

Acme Coke
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Work Instruction: Coal Preparation
Dated: 1996



Acme Steel Company

Work Instruction

STATUS: REVISED

DEPARTMENT : Coal Handling
 TITLE: Stock Hopper (Coal Preparation)
 EFFECTIVE: 7/31/96

Number: CPWI.001
 Pages: 2

Purpose To describe the procedure used to blend coal prior to pulverization.

Scope Applies to all coals used in the coal preparation process.

Required tools	Shovel - Broom - Air lance - Scraper Bar - Heavy Metal Bar - Numbered Signs
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Step	Description of Work Activity	Record of Activity
1	Maintain constant communications with the Mixer Bin Operator to receive instructions on which coals to reclaim.	Operators log book
2	Instruct the Euclid operator as to which coals to reclaim. <ul style="list-style-type: none"> Observe the Euclid operator to insure the proper coal is reclaimed. If the Euclid operator reclaims the wrong coal, instruct him to return it. 	Operators log book
3	Before coal is dumped into ground hopper, set syntrons according to the type of coal being reclaimed.	No record
4	Signal Euclid Operator as to which hopper to dump coal into. <ul style="list-style-type: none"> If two or more types of coals are being blended, adjust syntrons so that both hoppers run evenly. When blending coals signal the second Euclid Operator to dump immediately after the first operator has cleared the ground hopper. 	No record
5	Continuously adjust syntrons to maintain a proper load / blend of coal on the conveyor belt. <ul style="list-style-type: none"> If the load on the belt is low and the syntrons are properly set, check the syntrons to insure that they are not obstructed. If they are not obstructed contact the Shift Manager. If there is a "worm hole" in the coal use the scraper bar to knock the coal down. 	No record
6	Wait until E-5 belt is completely empty before instructing Euclid Operator to dump the next coal mix into the ground hopper.	No record



Measures Quality of coke and Lab results produced

Records Department and operators log books

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Last Review Date: 10/13/96	Date of Next Review: 7/1/97	Issued By: J. Garzella
Approval & Date Dept. Hd. <i>[Signature]</i> 10/21/96	Approval & Date Dir M&QS <i>P. N. Jones</i> 11/9/96	Approval & Date Other Party <i>[Signature]</i> 10/21/96

Rev#	Rev Date	Reason for Document Change
001	10/13/96	Added Required Tools List. Changed title to key to process flow chart.



Acme Steel Company

Work Instruction

STATUS: REVISED

DEPARTMENT : Coal Handling
 TITLE: Mixer Bin Man (Coal Storage)
 EFFECTIVE: 7/31/96

Number: CPWI.002
 Pages: 2

Purpose To insure proper storage of coal in each mixer bin.

Scope Applies to all coals used in the preparation process.

Required tools	Air Lance - Scraper Bar - Numbered Signs (digital or hand sign) - Shovel
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Step	Description of Work Activity	Record of Activity
1	Communicate with Stock Hopper Attendant to instruct Euclid Operators as to which coals to reclaim. <ul style="list-style-type: none"> Observe Euclids to insure that proper coals are being reclaimed. If Euclid Operator reclaims the wrong coal, notify the Stock Hopper Attendant. 	No Record
2	Use judgment to determine the amount of coal needed in each bin. <ul style="list-style-type: none"> Continuously monitor all mixer bins to determine when and how much coal to order. If too much coal is ordered shut down conveyor belts and notify the Shift Manager. If the mixer shuts down instruct the Stock Hopper Attendant as to whether or not to continue sending coal. 	No Record
3	Insure that all of the coal ordered for any bin has completely cleared the belt before proceeding on to the next coal bin. <ul style="list-style-type: none"> After all coal is cleared from the belt move the tripper using the control switches, to the next bin which coal has been ordered for. If the tripper becomes clogged, use the scraper bar or the air lance to clear the tripper of any obstructions. 	No Record



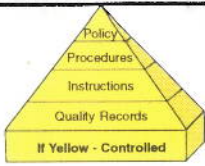
4	Instruct Mixer Man when to start or stop mixers. If the coal supply in any bin runs out, instruct the Mixer Bin Operator to shut down. <ul style="list-style-type: none"> • If there is a worm hole in the coal, use the air lance to blow it down. • If the tripper gets clogged up with too much coal, causing the coal to run into the wrong bins, use the air lance to blow it out or the scraper bar to clean it. 	No Record
5	Maintain communication with the Charging Bin Operator to plan the amount of coal to be put in each bin.	No Record

Measures Quality of coke produced and Lab results.

Records Department logs.

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Rev#	Rev Date	Reason for Document Change
001	10/13/96	Added Required Tools List. Changed title to key to process flow chart. Added instructions for use of tripper in step 3.



Acme Steel Company

Work Instruction

STATUS: REVISED

DEPARTMENT : Coal Handling
 TITLE: Mixer (Coal Preparation)
 EFFECTIVE: 7/31/96

Number: CPWI.003
 Pages: 2

Purpose To describe the procedure used to blend coal.

Scope Applies to all coals used in the preparation process

Required tools	Shovel - Broom - Air lance - Scraper Bar - Heavy Metal Bar - Mixer Scale - Sampling Equipment - Test Weight
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Step	Description of Work Activity	Record of Activity
1	Using the sampling equipment, take coal weights on each mixer machine twice daily to insure proper coal percentage. <ul style="list-style-type: none"> • Use certified test weight to insure accuracy of scale daily before weighing coal. The scale must measure within +/- .3 pounds. • If scale is out of calibration, contact the Shift Manager to have equipment checked. • Shut down mixer machine and lock out "Y" belt for safety. • Take one sample from each bin, and log weights in the mixer log book. • If coal weights is incorrect, contact the supervisor, adjust the mixer gate and take another sample. 	Operators log book
2	Supply air to necessary bins to aid in supplying steady flow of coal.	None
3	Monitor all bins to insure coal flow. <ul style="list-style-type: none"> • If coal gets stuck in the bin, shut down the mixer and free up the coal before restarting. • If any foreign objects get stuck in the mixer gate, raise the gate to allow the object to go through and reset gate. • If coal is spilling off the sides of the conveyor belt, contact the shop to "train" the belt. • Keep all riffle chutes free of obstruction. 	None



4	Keep all interlock switches turned on when mixer is in operation.	None
5	Maintain constant contact with the Charging Bin / Mixer Bin Operators when starting or stopping the mixer machine. <ul style="list-style-type: none"> Notify the Mixer Bin Operator immediately, once the Charging Bin Operator shuts down the conveyor belts or if any problems occur causing you to shut down the mixer machines. 	None

Measures Lab results and Quality of coke produced

Records Department and operators log book.

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001	10/13/96	Added Required Tools List. Changed title to key to process flow chart. Added statements to step #1



Acme Steel Company

Work Instruction

STATUS: REVISED

DEPARTMENT : Coal Handling
 TITLE: Pulverization (Coal Preparation)
 EFFECTIVE: 7/31/96

Number: CPWI.004
 Pages: 2

Purpose To describe the procedure used to pulverize coal.

Scope Applies to all coals used in the preparation process.

Required tools	Shovel - Broom - Air lance - Scraper Bar - Heavy Metal Bar - Sledge Hammer - Water Hose - Wire or Welding Rods - Ratchet - Drop Light.
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Step	Description of Work Activity	Record of Activity
1	<p>Continuously monitor conveyor belts to insure proper flow of coal through entire system.</p> <ul style="list-style-type: none"> • Continuously check all chutes to prevent coal spills. • <u>When operating the cage paktor:</u> • If belt stops due to the activation of the metal detector, remove metal from coal on "A" conveyor belt, and restart conveyor system. • Continuously monitor oversize chute to insure the oversize doesn't back up into system. If oversize discharge gets to high, contact Shift Manager to have it removed. • If the oversize chute becomes plugged, shut the system down and clear the chute using the required tools. 	No Record
2	<p>Continuously check sprays to insure proper flow of bulk density oil. The Shift Manager will instruct the operator to what level to set the oil.</p> <ul style="list-style-type: none"> • If load of coal on the belt is too low to activate bulk density oil, contact the Stock Hopper Attendant to increase the load. • If spray heads become plugged, shut down the process and clean out the heads with wire or welding rods. • If the oil setting is set too low, contact the Shift Manager. • During winter months, at the end of the shift, leave the oil pump on and adjust the valves to circulate the oil. 	No Record



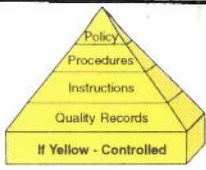
3	Maintain communications with Stock Hopper Attendant to make proper adjustments according to different types of coal.	No Record
4	<p>Visually inspect coal on "W" belt to check for desired pulverization, if coal is not being pulverized properly:</p> <p><u>Hammer Mill</u></p> <ul style="list-style-type: none"> • Shut down system and check the screen for holes using the drop light. If holes are present contact the Shift Manager to have them replaced. • Adjust hammers (tighten or loosen) using the ratchet. • Contact Stock Hopper Attendant to reduce load on the conveyor. <p><u>Cage Paktor</u></p> <ul style="list-style-type: none"> • Check the set points for proper setting and contact the Shift Manager. 	No Record
5	Shut down system at the end of the shift and clean all equipment.	No Record

Measures Coal samples taken by lab and visual inspection of coal on the conveyor belt.

Records Department logs

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001	10/13/96	Added Required Tools List. Changed title to key to process flow chart. Added a statement to step 1.



Acme Steel Company

Work Instruction

STATUS: REVISED

DEPARTMENT : Coal Handling
 TITLE: Euclid (Coal Preparation)
 EFFECTIVE: 7/31/96

Number: CPWI.005
 Pages: 2

Purpose To describe the procedure used to reclaim coals

Scope Applies to all coals used in the preparation process

Required tools	N/A
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Step	Description of Work Activity	Record of Activity
1	Receive instruction from the Stock Hopper Attendant as to which coal(s) to reclaim.	No Record
2	Reclaim coal evenly and uniformly across width of the coal pile then alternate in either direction . <ul style="list-style-type: none"> When reclaiming coal in bad weather conditions, remove top layer of coal (approx. two Euclids width wide) and reclaim in the same area for remainder of the shift. If you make an uneven or deep cut, make an attempt to correct it , if you can't correct it contact the Shift Manager. 	No Record
3	Operators are to notify Shift Manager of foreign objects in stock pile.	No Record
4	Operators should notify Shift Manager of any unsafe conditions.	No Record
5	Maintain condition of stock piles throughout the shift to insure proper drainage.	No Record

Note* never attempt to mount or dismount any moving equipment



Measures Quality of coal blends.

Records Department and Stock Hopper Attendance log.

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001	10/13/96	Added Required Tools List. Changed title to key to process flow chart.



Work Instruction

Acme Steel Company

STATUS: NEW

DEPARTMENT: Coal Handling
 TITLE: BDO Sampling (Coal Preparation)
 EFFECTIVE: 10/13/96

Number: CPWI.024
 Pages: 1

Purpose The purpose to outline the sampling procedures for bulk density oil.

Scope Applies to all BDO samples taken in the coal handling department.

Required tools	1 gallon can
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Step	Description of Work Activity	Record of Activity
1	Prior to unloading BDO from the delivery truck into the BDO tank, a Coal Handling Shift Manager collects a 1 gallon sample of BDO from the pump line of every truck load delivered.	Sample analysis
2	The Coal handling Shift Manager takes the sample to the Coal Handling Office and places an identifying sticker on the lid of the sample.	Sample analysis
3	The Coke Plant Sampler picks up the sample from Coal Handling Office and takes it to the Furnace Lab for analysis.	Sample analysis
4	Furnace Lab reports the analysis to Coal Handling Office.	Sample analysis

Measures N/A

Records Sample analysis

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Acme Steel Company

Work Instruction

STATUS: Revised

DEPARTMENT : Coke Plant
TITLE: Calibration of Mixer Scale (Coal Preparation)
EFFECTIVE: 10/01/96

Number: CPWI: 025
 Pages: 2

Purpose To outline the procedure used to maintain and calibrate the Mixer Scale.

Scope Applies to the Mixer Scale.

Step	Description of Work Activity	Record of Activity
1	Remove the top platter from the scale platform. Clean spider and load cell assembly. Inspect for any damage or binding.	Calibration Schedule
2	Check bubble level. If bubble is not in center of circle adjust four corner feet until level condition is achieved.	Calibration Schedule
3	Test for a stable condition by trying to rock the platform backward and forward and side to side. Adjust the feet for final levelness and stability.	Calibration Schedule
4	Replace platter onto platform, with scale platform empty press the ON/RESTART button. After scale sequences through it's display test, depress ZERO button. The scale should indicate zero reading.	Calibration Schedule
5	Place a certified test weight of 50 pounds on the center of the scale platform. The scale should indicate 50 pounds. + or - .3 pounds.	Calibration Schedule
6	If the scale tests within + or - .3 pounds. affix calibration sticker showing date of calibration and next scheduled calibration. If error exceeds + or - .3 pounds remove scale from service and contact the certified service company to have scale re-calibrated.	Calibration Schedule

Measures Accuracy of equipment operation,

Records Department records and instrument labels.



Rev#	Rev Date	Reason for Document Change
001	03/01/97	In Step 4, added 2nd sentence.
002	01/07/97	Deleted entire work instruction.
003	07/01/97	Reinstated entire work instruction. Revised wording in step #4, added step 5 and 6. Changed revision number from 002 to 003. Changed revision date and date of last review from 01/07/97 to 07/01/97. Changed date of next reevaluation fro 07/01/97 to 07/01/98.

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