

Note: This is a reference cited in AP 42, *Compilation of Air Pollutant Emission Factors, Volume I Stationary Point and Area Sources*. AP42 is located on the EPA web site at www.epa.gov/ttn/chief/ap42/

The file name refers to the reference number, the AP42 chapter and section. The file name "ref02_c01s02.pdf" would mean the reference is from AP42 chapter 1 section 2. The reference may be from a previous version of the section and no longer cited. The primary source should always be checked.

AP32 Section:	12.5.1
Background Chapter	3
Reference:	47
Title:	Summary of stack test results for Nucor Steel (Huger SC). Testing conducted on May 14-15, August 5-8, and December 4, 1997; December 1, 1998; April 20 and May 15, 1999; January 8, February 27, and August 23-23, 2001. Received from Anthony Keeler, South Carolina Department of Health and Environmental Control on September 16, 2002.

Nucor Steel Corporation

47

Tunnel Furnaces

Huger, S. C.

Tests Results-May 15, 1997

Permit No. 0420-006

Id No. CO

NOx Emissions:

East

Test	One	Two	Three	Average
Conc.(ppm)	55.00	55.00	56.00	55.00
Stack Flow Rate(dscfh)*	987000	987000	1007000	994000
Emission Rate(lb/hr)	6.49	6.49	6.74	6.57

*dscf at 68 degF, 29.92" Hg.

Allowable(lbs/hr) 23.8

West

Test	One	Two	Three	Average
Conc.(ppm)	33.00	46.00	42.00	40.00
Stack Flow Rate(dscfh)*	1008000	1030000	1063000	1034000
Emission Rate(lb/hr)	3.97	5.66	5.33	4.99

*dscf at 68 degF, 29.92" Hg.

Allowable(lbs/hr) 23.8

Operational Notes

1. Production during the tests was an average 56.19 T/hour.

Status as Tested:

S.C. Permit No. 0420-0060-CO (NOx).....COMPLIANCE

cc: Jake Frick

Jerry Chalmers

Larry Ragsdale

Beth Boland

Bruce Hennessee, Trident District

Main File

Report Received: June 13, 1997

Review Complete: August 26, 1997

Reviewer: Chris Corley CC

Nucor Steel Corporation

Melt Shop Baghouse

Huger, S. C.

Results - Tests of May 14, 1997

Permit No. 0420-0060

Id. No CC

See B-10-98 revision

CO

Test #	Production tons/hr	Capacity I %	Emissions lbs/hr	Emissions lbs/ton	Allowable lbs/ton
1	103.950	63.00	79.760	0.767	
2	120.150	72.80	54.902	0.457	
3	89.000	53.94	135.027	1.52	
Avg.	104.367	63.25	89.896	0.914	2.000

Rated capacity 165 tons.

Visibles (Method 9)

Test #	1	2	3
No. of 6 Min. Sets	1	3	0
Sets greater than std.	0	0	NA
Average Opacity - %	0	0	NA
Set Max/min opacity - %	0/0	0/0	NA

Operational Notes

1. The average pressure drop across the baghouse was 10.8" of HOH (Range-10.0-12.0 inches).
2. Fan amps averaged 78.75 amps (Range=73-90).

Status as Tested:

Permit No. 0420-0060, Id. CC, Section II, CO.....COMPLIANCE

Permit No. 0420-0060, Id. CC, Section II, Visibles.....COMPLIANCE

cc: Jake Frick

Jerry Chalmers

Beth Boland

Larry Ragsdale

Bruce Hennessee, Trident District

Main File

Report Received : June 13, 1997

Review Complete : August 26, 1997

Reviewer: Chris Corley *CC*

Nucor Steel Corporation

Melt Shop Baghouse

Huger, S. C.

Tests Results-May 14, 1997

Permit No. 0420-006

Id No. CC

See 3-18-97 rev. 1.0

VOC Emissions:

Test	One	Two	Three	Average
Conc.(ppm as propane)	1.00	1.00	1.00	1.00
Conc.(ppm as Carbon)	3.00	3.00	3.00	3.00
Stack Flow Rate(dscfh)*	84382000	83899000	77378000	81886000
Emission Rate(lb/hr)	2.66	2.64	2.44	2.58
Emission Rate(lbC/ton)	0.026	0.022	0.027	0.025
*dscf at 68 degF, 29.92" Hg.				
Allowable(lbsC/ton)				0.13

Visibles (Method 9)

Test #	1	2	3	Total
No. of 6 Min. Sets	5	NA	NA	5
Sets greater than Std.	0	NA	NA	0
Average Opacity-%	0	NA	NA	0
Set Max/Min Opacity-	0/0	NA	NA	0/0

Operational Notes

1. Production during the tests was an average 104.367 T/hour.
2. The average pressure drop across the baghouse was 10.8" of HOH (Range = 10.0-12.0 inches).
3. Fan Amps averaged 78.75 Amps (Range = 79-90).

Status as Tested:

Permit No. 0420-0060, Id. CC, Section II, VOC.....COMPLIANCE

Permit No. 0420-0060, Id. CC, Section II, Visibles.....COMPLIANCE

cc: Jake Frick

Jerry Chalmers

Larry Ragsdale

Beth Boland

Bruce Hennessee, Trident District

Main File

Report Received: June 13, 1997

Review Complete: August 26, 1997

Reviewer: Chris Corley *CC*

Nucor Steel Corporation

Melt Shop Baghouse

Huger, S. C.

Results - Tests of May 14, 1997

Permit No. 0420-0060

Id. No CC

Sec 9-10-98 Rev. 3.07

Nox

Test #	Production tons/hr	Capacity1 %	Emissions		Allowable lbs/ton
			lbs/hr	lbs/ton	
1	103.950	63.00	50.409	0.485	
2	120.150	72.80	120.288	1.001	
3	89.000	53.94	83.204	0.935	
Avg.	104.367	63.25	84.634	0.807	0.350

Rated capacity 165 tons.

Visibles (Method 9)

Test #	1	2	3
No. of 6 Min. Sets	1	3	0
Sets greater than std.	0	0	NA
Average Opacity - %	0	0	NA
Set Max/min opacity - %	0/0	0/0	NA

Operational Notes

1. The average pressure drop across the baghouse was 10.8" of HOH (Range-10.0-12.0 inches).
2. Fan amps averaged 78.75 amps (Range=73-90).

Status as Tested:

Permit No. 0420-0060, Id. CC, Section II, NOx.....VIOLATION

Permit No. 0420-0060, Id. CC, Section II, Visibles.....COMPLIANCE

cc: Jake Frick

Jerry Chalmers

Beth Boland

Larry Ragsdale

Bruce Hennessee, Trident District

Main File

Report Received : June 13, 1997

Review Complete : August 26, 1997

Reviewer: Chris Corley

CC

Nucor Steel Corporation

Melt Shop Baghouse

Huger, S. C.

Results - Tests of May 14, 1997

Permit No. 0420-0060

Id. No CC

Sec 13-11-98

Lead

Test #	Production tons/hr	Capacity %	Emissions lbs/hr	Emissions lbs/ton	Allowable lbs/ton
1	103.950	63.00	0.044	0.00042	
2	120.150	72.80	0.041	0.00034	
3	89.000	53.94	0.036	0.00040	
Avg.	104.367	63.25	0.040	0.000386	0.0003675

Rated capacity 165 tons.

Visibles (Method 9)

Test #	1	2	3
No. of 6 Min. Sets	1	3	0
Sets greater than std.	0	0	NA
Average Opacity - %	0	0	NA
Set Max/min opacity - %	0/0	0/0	NA

Operational Notes

1. The average pressure drop across the baghouse was 10.8" of HOH (Range-10.0-12.0 inches).
2. Fan amps averaged 78.75 amps (Range=73-90).

Status as Tested:

Permit No. 0420-0060, Id. CC, Section II, Lead.....VIOLATION

Permit No. 0420-0060, Id. CC, Section II, Visibles.....COMPLIANCE

cc: Jake Frick

Jerry Chalmers

Beth Boland

Larry Ragsdale

Bruce Hennessee, Trident District

Main File

Report Received : June 13, 1997

Review Complete : August 26, 1997

Reviewer: Chris Corley

CC

Nucor Steel Corporation

Melt Shop Baghouse

Huger, S. C.

Results - Tests of May 14, 1997

Permit No. 0420-0060

Id. No. CC

See 8-10-78 HOV = 17

SO2

Test #	Production tons/hr	Capacity %	Emissions lbs/hr	Emissions lbs/ton	Allowable lbs/ton
1	103.950	63.00	42.117	0.405	
2	120.150	72.80	55.835	0.465	
3	89.000	53.94	25.748	0.289	
Avg.	104.367	63.25	41.233	0.386	0.200

Rated capacity 165 tons.

Visibles (Method 9)

Test #	1	2	3
No. of 6 Min. Sets	1	3	0
Sets greater than std.	0	0	NA
Average Opacity - %	0	0	NA
Set Max/min opacity - %	0/0	0/0	NA

Operational Notes

1. The average pressure drop across the baghouse was 10.8" of HOH (Range-10.0-12.0 inches).
2. Fan amps averaged 78.75 amps (Range=73-90).

Status as Tested:

Permit No. 0420-0060, Id. CC, Section II, SO2.....VIOLATION

Permit No. 0420-0060, Id. CC, Section II, Visibles.....COMPLIANCE

cc: Jake Frick

Jerry Chalmers

Beth Boland

Larry Ragsdale

Bruce Hennessee, Trident District

Main File

Report Received : June 13, 1997

Review Complete : August 26, 1997

Reviewer: Chris Corley

CC

Nucor Steel Corporation
Melt Shop Baghouse
Huger, S. C.
Results - Tests of May 14, 1997

Permit No. 0420-0060
Id. No CC

Particulate

Test #	Production tons/hr	Capacity1 %	Emissions		Allowable gr/dscf
			lbs/hr	gr/dscf	
1	103.950	63.00	18.600	0.00154	
2	120.150	72.80	18.242	0.00152	
3	89.000	53.94	20.793	0.00188	
Avg.	104.367	63.25	19.212	0.00165	0.0035

Rated capacity 165 tons.

Visibles (Method 9)

Test #	1	2	3
No. of 6 Min. Sets	1	3	0
Sets greater than std.	0	0	NA
Average Opacity - %	0	0	NA
Set Max/min opacity - %	0/0	0/0	NA

Operational Notes

1. The average pressure drop across the baghouse was 10.8" of HOH (Range-10.0-12.0 inches).
2. Fan amps averaged 78.75 amps (Range=73-90).
3. Damper positions were as follows:

	Day Shift	Night Shift
#1 EAF	-0.12	-0.27
#2 EAF	-1	-0.9

Status as Tested:

Permit No. 0420-0060, Id. CC, Section II, PM.....COMPLIANCE
Permit No. 0420-0060, Id. CC, Section II, Visibles.....COMPLIANCE

Report Received : June 13, 1997
Review Complete : August 28, 1997
Reviewer: Chris Corley

cc: Jake Frick
Jerry Chalmers
Beth Boland
Larry Ragsdale
Bruce Hennessee, Trident District
Main File

Nucor Steel Corporation**Melt Shop Baghouse****Huger, S. C.**

Permit No. 0420-0060

Id. No CC

Revised Results - Tests of May 14, 1997**Lead**

Test #	Production tons/hr	Capacity1 %	Emissions lbs/hr	Emissions lbs/ton	Allowable lbs/ton
1	198.73	39.7	0.044	0.00022	
2	190.19	38.0	0.041	0.00022	
3	162.76	32.6	0.036	0.00022	
Avg.	183.89	36.8	0.040	0.00022	0.0003675

Rated capacity 500 tons.

Visibles (Method 9)

Test #	1	2	3
No. of 6 Min. Sets	1	3	0
Sets greater than std.	0	0	NA
Average Opacity - %	0	0	NA
Set Max/min opacity - %	0/0	0/0	NA

Operational Notes

1. The average pressure drop across the baghouse was 10.8" of HOH (Range-10.0-12.0 inches).
2. Fan amps averaged 78.75 amps (Range=73-90).

Status as Tested:

Permit No. 0420-0060, Id. CC, Section II, Lead.....COMPLIANCE

Permit No. 0420-0060, Id. CC, Section II, Visibles.....COMPLIANCE

cc: Jake Frick

Jerry Chalmers

Beth Boland

Larry Ragsdale

Bruce Hennessee, Trident District

Main File

Report Received : June 13, 1997

Review Complete : August 26, 1997

Revision Date: March 10, 1998

Reviewer: Chris Corley 

Nucor Steel Corporation
Melt Shop Baghouse
Huger, S. C.
Revised Tests Results-May 14, 1997

Permit No. 0420-006
Id No. CC

VOC Emissions:

Test	One	Two	Three	Average
Conc.(ppm as propane)	1.00	1.00	1.00	1.00
Conc.(ppm as Carbon)	3.00	3.00	3.00	3.00
Stack Flow Rate(dscfh)*	84382000	83899000	77378000	81886000
Emission Rate(lb/hr)	2.66	2.64	2.44	2.58
Emission Rate(lbC/ton)	0.013	0.014	0.015	0.014
*dscf at 68 degF, 29.92" Hg. Allowable(lbs/ton)				0.13

Visibles (Method 9)

Test #	1	2	3	Total
o. of 6 Min. Sets	5	NA	NA	5
ets greater than Std.	0	NA	NA	0
verage Opacity-%	0	NA	NA	0
Set Max/Min Opacity-	0/0	NA	NA	0/0

Operational Notes

1. Production during the tests was an average 104.367 T/hour.
2. The average pressure drop across the baghouse was 10.8" of HOH (Range=10.0-12.0 inches).
3. Fan Amps averaged 78.75 Amps (Range=79-90).

Status as Tested:

Permit No. 0420-0060, Id. CC, Section II, VOC.....COMPLIANCE
Permit No. 0420-0060, Id. CC, Section II, Visibles.....COMPLIANCE

cc: Jake Frick
Jerry Chalmers
Larry Ragsdale
Beth Boland
Bruce Hennessee, Trident District
Main File

Report Received: June 13, 1997
Review Complete: August 26, 1997
Revision Date: March 10, 1998
Reviewer: Chris Corley 

Nucor Steel Corporation**Melt Shop Baghouse****Huger, S. C.****Revised Results - Tests of May 14, 1997**

Permit No. 0420-0060

Id. No CC

SO2

Test #	Production tons/hr	Capacity1 %	Emissions lbs/hr	lbs/ton	Allowable lbs/ton
1	198.73	39.7	42.117	0.212	
2	190.19	38.0	55.835	0.294	
3	162.76	32.6	25.748	0.158	
Avg.	183.89	36.8	41.233	0.386	0.200

Rated capacity 500 tons.

Visibles (Method 9)

Test #	1	2	3
No. of 6 Min. Sets	1	3	0
Sets greater than std.	0	0	NA
Average Opacity - %	0	0	NA
Set Max/min opacity - %	0/0	0/0	NA

Operational Notes

1. The average pressure drop across the baghouse was 10.8" of HOH (Range-10.0-12.0 inches).
2. Fan amps averaged 78.75 amps (Range=73-90).

Status as Tested:

Permit No. 0420-0060, Id. CC, Section II, SO2.....VIOLATION

Permit No. 0420-0060, Id. CC, Section II, Visibles.....COMPLIANCE

cc: Jake Frick

Jerry Chalmers

Beth Boland

Larry Ragsdale

Bruce Hennessee, Trident District

Main File

Report Received : June 13, 1997

Review Complete : August 26, 1997

Revision Date: March 10, 1998

Reviewer: Chris Corley 

Nucor Steel Corporation**Melt Shop Baghouse****Huger, S. C.****Revised Results - Tests of May 14, 1997**

Permit No. 0420-0060

Id. No CC

Nox

Test #	Production tons/hr	Capacity1 %	Emissions lbs/hr	Emissions lbs/ton	Allowable lbs/ton
1	198.73	39.7	50.409	0.254	
2	190.19	38.0	120.288	0.632	
3	162.76	32.6	83.204	0.511	
Avg.	183.89	36.8	84.634	0.466	0.350

Rated capacity 500 tons.

Visibles (Method 9)

Test #	1	2	3
No. of 6 Min. Sets	1	3	0
Sets greater than std.	0	0	NA
Average Opacity - %	0	0	NA
Set Max/min opacity - %	0/0	0/0	NA

Operational Notes

1. The average pressure drop across the baghouse was 10.8" of HOH (Range-10.0-12.0 inches).
2. Fan amps averaged 78.75 amps (Range=73-90).

Status as Tested:

Permit No. 0420-0060, Id. CC, Section II, NOx.....VIOLATION

Permit No. 0420-0060, Id. CC, Section II, Visibles.....COMPLIANCE

cc: Jake Frick

Jerry Chalmers

Beth Boland

Larry Ragsdale

Bruce Hennessee, Trident District

Main File

Report Received : June 13, 1997

Review Complete : August 26, 1997

Revision Date: March 10, 1998

Reviewer: Chris Corley CC

Nucor Steel Corporation**Melt Shop Baghouse****Huger, S. C.**

Permit No. 0420-0060

Id. No CC

Revised Results - Tests of May 14, 1997**CO**

Test #	Production tons/hr	Capacity1 %	Emissions lbs/hr	Emissions lbs/ton	Allowable lbs/ton
1	198.73	39.7	79.760	0.401	
2	190.19	38.0	54.902	0.289	
3	162.76	32.6	135.027	0.830	
Avg.	183.89	36.8	89.896	0.507	2.000

Rated capacity 500 tons.

Visibles (Method 9)

Test #	1	2	3
No. of 6 Min. Sets	1	3	0
Sets greater than std.	0	0	NA
Average Opacity - %	0	0	NA
Set Max/min opacity - %	0/0	0/0	NA

Operational Notes

1. The average pressure drop across the baghouse was 10.8" of HOH (Range-10.0-12.0 inches).
2. Fan amps averaged 78.75 amps (Range=73-90).

Status as Tested:

Permit No. 0420-0060, Id. CC, Section II, CO.....COMPLIANCE
Permit No. 0420-0060, Id. CC, Section II, Visibles.....COMPLIANCE

cc: Jake Frick

Jerry Chalmers

Beth Boland

Larry Ragsdale

Bruce Hennessee, Trident District

Main File

Report Received : June 13, 1997

Review Complete : August 26, 1997

Revision Date: March 10, 1998

Reviewer: Chris Corley



600 Bull Street
Columbia, SC 29201-1708

COMMISSIONER:
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March 10, 1998

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Mr. Ray Sims
Nucor Steel Corporation
Post Office Box 2259
Mt. Pleasant, South Carolina 29465

Dear Mr. Sims,

Enclosed please find the revised results of source tests conducted on May 14, 1998. These results contain emission rates, operating parameters, and compliance status of the source tested. These results were revised based on more accurate production rates provided by you on March 09, 1998.

Please review and if I can be of further assistance in these matters, please do not hesitate to call @ (803)734-4903.

Sincerely,

Chris Corley
Source Evaluation Section
Bureau of Air Quality

cc: Jake Frick
Jerry Chalmers
Beth Boland
Larry Ragsdale
Bruce Hennessee, Trident District
Main File

Nucor Steel Corporation

Melt Shop Baghouse

Huger, S. C.

Permit No. 0420-0060

Id. No CC

Results - Tests of August 5-7, 1997

Particulate

Test #	Production tons/hr	Capacity ¹ %	Emissions		Allowable gr/dscf
			lbs/hr	gr/dscf	
1	199.8	39.96	12.782	0.00121	
2	228.6	45.72	9.085	0.00083	
3	178.1	35.62	12.875	0.00118	
Avg.	202.2	40.43	11.581	0.00107	0.0035

Rated capacity 500 tons.

Visibles (Method 9)

Test #	1	2	3
No. of 6 Min. Sets	5	0	0
Sets greater than std.	0	NA	NA
Average Opacity - %	0	NA	NA
Set Max/min opacity - %	0/0	NA	NA

Operational Notes

1. The average pressure drop across the baghouse was a static 7.5" of water.
2. Fan amps averaged 75 amps (Range = 72-75).
3. Damper positions were as follows(in percent open):

	#1 EAF	#2 EAF
August 5-Day Shift	80%	80%
August 5-Night Shift	80%	70%
August 6-Day Shift	60%	60%
August 6-Night Shift	75%	80%
August 7-Day Shift	60%	60%
August 7-Night Shift	70%	60%

Status as Tested:

Permit No. 0420-0060, Id. CC, Section II, PM.....COMPLIANCE

Permit No. 0420-0060, Id. CC, Section II, Visibles.....COMPLIANCE

Report Received : September 8, 1997

Review Complete : September 11, 1997

Reviewer: Chris Corley

cc: Jake Frick

Jerry Chalmers

Beth Boland

Larry Ragsdale

Bruce Hennessee, Trident District

Main File

Nucor Steel Corporation

Melt Shop Baghouse

Huger, S. C.

Permit No. 0420-0060

Id. No CC

Results - Tests of August 5-7, 1997

SO2

Test #	Production tons/hr	Capacity1 %	Emissions lbs/hr	Emissions lbs/ton	Allowable lbs/ton
1	199.8	39.96	70.123	0.351	
2	228.6	45.72	71.132	0.311	
3	178.1	35.62	58.452	0.328	
Avg.	202.2	40.43	66.569	0.33	0.200

Rated capacity 500 tons.

Visibles (Method 9)

Test #	1	2	3
No. of 6 Min. Sets	5	0	0
Sets greater than std.	0	NA	NA
Average Opacity - %	0	NA	NA
Set Max/min opacity - %	0/0	NA	NA

Operational Notes

1. The average pressure drop across the baghouse was a static 7.5" of HOH.
2. Fan amps averaged 75 amps (Range=72-75).

Status as Tested:

Permit No. 0420-0060, Id. CC, Section II, SO2.....VIOLATION

Permit No. 0420-0060, Id. CC, Section II, Visibles.....COMPLIANCE

cc: Jake Frick

Jerry Chalmers

Beth Boland

Larry Ragsdale

Bruce Hennessee, Trident District

Main File

Report Received : September 8, 1997

Review Complete : September 11, 1997

Reviewer: Chris Corley

Nucor Steel Corporation**Melt Shop Baghouse****Huger, S. C.****Results - Tests of August 5-7, 1997**

Permit No. 0420-0060

Id. No CC

Lead

Test #	Production tsc/hr	Capacity1 %	Emissions		Allowable lbs/ton
			lbs/hr	lbs/ton	
1	199.800	39.96	0.045	0.00023	
2	228.600	45.72	0.043	0.00019	
3	178.100	35.62	0.053	0.00029	
Avg.	202.167	40.43	0.047	0.00024	0.0003675

Rated capacity 500 tons.

Visibles (Method 9)

Test #	1	2	3
No. of 6 Min. Sets	5	0	0
Sets greater than std.	0	NA	NA
Average Opacity - %	0	NA	NA
Set Max/min opacity - %	0/0	NA	NA

Operational Notes

1. The average pressure drop across the baghouse was a static 7.5" of HOH.
2. Fan amps averaged 75 amps (Range = 72-75).

Status as Tested:

Permit No. 0420-0060, Id. CC, Section II, Lead..... COMPLIANCE

Permit No. 0420-0060, Id. CC, Section II, Visibles.....COMPLIANCE

cc: Jake Frick

Jerry Chalmers

Beth Boland

Larry Ragsdale

Bruce Hennessee, Trident District

Main File

Report Received : September 8, 1997

Review Complete : September 11, 1997

Reviewer: Chris Corley

ucor Steel Corporation
Melt Shop Baghouse
Huger, S. C.
Tests Results-August 5-7, 1997

Permit No. 0420-0060
Id No. CC

VOC Emissions:

Test	One	Two	Three	Average
Conc.(ppm as propane)	13.4	6.0	4.9	8.1
Conc.(ppm as Carbon)	40.20	18.00	14.70	24.30
Stack Flow Rate(dscfh)*	73943000	76347000	76375000	75555000
Emission Rate(lb/hr)	31.83	14.57	11.90	19.43
Emission Rate(lbC/ton)	0.159	0.064	0.067	0.097
*dscf at 68 degF, 29.92" Hg.				
Allowable(lbs/ton)				0.13

Visibles (Method 9)

Test #	1	2	3	Total
No. of 6 Min. Sets	5	0	0	5
Sets greater than Std.	0	NA	NA	0
Average Opacity-%	0	NA	NA	0
Set Max/Min Opacity-	0/0	NA	NA	0/0

Operational Notes

1. Production during the tests was an average 202.2 T/hour.
2. The average pressure drop across the baghouse was a static 7.5" of HOH.
3. Fan Amps averaged 75 Amps (Range = 72-75).

Status as Tested:

Permit No. 0420-0060, Id. CC, Section II, VOC.....COMPLIANCE
Permit No. 0420-0060, Id. CC, Section II, Visibles.....COMPLIANCE

cc: Jake Frick
Jerry Chalmers
Larry Ragsdale
Beth Boland
Bruce Hennessee, Trident District
Main File

Report Received: September 8, 1997
Review Complete: September 11, 1997
Reviewer: Chris Corley

CC

Nucor Steel Corporation

Permit No. 0420-0060

Melt Shop Baghouse

Id. No CC

Huger, S. C.

Results - Tests of August 5-7, 1997

CO

Test #	Production tons/hr	Capacity1 %	Emissions lbs/hr	Emissions lbs/ton	Allowable lbs/ton
1	199.8	39.96	98.925	0.495	
2	228.6	45.72	210.389	0.92	
3	178.1	35.62	169.372	0.951	
Avg.	202.2	40.43	159.562	0.789	2.000

Rated capacity 500 tons.

Visibles (Method 9)

Test #	1	2	3
No. of 6 Min. Sets	5	0	0
Sets greater than std.	0	NA	NA
Average Opacity - %	0	NA	NA
Set Max/min opacity - %	0/0	NA	NA

Operational Notes

1. The average pressure drop across the baghouse was a static 7.5" of HOH.
2. Fan amps averaged 75 amps (Range=72-75).

Status as Tested:

Permit No. 0420-0060, Id. CC, Section II, CO.....COMPLIANCE

Permit No. 0420-0060, Id. CC, Section II, Visibles.....COMPLIANCE

cc: Jake Frick

Jerry Chalmers

Beth Boland

Larry Ragsdale

Bruce Hennessee, Trident District

Main File

Report Received : September 8, 1997

Review Complete : September 11, 1997

Reviewer: Chris Corley *CC*

Nucor Steel Corporation

Melt Shop Baghouse

Huger, S. C.

Permit No. 0420-0060

Id. No CC

Results - Tests of August 5-7, 1997

Nox

Test #	Production tons/hr	Capacity ¹ %	Emissions		Allowable lbs/ton
			lbs/hr	lbs/ton	
1	199.8	39.96	67.142	0.336	
2	228.6	45.72	72.974	0.319	
3	178.1	35.62	70.263	0.394	
Avg.	202.2	40.43	70.126	0.350	0.350

Rated capacity 500 tons.

Visibles (Method 9)

Test #	1	2	3
No. of 6 Min. Sets	5	0	0
Sets greater than std.	0	NA	NA
Average Opacity - %	0	NA	NA
Set Max/min opacity - %	0/0	NA	NA

Operational Notes

1. The average pressure drop across the baghouse was a static 7.5" of HOH.
2. Fan amps averaged 75 amps (Range = 72-75).

Status as Tested:

Permit No. 0420-0060, Id. CC, Section II, NOx.....COMPLIANCE

Permit No. 0420-0060, Id. CC, Section II, Visibles.....COMPLIANCE

cc: Jake Frick

Jerry Chalmers

Beth Boland

Larry Ragsdale

Bruce Hennessee, Trident District

Main File

Report Received : September 8, 1997

Review Complete : September 11, 1997

Reviewer: Chris Corley

Nucor Steel Corporation

Tunnel Furnaces

Huger, S. C.

Tests Results-August 8, 1997

Permit No. 0420-0060

Id No. CO

NOx Emissions:

East

Test	One	Two	Three	Average
Conc.(ppm)	67.2	65.5	73.2	68.6
Stack Flow Rate(dscfh)*	1053000	946000	901000	967000
Emission Rate(lb/hr)	8.45	7.40	7.88	7.91

*dscf at 68 degF, 29.92" Hg.

Allowable(lbs/hr) 23.8

West

Test	One	Two	Three	Average
Conc.(ppm)	56.4	55.4	51.1	54.3
Stack Flow Rate(dscfh)*	1083000	1051000	1041000	1058000
Emission Rate(lb/hr)	7.30	6.96	6.36	6.87

*dscf at 68 degF, 29.92" Hg.

Allowable(lbs/hr) 23.8

Operational Notes

1. Production during the tests was an average 148.125 T/hour.

Status as Tested:

S.C. Permit No. 0420-0060-CO (NOx).....COMPLIANCE

cc: Jake Frick

Jerry Chalmers

Larry Ragsdale

Beth Boland

Bruce Hennessee, Trident District

Main File

Report Received: September 8, 1997

Review Complete: September 11, 1997

Reviewer: Chris Corley



Nucor Steel Corporation**Melt Shop Baghouse****Huger, S. C.****Results - Tests of December 4, 1997**

Permit No. 0420-0060

Id. No CC

SO2

Test #	Production tons/hr	Capacity1 %	Emissions		Allowable lbs/ton
			lbs/hr	lbs/ton	
1	176.5	35.0	2.257	0.0127	
2	175.3	35.0	1.815	0.0135	
3	179.7	36.0	3.056	0.017	
Avg.	177.2	35.3	2.376	0.0144	0.200

Rated capacity 500 tons.

Operational Notes

1. The average pressure drop across the baghouse was 7.1" of HOH(Range=6.0-9.0).
2. Fan amps were as follows: EAF1 EAF2
 75 Down for repairs
3. No visibles were taken during the tests.
4. The interference check, as required by EPA reference method 6C, was waived because the detection limit of the modified method 6 sampling train was less than the concentration measured during the source tests.

Status as Tested:

Permit No. 0420-0060, Id. CC, Section II, SO2.....COMPLIANCE

cc: Jerry Chalmers
Beth Boland
Larry Ragsdale
Bruce Hennessee, Trident District
Main File

Report Received : January 5, 1998
Review Complete : January 15, 1998
Reviewer: Chris Corley CC



2600 Bull Street
Columbia, SC 29201-1708

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Cyndi C. Mosteller

Brian K. Smith

Rodney L. Grandy

January 15, 1998

Nucor Steel Corporation
P. O. Box 2259
Mt. Pleasant, South Carolina 29465
Attention: Mr. Ray Sims

A summary of the results of the recent source tests at the indicated facility is enclosed.

This summary includes the emission rates, operating parameters and compliance status of the source(s) tested.

Please review this data and if I can be of further assistance in these matters please call.

Sincerely,

Chris Corley
Air Compliance Management Division
Bureau of Air Quality

Enclosure

cc: Jerry Chalmers
Beth Boland
Larry Ragsdale
Bruce Hennessee, Trident District
Main File



100 Bull Street
Columbia, SC 29201-1708

October 14, 1997

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Rodney L. Grandy

Mr. Ray Sims
Nucor Steel Corporation
Post Office Box 2259
Mt. Pleasant, South Carolina 29465

Melt Shop Baghouse
RE: Particulate, lead, Co, Nox, VOC, and SO2 Test-August 5-7, 1997

A summary of the recent source tests at the indicated facility is enclosed. This summary includes the emission rates, operating parameters, and compliance status of the source tested.

Pursuant to permit number 0420-0060; PM, Pb, CO, Nox, and VOC emissions are determined to be in compliance. However, SO2 emissions are in a noncompliance status as of now. Therefore, you must submit in writing, within 10 calendar days, a description of any known or suspected reasons for the tested failure, along with any actions planned or taken to return the facility to compliance.

You will be considered as operating in noncompliance until results of additional tests indicate you have returned to compliance. When corrective measures have been completed and you are prepared to schedule a retest, the Bureau must be notified at least two weeks before any proposed compliance tests so the Department may observe the test if it desires to do so.

Please contact Mr. Thomas Lathan at (803)734-8459 with this advance notification to schedule your source tests.

Sincerely,

Chris Corley
Air Compliance Management Division
Bureau of Air Quality

cc: Jake Frick
Jerry Chalmers
Dennis Ellenwood
Ron Garrett, App. III District
Main File



00 Bull Street
Columbia, SC 29201-1708

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Cyndi C. Mosteller

Brian K. Smith

Rodney L. Grandy

October 14, 1997

Nucor Steel Corporation
P. O. Box 2259
Mt. Pleasant, South Carolina 29465
Attention: Mr. Ray Sims

A summary of the results of the recent source tests at the indicated facility is enclosed.

This summary includes the emission rates, operating parameters and compliance status of the source(s) tested.

Please review this data and if I can be of further assistance in these matters please call.

Sincerely,

Mr. Chris Corley
Air Compliance Management Division
Bureau of Air Quality

Enclosure

cc: Jerry Chalmers
Beth Boland
Larry Ragsdale
Bruce Hennessee, Trident district
Main File

**Nucor Steel
Galvanizing Line Stack
Huger, SC**

**Permit No. 0420-0060
Id. No. CT**

Results - Tests of December 1, 1998

NOX:

Test #	Production Tons/hr	Emissions		Allowable lbs/hr
		ppm	lbs/hr	
1	75	3.8	0.565	6.44
2	70	2.6	0.417	6.44
3	85	1.9	0.295	6.44
Avg.	76.7	2.767	0.426	6.44

Visibles:(Method 9)

Test #	1	2	3
Min. of Observation	72	72	72
Sets Greater than Std.	0	0	0
Average Opacity - %	1	2	1
Set Max/Min Opacity - %	01\01	03\02	02\01

Operational Notes:

1. The preheat furnace averaged 49003 SCFH of natural gas during testing
2. The radiant tube furnace averaged 20150 SCFH of natural gas during testing.
3. The opacity limit is 20 %.

Status as Tested:

Per Permit No. 0420-0060-CT(NOX).....COMPLIANCE
Per Permit No. 0420-0060-CT(Visibles).....COMPLIANCE

cc: Jake Frick
Annie Richardson
Alyson McMurray
Bruce Hennesse; Trident District
Main File

Report Received: January 4, 1999
Review Complete: September 29, 1999
Reviewer: Michael Branton

MB



PROMOTE PROTECT PROSPER

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Cyndi C. Mosteller

Brian K. Smith

Rodney L. Grandy

October 01, 1999

Nucor Steel Corporation
1455 Hagan Avenue
Huger, SC 29405
Attention: Mr. Brian Hill

A summary of the results of the recent source tests at the indicated facility is enclosed.

This summary includes the emission rates, operating parameters and compliance status of the source(s) tested.

Please review this data and if I can be of further assistance in these matters please call.

Sincerely,

Michael Branton
Air Compliance Management Division
Bureau of Air Quality

Enclosure

cc: Jake Frick
Annie Richardson
Alyson McMurray
Bruce Hennessee; Trident District
Main File

**Nucor Steel
Galvanizing Line Stack
Huger, SC**

**Permit No. 0420-0060
Id. No. CT**

Results - Tests of December 1, 1998

NOX:

Test #	Production Tons/hr	Emissions		Allowable
		ppm	lbs/hr	lbs/hr
1	75	3.8	0.565	6.44
2	70	2.6	0.417	6.44
3	85	1.9	0.295	6.44
Avg.	76.7	2.767	0.426	6.44

Visibles:(Method 9)

Test #	1	2
Min. of Observation	72	72
Sets Greater than Std.	0	0
Average Opacity - %	1	2
Set Max/Min Opacity - %	01\01	03\02

*Not enough
process info*

Operational Notes:

1. The preheat furnace averaged 49003 SCFH of natural gas during testing
2. The radiant tube furnace averaged 20150 SCFH of natural gas during testing.
3. The opacity limit is 20 %.

Status as Tested:

Per Permit No. 0420-0060-CT(NOX).....COMPLIANCE
Per Permit No. 0420-0060-CT(Visibles).....COMPLIANCE

cc: Jake Frick
Annie Richardson
Alyson McMurray
Bruce Hennesse; Trident District
Main File

Report Received: January 4, 1999
Review Complete: September 29, 1999
Reviewer: Michael Branton

MB



2600 Bull Street
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Brian K. Smith

Rodney L. Grandy

October 01, 1999

Nucor Steel Corporation
1455 Hagan Avenue
Huger, SC 29405
Attention: Mr. Brian Hill

A summary of the results of the recent source tests at the indicated facility is enclosed.

This summary includes the emission rates, operating parameters and compliance status of the source(s) tested.

Please review this data and if I can be of further assistance in these matters please call.

Sincerely,

Michael Branton
Air Compliance Management Division
Bureau of Air Quality

Enclosure

cc: Jake Frick
Annie Richardson
Alyson McMurray
Bruce Hennessee; Trident District
Main File

NUCOR STEEL CORPORATION
BEAM MILL REHEAT FURNACE
MOUNT PLEASANT, SOUTH CAROLINA
RESULTS - TESTS OF APRIL 20, 1999
PERMIT No. 0420-0060
Id. No. CW

NOX EMISSIONS (METHOD 7E)

TEST #	PRODUCTION TONS/HR	CAPACITY I %	EMISSIONS		ALLOWABLE LBS/HR
			PPM	LBS/HR	
*1	23.190	4.6%	52.600	7.473	27.75
2	309.200	61.8%	95.000	17.227	27.75
3	270.550	54.1%	103.800	20.797	27.75
4	255.090	51.0%	106.300	18.275	27.75
AVG.	278.280	55.7%	101.700	18.766	27.75

*RUN 1 WAS DISCARDED DUE TO LOW FUEL USAGE AND EXCEEDANCE OF INITIAL HIGH LEVEL CALIBRATION.
I BASED ON A PROCESS RATE OF 500.0 TONS/HR STEEL PROCESSED PLANT WIDE.

VISIBLES (METHOD 9)

TEST #	4
NO. OF 6 MIN. SETS	3
SETS GREATER THAN STD.	0
AVERAGE OPACITY - %	0
SET MAX/MIN OPACITY - %	0/0

OPERATIONAL NOTES

1. THE BEAM MILL REHEAT FURNACE UTILIZES LOW NOX BURNERS.
2. NATURAL GAS WAS USED AS FUEL FOR THE FURNACE.
3. THE BEAM MILL REHEAT FURNACE IS RATED AT 185.0 MMBTU/HR.
4. THE BEAM MILL REHEAT FURNACE OPERATED AT AN AVERAGE OF 82.2 MMBTU/HR (44.4%).
5. THE OPACITY STANDARD EQUALS 20.0%

STATUS AS TESTED:

S.C. BAQ PERMIT 0420-0060, Id # CW, SPECIAL CONDITIONS (NOx).....(COMPLIANCE)
S.C. BAQ PERMIT 0420-0060, Id # CW, SPECIAL CONDITIONS (VISIBLES).....(COMPLIANCE)

CC: JAKE FRICK
ANNIE RICHARDSON
JOE C. ELLER
DON SMITH, PEE DEE DISTRICT
MAIN FILE

REPORT RECEIVED: 06/21/99
REVIEW COMPLETE: 11/22/99 (REVISION)
REVIEWER: JASON D. HOBBS



2600 Bull Street
Columbia, SC 29201-1708 November 22, 1999

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Rodney L. Grandy

Larry R. Chewning, Jr., DMD

Nucor Steel Corporation
1455 Hagan Avenue
Mount Pleasant, South Carolina 29450
Attention: Mr. Brian Hill

**RE: Final Test Report Summary Revision for Meltshop Baghouse
Nucor Steel Corporation, Mount Pleasant, S.C.
SCDHEC BAQ Permit No. 0420-0060 Id. No. CW**

Dear Mr. Hill:

A revised summary of results from source testing conducted on August 14, 1999 is enclosed. In the original summary, VEE data from a different source was used in determining the compliance status of the beam mill furnace. A VEE violation was cited on the previous report summary dated November 19, 1999. This has been corrected on the revised summary.

This summary includes the emission rates, operating parameters, and compliance status of the sources tested.

Please review the data and if I can be of any further assistance, feel free to contact me at (803) 898-3844

Sincerely,

Jason D. Hobbs
Environmental Chemist
Division of Air Compliance Management
Bureau of Air Quality

Cc: Jake Frick
Annie Richardson
Robbie Brown
John McLauchlin, Lower Savannah District
Main File

NUCOR STEEL CORPORATION
MELTSHOP BAGHOUSE
MOUNT PLEASANT, SOUTH CAROLINA
RESULTS - TESTS OF MAY 13, 1999
P30
PERMIT NO. 0420-0060
ID # CA

PARTICULATE EMISSIONS (METHOD 3)

TEST #	PRODUCTION	CAPACITY 1	EMISSIONS		ALLOWABLE	
	TONS/HR	%	GR/OSCF	LB/HR	GR/OSCF	LB/HR
1	367.0	73.4%	7.11E-04	6.973	3.50E-03	37.3
2	369.0	73.8%	1.31E-03	12.623	3.50E-03	37.3
3	370.0	74.0%	7.84E-04	7.332	3.50E-03	37.3
Avg.	368.7	73.7%	9.35E-04	9.043	3.50E-03	37.30

1 BASED ON A PROCESS RATE OF 500.0 TONS/HR STEEL PROCESSED

LEAD EMISSIONS (METHOD 12)

TEST #	PRODUCTION	CAPACITY 1	EMISSIONS		ALLOWABLE	
	TONS/HR	%	GR/OSCF	LB/HR	LB/HR	
1	367.0	73.4%	1.69E-06	0.0165	0.164	
2	369.0	73.8%	1.95E-06	0.0188	0.164	
3	370.0	74.0%	1.28E-06	0.0123	0.164	
Avg.	368.7	73.7%	1.64E-06	0.0159	0.16	

1 BASED ON A PROCESS RATE OF 500.0 TONS/HR STEEL PROCESSED

CO, NOX, SO2, AND VOC EMISSIONS

COMPOUNDS		RUN 1	RUN 2	RUN 3	AVERAGE	ALLOWABLE
		LB/HR	LB/HR	LB/HR	LB/HR	LB/HR
CO	(METHOD 10)	231.076	187.269	211.253	209.866	1000.0
SO2	(METHOD 6c)	15.960	12.333	16.776	15.030	100.0
NOX	(METHOD 7e)	56.566	60.395	51.409	56.123	175.0
VOC*	(METHOD 25a)	11.078	7.666	9.590	9.451	65.0
PRODUCTION TONS/DAY		367.0	369.0	370.0	368.7	
CAPACITY 1 %		73.4%	73.8%	74.0%	73.7%	

*REPORTED AS CARBON

1 BASED ON A PROCESS RATE OF 500.0 TONS/HR STEEL PROCESSED

VISIBILITIES (METHOD 9)

TEST #	1	2	3
NO. OF 6 MIN. SETS	3	3	3
SETS GREATER THAN STD.	0	0	0
AVERAGE OPACITY - %	0	0	0
SET MAX/MIN OPACITY - %	0/0	0/0	0/0

OPERATIONAL NOTES

1. NO MATRIX EFFECTS WERE DETECTED DURING THE ANALYSIS FOR LEAD.
2. TESTING WAS CONDUCTED ON A SATURDAY IN ORDER TO REACH MAXIMUM CAPACITY.
3. THE PRESSURE DROP ACROSS THE BAGHOUSE AVERAGED 12.5 INCHES H2O WITH A MAXIMUM OF 13.0 INCHES H2O AND A MINIMUM OF 12.0 INCHES H2O.
4. THE FOURTH HOLE DIFFERENTIAL PRESSURE AVERAGED -0.74 INCHES H2O WITH A MAXIMUM OF -0.26 INCHES H2O AND A MINIMUM OF -1.03 INCHES H2O.
5. THE BAGHOUSE OPERATES ON A CONTINUOUS CLEANING CYCLE.
6. THE AVERAGES OF THE MELTSHOP FAN AMPS ARE AS FOLLOWS (FAN ID#, AVERAGE AMPS, MAX AMPS, MIN AMPS)
MAF#1, 0.0, 0.0, 0.0; MAF#2, 135.3, 140.0, 133.0; MAF#3, 137.6, 140.0, 135.0;
MAF#4, 139.0, 143.0, 135.0; MAF#5, 136.9, 141.0, 133.0; MAF#6, 142.0, 146.0, 136.0

STATUS AS TESTED:

S.C. BAO PERMIT 0420-0060, ID # CA, SPECIAL CONDITIONS (NOX, PM, SO2, VOC, LEAD).....(COMPLIANCE)
S.C. BAO PERMIT 0420-0060, ID # CA, SPECIAL CONDITIONS (VISIBLES).....(COMPLIANCE)
ALL BACT LIMITS.....(COMPLIANCE)

CC: JERRY CHALMERS
ANNIE RICHARDSON
ALYSON McMURRAY
DON SMITH, PEE DEE DISTRICT
MAIN FILE

REPORT RECEIVED: 06/21/99
REVIEW COMPLETE: 11/24/99
REVIEWER: JASON D. HOBBS



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Brian K. Smith

Rodney L. Grandy

Larry R. Chewning, Jr., DMD

November 24, 1999

Nucor Steel Corporation
1455 Hagan Avenue
Huger, SC 29405
Attention: Mr. Brian Hill

A summary of the results of the recent source tests at the indicated facility is enclosed.

This summary includes the emission rates, operating parameters and compliance status of the source(s) tested.

Please review this data and if I can be of further assistance in these matters please call.

Sincerely,

Jason D. Hobbs
Air Compliance Management Division
Bureau of Air Quality

Enclosure

cc: Jake Frick
Annie Richardson
Alyson McMurray
Don Smith, Pee Dee District
Main File

NUCOR STEEL
TUNNEL FURNACE No. 2
MOUNT PLEASANT, SOUTH CAROLINA
RESULTS - TESTS OF JANUARY 8, 2001
PERMIT No. 0420-0060 ID No. CX

NOX EMISSIONS (METHOD 7E)

TEST #	PRODUCTION MMBTU/HR	CAPACITY %	EMISSIONS		ALLOWABLE	
			LBS/HR	LBS/MMBTU	LBS/HR	LBS/MMBTU
1	58.4	87.2%	10.122	0.173	21.250	0.170
2	54.9	81.9%	10.797	0.197	21.250	0.170
3	52.8	78.8%	11.188	0.212	21.250	0.170
AVG.	55.4	82.6%	10.702	0.194	21.250	0.170

| BASED ON A DESIGN RATE OF 67.0 MMBTU/HR (FOR SECTION #1 ONLY)

OPERATIONAL NOTES

1. NO VEEs WERE CONDUCTED.
2. NATURAL GAS CONSUMPTION AVERAGED 53197.0 SCF/HR FOR TUNNEL FURNACE No. 2.
3. TUNNEL FURNACE No. 2 UTILIZES A LOW NOX BURNER.
4. AFTER INSPECTION OF THE FURNACE FOLLOWING TESTING, IT WAS NOTED THAT THE UNIT WAS NOT OPERATED AS DESIGNED DUE TO EXCESS AIR ENTERING THE FURNACE.
5. TUNNEL FURNACE No. 2 IS PERMITTED AT HAVING A MAXIMUM RATE OF 125.0 MMBTU/HR.
(SECTION #1,2,3 - 67.0 MMBTU/HR, 18.0 MMBTU/HR, 40.0 MMBTU/HR, RESPECTIVELY)
6. THE ALLOWABLE EMISSION RATES ARE FOR SECTIONS #1,2, AND 3 COMBINED.
7. AT THE TIME OF TESTING, SECTIONS #2 AND 3 HAD NOT BEEN COMPLETED.
8. A RE-TEST OF THE UNIT WAS SCHEDULED FOR FEBRUARY 27, 2001.

STATUS AS TESTED:

S.C. BAQ PERMIT 0420-0060, Id No. CX, (NOX LIMIT OF 21.25 LBS/HR).....(COMPLIANCE)
S.C. BAQ PERMIT 0420-0060, Id No. CX, (NOX LIMIT OF 0.17 LBS/MMBTU).....(VIOLATION)

CC: JAKE FRICK
ANNIE RICHARDSON
NATALIE LOQUIST
BRUCE HENNESSEE, TRIDENT DISTRICT
MAIN FILE

REPORT RECEIVED: 02/07/01
REVIEW COMPLETE: 06/11/01
REVIEWER: JASON D. HOBBS

NUCOR STEEL
TUNNEL FURNACE No. 2
MOUNT PLEASANT, SOUTH CAROLINA
RESULTS - TESTS OF FEBRUARY 27, 2001
PERMIT No. 0420-0060 ID No. CX

NOX EMISSIONS (METHOD 7E)

TEST #	PRODUCTION MMBTU/HR	CAPACITY 1 %	EMISSIONS		ALLOWABLE	
			LBS/HR	LBS/MMBTU	LBS/HR	LBS/MMBTU
1	62.1	92.7%	4.789	0.077	21.250	0.170
2	61.4	91.6%	4.289	0.070	21.250	0.170
3	62.0	92.5%	4.218	0.068	21.250	0.170
AVG.	61.8	92.3%	4.432	0.072	21.250	0.170

1 BASED ON A DESIGN RATE OF 67.0 MMBTU/HR (FOR SECTION #1 ONLY)

VISIBLES (METHOD 9)

TEST #	1	2	3
NO. OF 6 MIN. SETS	3	3	3
SETS GREATER THAN STD.	0	0	0
AVERAGE OPACITY - %	0	0	0
SET MAX/MIN OPACITY - %	0/0	0/0	0/0

OPERATIONAL NOTES

1. THIS TEST WAS CONDUCTED AS A RE-TEST TO A FAILED TEST CONDUCTED ON 01/08/01.
2. THE FURNACE PRESSURE WAS INCREASED FROM THE 01/08/01 TEST TO LIMIT THE EXCESS AIR ENTERING THE FURNACE. THIS HIGHER PRESSURE IS NOW THE STANDARD FOR THIS UNIT.
3. NATURAL GAS CONSUMPTION AVERAGED 60,598.0 SCF/HR FOR TUNNEL FURNACE No. 2.
4. TUNNEL FURNACE No. 2 UTILIZES A LOW NOX BURNER.
5. TUNNEL FURNACE No. 2 IS PERMITTED AT HAVING A MAXIMUM RATE OF 125.0 MMBTU/HR.
(SECTION #1,2,3 - 67.0 MMBTU/HR, 18.0 MMBTU/HR, 40.0 MMBTU/HR, RESPECTIVELY)
6. THE ALLOWABLE EMISSION RATES ARE FOR SECTIONS #1,2, AND 3 COMBINED.
7. AT THE TIME OF TESTING, SECTIONS #2 AND 3 HAD NOT BEEN COMPLETED.

STATUS AS TESTED:

S.C. BAQ PERMIT 0420-0060, ID No. CX, (NOX LIMIT OF 21.25 LBS/HR).....(COMPLIANCE)
S.C. BAQ PERMIT 0420-0060, ID No. CX, (NOX LIMIT OF 0.17 LBS/MMBTU).....(COMPLIANCE)
S.C. BAQ PERMIT 0420-0060, ID No. CX, (OPACITY LIMIT OF 20.0%).....(COMPLIANCE)

CC: JAKE FRICK
ANNIE RICHARDSON
NATALIE LOQUIST
BRUCE HENNESSEE, TRIDENT DISTRICT
MAIN FILE

REPORT RECEIVED: 03/05/01
REVIEW COMPLETE: 06/11/01
REVIEWER: JASON D. HOBBS

NUCOR STEEL CORPORATION
MELTSHOP BAGHOUSE
MOUNT PLEASANT, SOUTH CAROLINA
RESULTS - TESTS OF AUGUST 23 & 24, 2001
PERMIT NO. 0420-0060
ID # CA

PARTICULATE EMISSIONS (METHOD 5)

TEST #	PRODUCTION TONS/HR	CAPACITY I %	EMISSIONS GR/DSCF	EMISSIONS LBS/HR	ALLOWABLE GR/DSCF	ALLOWABLE LBS/HR
1	445.0	89.0%	3.82E-04	3.500	3.50E-03	37.3
2	421.7	84.3%	3.54E-04	3.400	3.50E-03	37.3
3	387.8	77.6%	3.41E-04	3.150	3.50E-03	37.3
AVG.	418.2	83.6%	3.59E-04	3.350	3.50E-03	37.30

1 BASED ON A PROCESS RATE OF 500.0 TONS/HR STEEL PROCESSED

LEAD EMISSIONS (METHOD 12)

TEST #	PRODUCTION TONS/HR	CAPACITY I %	EMISSIONS GR/DSCF	EMISSIONS LBS/HR	ALLOWABLE LBS/HR
1	445.0	89.0%	4.66E-07	0.0043	0.184
2	421.7	84.3%	4.42E-07	0.0042	0.184
3	387.8	77.6%	4.60E-07	0.0043	0.184
AVG.	418.2	83.6%	4.56E-07	0.0043	0.18

1 BASED ON A PROCESS RATE OF 500.0 TONS/HR STEEL PROCESSED

CO, NOx, SO2, AND VOC EMISSIONS

COMPOUNDS		RUN 1 LBS/HR	RUN 2 LBS/HR	RUN 3 LBS/HR	AVERAGE LBS/HR	ALLOWABLE LBS/HR
CO	(METHOD 10)	99.450	241.580	223.280	188.103	1000.0
SO2	(METHOD 6c)	39.980	40.850	39.180	40.003	100.0
NOx	(METHOD 7E)	45.290	48.230	37.870	43.797	175.0
VOC*	(METHOD 25a)	16.580	12.310	13.050	13.980	65.0
PRODUCTION TONS/DAY		434.2	437.3	426.4	432.6	
CAPACITY I %		86.8%	87.5%	85.3%	86.5%	

*REPORTED AS CARBON

1 BASED ON A PROCESS RATE OF 500.0 TONS/HR STEEL PROCESSED

VISIBLES (METHOD 9)

TEST #	1	2	3
NO. OF 5 MIN. SETS	3	3	3
SETS GREATER THAN STD.	0	0	0
AVERAGE OPACITY - %	0	0	0
SET MAX/MIN OPACITY - %	0/0	0/0	0/0

OPERATIONAL NOTES

1. NO MATRIX EFFECTS WERE DETECTED DURING THE ANALYSIS FOR LEAD.
2. TESTING WAS CONDUCTED ON A SATURDAY IN ORDER TO REACH MAXIMUM CAPACITY.
3. THE PRESSURE DROP ACROSS THE BAGHOUSE AVERAGED 12.5 INCHES H2O WITH A MAXIMUM OF 13.0 INCHES H2O AND A MINIMUM OF 12.0 INCHES H2O.
4. THE FOURTH HOLE DIFFERENTIAL PRESSURE AVERAGED -0.74 INCHES H2O WITH A MAXIMUM OF -0.26 INCHES H2O AND A MINIMUM OF -1.03 INCHES H2O.
5. THE BAGHOUSE OPERATES ON A CONTINUOUS CLEANING CYCLE.
6. THE AVERAGES OF THE MELTSHOP FAN AMPS ARE AS FOLLOWS (FAN ID#, AVERAGE AMPS, MAX AMPS, MIN AMPS)
MAF#1, 0.0, 0.0, 0.0; MAF#2, 135.3, 140.0, 133.0; MAF#3, 137.6, 140.0, 135.0;
MAF#4, 139.0, 143.0, 135.0; MAF#5, 136.9, 141.0, 133.0; MAF#6, 142.0, 146.0, 136.0

STATUS AS TESTED:

S.C. BAQ PERMIT 0420-0060, ID # CA, SPECIAL CONDITIONS (NOx, PM, SO2, VOC, LEAD)....(COMPLIANCE)
S.C. BAQ PERMIT 0420-0060, ID # CA, SPECIAL CONDITIONS (VISIBLES).....(COMPLIANCE)
ALL BACT LIMITS.....(COMPLIANCE)

CC: JERRY CHALMERS
ANNIE RICHARDSON
ALYSON McMURRAY
DON SMITH, FEE DEE DISTRICT
MAIN FILE

REPORT RECEIVED: 06/21/99
REVIEW COMPLETE: 11/24/99
REVIEWER: JASON D. HOBBS

Nucor Steel Inc.
Cold Reversing Mill No. 2 (CRM2)
Huger, South Carolina
Permit No. TV-0420-0060
ID No. 09 Stack 309
Test of Oct. 10, 2001

Particulate (Method 5)

Test #	Production tons/hr	Capacity 1 %	Emissions gr/dscf	Emissions lb/hr	Allowables lb/hr
1	92.47	50.5	0.0032	2.768	3.2
2	149.19	81.5	0.0031	2.622	3.2
3	172.80	94.4	0.0032	2.596	3.2
Average	138.15	75.5	0.0032	2.662	3.2

Based on the rated process of 183 tons/hr. (SSTP~2001)

Visibles (Method 9)

Test #	1	2	3
No. of 6 Min Sets	3	3	3
Sets Greater Than Standard	0	0	0
Average Opacity %	0.625	0.42	0.42
Set Max/Min Opacity %	1/0	1/0	1/0

Operational Notes

1. PM/PM10 emissions are limited to 3.2 lbs/hr and 14 TPY to avoid triggering PSD.
2. The control device, a Busch PPS/DBF High Efficiency Mist Eliminator, removes particulate (down to .03 micron) by inertial impaction, direct inception and Brownian capture.
3. The fan amps averaged 41.66 and ranged from 41.05 to 42.71 during the test.
4. The opacity limit is 20%.
5. Control device ID # ME2 (Mist Eliminator 2).
6. Visible Emissions were done by plant personnel.
7. Same ID # 9 for Cold Reversing Mills 1 & 2.
8. Normal production approximately 100 tons/hr.

Status as Tested:

Permit no. TV-0420-0060-Emissions Limits and Standards(Particulate).....Compliance
Permit no. TV-0420-0060-Emissions Limits and Standards(Visibles).....Compliance

cc: Jake Frick
Annie Richardson
Debra Basnight
Carol Boney
Bruce Hennessee, Trident District
Main File

Report Received: 11/29/2001
Report Completed: 12/19/2001
Report Reviewer: Teresie Walker

NOTE: Draft determinations are marked with a " * " beside the RBLC ID.

Report Date: 09/17/2002

Control Technology Determinations (Freeform)

FACILITY INFORMATION : NUCOR STEEL

RBLC Id: *SC-0039
*Company Name: NUCOR STEEL
*Plant Name: NUCOR STEEL
Plant County: BERKELEY
Plant Contact Name:
Plant Contact Address: 1455 HAGAN AVE.
Plant Contact City: HUGER
Plant Contact State: SC
Plant Contact Zip Code: 29450-
Plant Contact Phone:
Plant Contact Email:
EPA Region: 4
Agency Code: SC001
Agency Name: SOUTH CAROLINA DEPT OF HEALTH & ENV CTRL
Agency Contact: LARRY RAGSDALE
Agency Phone: (803) 734-4750
Agency Email:
*Permit/File No.: 0420-0060
*SIC: 3312
NAICS: 331111
Airs Id: 4501500060
EPA Id:
UTM Zone:
X Coordinate:
Y coordinate:
Application Received Date: 03/10/1995 ACT
Permit Issuance Date: 08/16/1995 ACT
Start Up Date:
Compliance Validation Date:
Entry Date: 08/19/1996
Last Update: 09/17/2002
New or Modified: N
Public Hearing:
Fuel:
Emission Sources:
Abatement:
Narrative:
Notes: Maximum Rated Capacity Is 500 Tons of Slab Steel per Hour

PROCESS INFORMATION : NUCOR STEEL

*Process: ELECTRIC ARC FURNACE
*Process Type: 81.007
*SCC Code: 3-03-015-40
Primary Fuel: ELECTRICITY
Throughput: 165
Throughput Unit: TONS
Compliance Verified: No
Stack Testing: No
Inspections: No
Calculations: No
Other Testing: No
Other Testing Method:
Process/Compliance
Notes:

POLLUTANT INFORMATION : NUCOR STEEL - ELECTRIC ARC FURNACE

*Pollutant PM
*CAS Number: PM
*Control Method Code: A
*Control Method
Description: NEGATIVE PRESSURE BAGHOUSE
Number of Options 1
Considered:
Rank of Option Selected: 1
Emission Limit 1: .0035
Emission Limit 1 Unit: GR/DSCF
Emission Limit 1
Condition:
*Basis: BACT-PSD
*Percent Efficiency: 0
Emission Limit 2: 163
Emission Limit 2 Unit: T/YR
Emission Limit 2
Condition:
Standard Emission: .0035
Standard Emission Unit: GR/DSCF
Standard Emission
Condition:
*Emission Type: P
CAP Cost of Control \$ 0
Equipment:
Annualized Cost:
O&M Cost:
Cost Effectiveness:
Cost Verified by Agency: No
Dollar Year Used In Cost
Estimates:
Pollutant Notes:

*Pollutant SO2
*CAS Number: 7446-09-5
*Control Method Code: P
*Control Method Description: SULFUR CONTENT OF COKE<0.65%
Number of Options 4
Considered:
Rank of Option Selected: 4
Emission Limit 1: .2
Emission Limit 1 Unit: LB/T
Emission Limit 1 Condition: STEEL PRODUCED
*Basis: BACT-PSD
*Percent Efficiency: 0
Emission Limit 2: 438
Emission Limit 2 Unit: T/YR
Emission Limit 2 Condition:
Standard Emission: 0
Standard Emission Unit:
Standard Emission Condition:
*Emission Type: P
CAP Cost of Control \$ 0
Equipment:
Annualized Cost:
O&M Cost:
Cost Effectiveness:
Cost Verified by Agency: No
Dollar Year Used In Cost
Estimates:
Pollutant Notes:

*Pollutant NOX
*CAS Number: 10102
*Control Method Code: P
*Control Method Description: LOW NOX BURNERS IN ELECTRIC ARC FURNACE SHELLS
Number of Options 1
Considered:
Rank of Option Selected: 1
Emission Limit 1: .35
Emission Limit 1 Unit: LB/T
Emission Limit 1 Condition: STEEL PRODUCED
*Basis: BACT-PSD
*Percent Efficiency: 0
Emission Limit 2: 767
Emission Limit 2 Unit: T/YR
Emission Limit 2 Condition:

Standard Emission: 0
Standard Emission Unit:
Standard Emission
Condition:
*Emission Type: P
CAP Cost of Control \$ 0
Equipment:
Annualized Cost:
O&M Cost:
Cost Effectiveness:
Cost Verified by Agency: No
Dollar Year Used In Cost
Estimates:
Pollutant Notes:

*Pollutant CO
*CAS Number: 630-08-0
*Control Method Code: B
*Control Method FOAMING SLAG PROCESS AND DIRECT SHELL EVACUATION
Description: CONTROLS
Number of Options 8
Considered:
Rank of Option Selected: 8
Emission Limit 1: 2
Emission Limit 1 Unit: LB/T
Emission Limit 1 STEEL PRODUCED
Condition:
*Basis: BACT-PSD
*Percent Efficiency: 0
Emission Limit 2: 4380
Emission Limit 2 Unit: T/YR
Emission Limit 2
Condition:
Standard Emission: 0
Standard Emission Unit:
Standard Emission
Condition:
*Emission Type: P
CAP Cost of Control \$ 0
Equipment:
Annualized Cost:
O&M Cost:
Cost Effectiveness:
Cost Verified by Agency: No
Dollar Year Used In Cost
Estimates:
Pollutant Notes:

*Pollutant VOC
*CAS Number: VOC
*Control Method Code: P

*Control Method
Description: SCRAP MANAGEMENT PROGRAM
Number of Options 3
Considered:
Rank of Option Selected: 3
Emission Limit 1: .13
Emission Limit 1 Unit: LB/T
Emission Limit 1
Condition: STEEL PRODUCED
*Basis: BACT-PSD
*Percent Efficiency: 0
Emission Limit 2: 0
Emission Limit 2 Unit:
Emission Limit 2
Condition:
Standard Emission: 0
Standard Emission Unit:
Standard Emission
Condition:
*Emission Type: P
CAP Cost of Control \$ 0
Equipment:
Annualized Cost:
O&M Cost:
Cost Effectiveness:
Cost Verified by Agency: No
Dollar Year Used In Cost
Estimates:
Pollutant Notes:

*Pollutant PB
*CAS Number: 7439-92-1
*Control Method Code: A
*Control Method
Description: NEGATIVE PRESSURE BAGHOUSE
Number of Options 1
Considered:
Rank of Option Selected: 1
Emission Limit 1: .0003
Emission Limit 1 Unit: LB/T
Emission Limit 1
Condition: STEEL PRODUCED
*Basis: BACT-PSD
*Percent Efficiency: 0
Emission Limit 2: 0
Emission Limit 2 Unit:
Emission Limit 2
Condition:
Standard Emission: 0
Standard Emission Unit:
Standard Emission

Condition:
*Emission Type: P
CAP Cost of Control \$ 0
Equipment:
Annualized Cost:
O&M Cost:
Cost Effectiveness:
Cost Verified by Agency: No
Dollar Year Used In Cost
Estimates:
Pollutant Notes:

PROCESS INFORMATION : NUCOR STEEL

*Process: TUNNEL FURNACE
*Process Type: 12.310
*SCC Code: 3-03-015-84
Primary Fuel: NATURAL GAS
Throughput: 125
Throughput Unit: MMBTU
Compliance Verified: No
Stack Testing: No
Inspections: No
Calculations: No
Other Testing: No
Other Testing Method:
Process/Compliance
Notes:

POLLUTANT INFORMATION : NUCOR STEEL - TUNNEL FURNACE

*Pollutant NOX
*CAS Number: 10102
*Control Method Code: P
*Control Method LOW NOX BURNERS
Description:
Number of Options 4
Considered:
Rank of Option Selected: 4
Emission Limit 1: 190
Emission Limit 1 Unit: LB/MMCF NAT. GAS
Emission Limit 1
Condition:
*Basis: BACT-PSD
*Percent Efficiency: 0
Emission Limit 2: 0
Emission Limit 2 Unit:
Emission Limit 2
Condition:

Standard Emission: 0
Standard Emission Unit:
Standard Emission
Condition:
*Emission Type: P
CAP Cost of Control \$ 0
Equipment:
Annualized Cost:
O&M Cost:
Cost Effectiveness:
Cost Verified by Agency: No
Dollar Year Used In Cost
Estimates:
Pollutant Notes:

*Pollutant SO2
*CAS Number: 7446-09-5
*Control Method Code: P
*Control Method FUEL SPEC: USE OF NATURAL GAS AND PROPANE AS BACKUP
Description: FUEL
Number of Options 0
Considered:
Rank of Option Selected: 0
Emission Limit 1: 0
Emission Limit 1 Unit: SEE P2
Emission Limit 1
Condition:
*Basis: BACT-PSD
*Percent Efficiency: 0
Emission Limit 2: 0
Emission Limit 2 Unit:
Emission Limit 2
Condition:
Standard Emission: 0
Standard Emission Unit:
Standard Emission
Condition:
*Emission Type: P
CAP Cost of Control \$ 0
Equipment:
Annualized Cost:
O&M Cost:
Cost Effectiveness:
Cost Verified by Agency: No
Dollar Year Used In Cost
Estimates:
Pollutant Notes:

PROCESS INFORMATION : NUCOR STEEL

*Process: SLAG PROCESSING
*Process Type: 81.007
*SCC Code: 3-03-015-90
Primary Fuel:
Throughput: 200
Throughput Unit: T/HR
Compliance Verified: No
Stack Testing: No
Inspections: No
Calculations: No
Other Testing: No
Other Testing Method:
Process/Compliance
Notes:

POLLUTANT INFORMATION : NUCOR STEEL - SLAG PROCESSING

*Pollutant VE
*CAS Number: VE
*Control Method Code: P
*Control Method
Description: USE OF SLAG POTS AND WATER SPRAYS
Number of Options
Considered: 1
Rank of Option Selected: 1
Emission Limit 1: 10
Emission Limit 1 Unit: % OPACITY
Emission Limit 1
Condition:
*Basis: BACT-PSD
*Percent Efficiency: 0
Emission Limit 2: 0
Emission Limit 2 Unit:
Emission Limit 2
Condition:
Standard Emission: 10
Standard Emission Unit: % OPACITY
Standard Emission
Condition:
*Emission Type: P
CAP Cost of Control \$ 0
Equipment:
Annualized Cost:
O&M Cost:
Cost Effectiveness:
Cost Verified by Agency: No
Dollar Year Used In Cost
Estimates:
Pollutant Notes: