door adjustment

- I) Oven Supervisors
 - a) Ovens Shift Manager
 - 1) emission control reporting
 - 2) repair/replacement/inspection
 - 3) charging procedure
 - b) Top Charging Shift Manager
 - 1) charging procedure
 - 2) repair/replacement/inspection
 - 3) emission control reporting
 - c) Heating Manager
 - 1) emission control reporting
 - 2) repair/replacement/inspection
 - 3) collector mains
 - d) Door Repair/Adjustment Manager
 - 1) repair/replacement/inspection
 - 2) brickwork
 - 3) emission control reporting

(iii) Training Methods

- A) Lecture
 - a) overview of the Clean Air Act
 - b) overview of the work practice plan
 - c) job procedures
- B) On-the-job Training
 - a) field audit of job procedures
 - b) demonstration of tasks

(iv) Duration of Training

- A) Initial Training
 - a) lecture - eight hours
 - b) audit and physical demonstration - eight hours
- B) Refresher Training
 - a) lecture - four hours
 - b) audit and physical demonstration - four hours
- C) As required by audit "Corrective Action Report" maybe one or all of the following:
 - a) refresher training
 - b) supplemental skills training

(v) Documentation of Successful Completion of Training

- A) Record of Attendance
 - a) signed by employee
 - b) signed by trainer
- B) Written Test with Passing Grade
 - a) signed by employee
 - b) signed by trainer

(VI) Documentation of Performance of Plan Requirements

- A) Declaration by Exception
 - a) Job titles to record any required inspections or cleanings not performed
 - b) Job titles to record any observed emissions
 - c) Job titles to record any mechanical defects or conditions suspected of having the potential for causing emissions
- B) Certification of Accuracy
 - a) Shift Manager to investigate all reports impacting emission control.
 - b) Shift Manager to effect replacement or refer for repairs
 - c) Shift Manager to record action taken for review by Area Manager

(2) Procedures for Controlling Emissions from Coke Oven Doors on By-Product Coke Oven Batteries

(1) Inspection, Adjustment, Repair/Replacement Procedure

- A) Each door and jamb is inspected and cleaned, as needed, before door is placed back on oven.
- B) Doors will be adjusted when necessary as per the adjustment procedure
 - a) Surfaces are clean and free of defects
 - 1) seal
 - 2) jamb
 - b) Push the seal toward the jamb by increasing pressure on the plunger located directly above the leak
 - 1) 11/16 inch installed height setting should never be increased beyond one inch
 - 2) If one inch does not seal - door will need to be inspected for damage or seal reset
 - c) Door corner leaks will be sealed by adjusting the corner adjusting (stop) bolts
 - 1) Located over the corners of the diaphragm plate and seal
 - 2) Screw bolt down applying pressure on the seal at the corner
 - 3) Do not apply more than one (1) full turn on the corner adjusting bolt after the bolt has made contact with the top corner of the diaphragm plate and seal
 - 4) Failure to seal requires inspection for damaged or dirty seal or jamb

- C) Repair and Replacement
- a) Doors requiring repair will be taken out of service as per the door repair schedule
 - b) Spare door will be utilized while door is being repaired
 - 1) Inspect door seal knife edge for damage prior to installation
 - 2) Check compatibility of door with door extractor
 - 3) Place door on oven and check all around the seal edge with a .003 feeler gauge. Adjust to close any gaps over .003 inches. Top and bottom then sides
 - 4) Corner bolts are factory set at one quarter inch from the top of the seal
 - 5) If there are no leaks at corners, screw the corner adjusting (stop) bolt down to touch the top of the diaphragm plate and then back it off about one-eighth of an inch
- D) Equipment Inspection
- a) Equipment relevant to emission control will be inspected daily
 - b) Repairs will be scheduled by Area Manager
- F) Frequency of Inspections
- a) doors/jambs prior to door replacement
 - b) equipment - daily
- G) Conformance Evaluation
- a) Shift Manager to review job titles inspection reports daily
 - b) Shift Manager to perform visual inspection daily
 - c) Daily Shift Manager inspection report forwarded to Area Manager
- H) Inspection and Repair Program Audit
- a) Division Manager will designate a person experienced and familiar with door/jamb inspection and repair procedures to conduct an audit of the inspection, cleaning repair/adjustment of doors and jambs and other equipment for controlling emissions from coke oven doors
 - 1) Checklist items relevant to the responsibilities of at least one of the following:
 - door cleaners (both)
 - door machine operator
 - pusher operator
 - spare door/jamb inventory
 - collector main control
 - 2) Observation of the performance of at least one piece of machinery or equipment recently repaired, adjusted or replaced

- b) Completed audit report submitted to the Division Manager
- c) If required, Division Manager will initiate corrective action
 - 1) refresher training
 - 2) supplemental skills training
- d) Recording of door inspection/repair program audit
 - 1) audit report
 - 2) corrective action report
 - 3) supplemental/refresher training completion report

(11) Leak Identification

- A) Newly charged ovens will be inspected at the time aspiration steam is removed
 - a) coke side cleaner - coke side doors
 - b) pusher side cleaner - pusher side doors
 - c) door machine operator - coke side doors
 - d) pusher operator - pusher side doors and chuck doors
 - e) quench car operator - coke side doors
 - f) all personnel - lintels, regenerators, jams, frames
 - g) All reports of leaks will be directed to the Shift Manager
- B) Chain of command for reporting leaks
 - a) Shift Manager will maintain a daily report of leaks
 - b) Shift Manager will submit the daily report of leaks to the Area Manager
- C) Corrective Action
 - a) Shift Manager to investigate all reports of leaks, make preliminary determination of cause and institute corrective action.
 - b) Leaks sealed, with the action taken, will be reported to the Area Manager.
 - c) Leaks, unable to be sealed, with the action taken, will be reported to the Area Manager.
 - d) Area Manager may require door be taken out of service for additional cleaning and/or repair.

(111) Doors and jams will be cleaned so as to remove any foreign material which would prevent proper sealing, on each push cycle, prior to charging.

- A) Coke Side Door
 - a) door plug - manual cleaning tool
 - b) plug retainer - manual cleaning tool
 - c) gas passage - manual cleaning tool

- d) knife edge - manual cleaning tool
- e) jamb - mechanical cleaner or manual cleaning tool

- B) Pusher Side Door
 - a) door plug - manual cleaning tool
 - b) plug retainer - manual cleaning tool
 - c) gas passage - manual cleaning tool
 - d) knife edge - manual cleaning tool
 - e) jamb - manual cleaning tool
 - f) chuck door (as needed) - manual cleaning tool

(iv) Where all other measures have failed, and until door/jamb can be exchanged or repaired, it may be necessary to utilize supplemental gaskets, patches, or luting material to prevent exceedences.

- A) Emergency use only
- B) Will not be used as a replacement for established work practices

~~These items do not apply to Chicago Coke Plant~~

(vi) An adequate inventory of spare doors and jambs will be kept on site

- A) Pusher Side Doors
 - a) Two doors, ready to be used will be kept on bench level
- B) Pusher Side Jambs
 - a) Two jambs, ready to be installed will be kept on site
- C) Coke Side Doors
 - a) Two doors, ready to be used will be kept at bench level
- D) Coke Side Jambs
 - a) Two jambs, ready to be installed will be kept on site
- E) Spare Lids - 1 per battery
- F) Patcher/Door Repair Manager will maintain a list of doors out for repairs and jambs repaired or replaced
- G) Area Managers will insure that as doors/jambs are repaired or replaced, an adequate supply will be maintained

(vii) Monitoring and Controlling Collector Main Back Pressure

- A) Back pressure is continuously recorded and alarmed
- B) Pressure readings will be recorded daily by the Shift Manager
- C) Pressure measurement and control devices will be visually inspected daily for defects
 - a) charting device
 - b) alarms
 - c) mechanical components
 - d) askania oil level
- D) Back pressure instrumentation is to be checked for calibration monthly
- E) Collector mains will be inspected for tar buildup monthly
- F) Impulse lines are to be inspected for blockages - monthly
- G) Instrument Department will maintain log of all inspections, calibrations, and repairs made on the the collector main pressure control system
- H) In the event of a malfunction of any pressure control device component and the control system does not maintain the desired pressure, corrective action will be initiated
 - a) cause determination
 - b) manual control until automatic is restored

(3) Procedures for Controlling Emissions from Charging Operations

(i) Equipment Inspection and Replacement/Repair Procedure

- A) Larry Car
 - a) jumper pipes
 - b) smoke sleeves
 - c) air cannons/air system
 - d) slide gates
 - e) emission control gaskets, seals, etc.
- B) Pusher Machine
 - a) leveling bar limits
 - b) coal spillage chute
- C) Frequency of Inspection
 - a) daily by operations
 - b) weekly by maintenance

- D) Replacement or Repair of Equipment
 - a) Defects causing emissions will be repaired - requests reported by Shift Manager
 - b) If repairs cannot be effected in a reasonable amount of time, a backup unit may be utilized
 - c) Shift Manager to notify Maintenance and Oven Area Manager to determine schedule for repair
 - d) Maintenance to assure necessary repairs are made and report to Area Manager

- E) Conformance Evaluation
 - a) Shift Manager will perform daily observations of the charging procedure and review the operators inspection reports
 - b) Maintenance will perform a weekly observation of the charging equipment and its operation
 - c) Observation reports will be forwarded to the Area Manager

- F) Inspection and Repair/Replacement Audit
 - a) Division Manager will designate a person experienced and familiar with the charging operation inspection and repair/replacement procedures to conduct an audit to record the effectiveness of the inspection and repair program for preventing exceedences
 - 1) Checklist items relevant to at least one of the following:
 - equipment inspection
 - larry car filling and alignment on oven
 - stage charging operation
 - inspection and cleaning of items listed under ((vi) this section)
 - 2) Observation of the performance of at least one piece of machinery or equipment recently repaired or replaced
 - b) Completed audit report submitted to the Division Manager
 - c) If required, Division Manager will initiate corrective action
 - 1) refresher training
 - 2) supplemental skills training
 - d) Recording of charging operations inspection and repair procedure audit
 - 1) audit report
 - 2) corrective action report
 - 3) supplemental/refresher training completion report

(11) Loading Larry Car

- A) Spot larry car under charging bin compartment
 - a) laser spotting device
 - b) mechanical spot (backup)

- B) Activate bin gate opener to gravity feed coal into larry car hoppers
 - C) Visually inspect all larry car hoppers to confirm full load
 - D) Close charge bin compartment
 - E) Volumetric controls can be adjusted to maintain full charges
- (iii) Alignment of Larry Car on Oven to be Charged
- A) Larry car travels to oven
 - B) Operator utilizes mechanical spotter to align larry car with oven
 - C) Operator lowers drop sleeves
 - D) Lidman usually inspects alignment from battery top level
 - E) Lidman notifies larry car operator of alignment
- (iv) All ovens to be stage charged
- A) Aspiration steam is activated
 - B) Damper positioned to place oven "on main"
 - C) East hopper slide gate is opened
 - D) East hopper is charged
 - E) East slide gate is closed
 - F) West hopper slide gate is opened
 - G) West hopper is charged
 - H) West slide gate is closed
 - I) Middle hopper slide gate is opened
 - J) Approximately one-half middle hopper is charged and slide gate is closed
 - K) Oven is leveled (see part (v) this section)
 - L) East drop sleeve is raised and lid is replaced
 - M) West drop sleeves are raised and lids replaced

- N) Center drop sleeve is raised and larry car proceeds to coal bin
- O) Center lid is replaced
- (V) Oven Leveling
 - A) At signal from larry car operator, pusherman opens chuck door
 - B) Leveler bar spillage chute is positioned
 - C) Leveler bar begins stroke
 - D) Center slide gate is opened and middle hopper is charged until oven is full
 - E) Leveler bar and spillage chute are retracted
 - F) Chuck door is closed
- (VI) Offtake systems will be inspected prior to charging of ovens
 - A) Standpipes and Caps
 - a) Standpipe will be inspected and cleaned as necessary to maintain a minimum 12" opening
 - b) Standpipe cap; will be cleaned as necessary to maintain unobstructed seal
 - c) Defects will be reported to the Top Charging Shift Manager
 - B) Goosenecks
 - a) Goosenecks will be cleaned as necessary to maintain a 12" opening
 - b) Defects will be reported to the Top Charging Shift Manager
 - C) Dampers
 - a) Each dampered oven will be inspected to evaluate damper seal
 - b) Any leakage from the damper will be reported to the Top Shift Manager
 - c) If attempts to secure a proper seal fail - Top Manager to forward report to Area Manager for scheduling of repairs
 - D) Main
 - a) Collector main will be inspected from the coke side bench and battery top daily
 - b) Cracks or leakage will be temporarily sealed a.s.a.p. and will be reported to the Area Manager for the scheduling of repairs

- E) Oven Roofs and Walls
 - a) Walls and roofs will be observed during push for abnormal conditions
 - b) Carbon cutter on pusher ram will be maintained
 - c) Decarbonization will be performed as necessary to maintain adequate gas passage
- F) Charging Holes
 - a) Condition of top port opening will be maintained to insure free flow of coal into oven
 - b) Openings will be cleaned as necessary
- G) Topside Port Lids
 - a) Lids will be cleaned as necessary to provide a good seat on the charge hole casting
 - b) Seat on charge hole casting will be cleaned as necessary
- H) Steam Supply System
 - a) Steam jets will be cleaned as necessary to maintain proper velocity and pattern
 - b) Defects will be reported to Shift Manager
 - c) Shift Manager to report to Area Manager for scheduling of repairs
- I) Liquor Sprays
 - a) Sprays will be cleaned as necessary to maintain proper flow and pattern
 - b) Defects will be reported to Shift Manager
 - c) Shift Manager to report to Area Manager for scheduling of repairs

(4) Controlling Emissions from Topside Port Lids

- (1) Equipment Inspection and Repair/Replacement of Port Lids and Mating Surfaces
 - A) Port lids and castings are inspected prior to the charging of an oven
 - B) Cleaning is performed as needed to maintain a seal
 - C) Defects are brought to the attention of the Shift Manager
 - D) Shift Manager will direct immediate change and/or record the defect on the shift report submitted to the Area Manager
 - E) Area Manager or his designee will review the Shift Managers report daily and compile a list of defective port lid mating surfaces to be used for the scheduling of replacement or repair

F) Top Charging Shift Manager will perform a daily visual inspection of top side port lids and mating surfaces to evaluate conformance with operating specifications

G) Inspection and Repair Program Audit

a) Division Manager will designate a person experienced and familiar with topside port lid/mating surface inspection and repair procedures to conduct an audit of the lid and casting inspection and repair program

1) Checklist items relevant to at least one of the following:

- lid/casting inspection
- lid/casting condition
- sealing procedure

2) Observation of the performance of at least one casting or lid which has been recently repaired or replaced

b) Completed audit report will be submitted to the Division Manager

c) If required, Division Manager will initiate corrective action

- 1) refresher training
- 2) supplemental skills training

d) Recording of top port lids and mating surface audit

- 1) audit report
- 2) corrective action report
- 3) supplemental/refresher training completion report

Sealing Topside Port Lids

A) Lidman will seal all topside port lids involved in the charge of an oven

B) Lidman will remove aspiration steam on oven charged and assists

C) Lidman will visually inspect freshly sealed top port lids

D) Any port lids found to be leaking will be resealed immediately

E) Any lid emissions which cannot be stopped by sealing, or may have been sealed but caused by a defect will be reported to the Shift Top Charging Manager

F) Top Charging Shift Manager will record reported lid leaks, corrective action, and request for repair/replacement if applicable on his report forwarded to the Area Manager

- G) Area Manager will schedule repair or replacement
- (5) Procedures for Controlling Emissions from Offtake Systems (By-Product Coke Oven Battery)
- (1) Equipment Inspection and Repair/Replacement of Offtake System Components
 - A) Lidman to perform a daily inspection of offtake system components
 - B) Defects will be reported to the Shift Manager
 - C) Top Charging Shift Manager to either direct immediate change or repair, reporting actions taken or requesting repair/replacement on his daily report forwarded to the Area Manager
 - D) Top Shift Manager to perform a daily visual inspection of offtake components systems to evaluate conformance with operating specifications - results are logged on his daily report
 - E) Area Manager or his designee will review the shift report daily to compile a list of defective offtake system components for repair or replacement
 - F) Inspection and repair program audit
 - a) Division Manager will designate a person experienced and familiar with offtake systems inspection and repair/replacement procedures to conduct an audit of the offtake system inspection and repair program
 - 1) Checklist items relevant to at least one of the following?
 - offtake system inspection
 - offtake system sealing
 - dampering off procedure
 - 2) Observation of the performance of at least one offtake system component which has been recently repaired or replaced
 - b) Completed audit report will be submitted to the Division Manager
 - c) If required, Division Manager will initiate corrective action
 - 1) refresher training
 - 2) supplemental skills training

- d) Recording of offtake systems inspection and repair program audit
 - 1) audit report
 - 2) corrective action report
 - 3) supplemental/refresher training completion report

(11) Offtake System Leak Identification and Resealing Procedure

- A) Lidman to inspect offtake system of each oven charged after removal of aspiration steam
- B) Visible leakage is to be sealed immediately by the lidman
- C) Any offtake system component leak which cannot be sealed will be reported to the Top Charging Shift Manager
- D) Shift Manager will record reported leak, corrective action, and request for repair/replacement if applicable on his report forwarded to the Area Manager
- E) Area Manager or his designee will review the Shift Manager report daily and compile a list of offtake system components for the scheduling of repair/replacement

(111) Dampening Ovens "Off Main"

- A) Lidman is to verify charging schedule with the Top Charging Shift Manager
- B) Lidman will pull down damper arms on the ovens to be charged
- C) Lidman will open riser cap and perform the necessary inspections and cleanings prior to charging

~~As noted in section (1) sub-paragraph (v) A) daily reporting by the job titles responsible for the effected emission point will be by declaration of exception~~

(1) Operators will record the necessary information on the following reports

- A))
-) NOTE: LIST WHEN REPORTING FORMS ARE APPROVED
- B))

(11) As noted in section (1) sub-paragraph (vi) B) accuracy of the daily reports will be certified by the respective Battery Shift Manager on the following reports:

A) NOTE: LIST WHEN REPORTING FORMS ARE APPROVED