

217/782-2113

CONSTRUCTION PERMIT

PERMITTEE

Color Communications, Inc.
Attn: Steve Winter
4000 West Fillmore
Chicago, Illinois 60624-3916

Application No.: 00080079 I.D. No.: 031600BGU
Applicant's Designation: 031600BGU Date Received: August 18, 2000
Subject: New Line 2
Date Issued: May 23, 2001
Location: 4242 West Fillmore Street, Chicago

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of new Coating Line 2 as described in the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

1.0 UNIT SPECIFIC CONDITIONS

1.1 Group 1: Coating Lines

1.1.1 Description

Six flow coating lines (4242 West Fillmore) apply latex and/or lacquer coating to paper and film substrate in the production of color boards. Line #2 is a new line.

1.1.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Equipment	Description	Emission Control Equipment
Group 1	Coating Lines	Date of Construction: <u>Line #1</u> - 1993 <u>Line #2</u> - 2001, Routed to an Afterburner in 2001 <u>Line #3</u> - 1959, Routed to an Afterburner in 1994 <u>Line #4</u> - 1985 <u>Line #5</u> - 1999 <u>Line #6</u> - 1999	Permanent Total Enclosure and Catalytic Oxidizer (for Lines #2 and #3)

1.1.3 Applicability Provisions and Applicable Regulations

- a. An "affected coating line" for the purpose of these unit specific conditions is a paper coating operation that includes a coater operated either in the permanent total enclosure and controlled by the catalytic oxidizer or without VOM reduction system.

b. All affected coating lines at the source should either comply with the application of compliant coating as established by 35 IAC 218.204 (c) for paper coating or with a daily-weighted average VOM content limitations, as allowed by 35 IAC 218.205 (a). The following limitations are established for VOM content in paper coating:

i. 35 IAC 218.204 (c)

A. No owner or operator of an affected coating line shall apply at any time any coating in which the VOM content exceeds the following emission limitations. The following emission limitation is expressed in units of VOM per volume of coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied at each coating applicator:

<u>kg/l</u>	<u>lb/gal</u>
0.28	2.3

B. Compounds which are specifically exempted from the definition of VOM should be treated as water for the purpose of calculating the "less water" part of the coating composites.

ii. 35 IAC 218.205(a)

For paper coating operations the daily-weighted average VOM content shall not exceed 0.28 kg VOM/l (2.3 lb VOM/gal) of coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied during any day.

c. Affected coating lines Nos. 2 and 3 are subject to 35 IAC 218.207(b)(1), which requires that the coating line be equipped with a capture system and control device that provides 81% reduction in the overall emissions of VOM and the control device is at least 90% efficient.

d. The affected coating line #3 is subject to 35 IAC 212.322(b)(1), which provides that:

No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit,

either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced prior to April 14, 1972, at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.322 (See also Attachment 1) [35 IAC 212.322(a)].

- e. The affected coating lines Nos. 1, 2, 4, 5, and 6 is subject to 35 IAC 212.321(b)(1), which provides that:

No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.321 (See also Attachment 1) [35 IAC 212.321(a)].

1.1.4 Non-Applicability of Regulations of Concern

Coating operations performed on each affected coating line and subject to limitations of 35 IAC 218.204 are not subject to 35 IAC Subpart G: Use of Organic Material, pursuant to 35 IAC 218.209, Exemption From General Rule on Use of Organic Material, which excludes coating operations of the affected coating line from this requirement.

1.1.5 Work Practices

- a. The catalytic oxidizer shall be in operation at all times that the associated coating lines Nos. 2 and 3 are in operation and applying non-compliant coating which exceeds the limits established by 35 IAC 218.204(c) and 35 IAC 218.205(a). The afterburner shall not be seasonally shut down as would be allowed in 35 IAC 218.107.
- b. The permanent total enclosure and afterburner control system shall be operated in a manner consistent to good air pollution control practices and operating requirements established in 35 IAC 218, Appendix B, Procedure T "Criteria for and Verification of a Permanent or Temporary Total Enclosure".
- c. The Permittee shall, in accordance with manufacturer(s) and/or vendor(s) recommendations, perform periodic maintenance of the catalytic oxidizer such that the oxidizer be kept in proper

working condition and not cause violation of the Environmental Protection Act or regulations promulgated therein.

- d. The Permittee shall replace the catalyst as needed in order to maintain the minimum required VOM destruction efficiency of 90% of the afterburner, pursuant to 35 IAC 218.207(h)(2).
- e. This permit is issued based on the affected coating lines #2 and #3 with an afterburner not being allowed to operate during malfunction or breakdown of an afterburner because the Permittee did not submit the proof to the Illinois EPA that such continued operation is necessary to prevent injury to persons or severe damage to equipment, or that such continued operation is required to provide essential services, pursuant to 35 IAC 201.262.

1.1.6 Emission and Operational Limitations

The affected coating lines are subject to the following:

- a. Emissions and operation of the coating line #5 shall not exceed the following limits:

<u>Lacquer Coating Usage</u> <u>(gal/mo)(gal/yr)</u>		<u>Average VOM Content</u> <u>(lb/gal)</u>	<u>VOM Emissions</u> <u>(T/mo) (T/yr)</u>	
125	1,000	4.82	0.3	2.50
(40)*	(365)*	(0.332)*		

* Less water.

The above limitations were established in Construction Permit 00080079, pursuant to 35 IAC Part 203. These limits ensure that the construction and/or modification addressed in the aforementioned Construction Permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically 35 IAC Part 203. Compliance with annual limits shall be determined from a running total of 12 months of data.

- b. Emissions and operation of the coating line #6 shall not exceed the following limits:

<u>Lacquer and Latex Coating Usage</u> <u>(gal/mo)</u>	<u>(gal/yr)</u>	<u>VOM Emissions</u> <u>(T/mo) (T/yr)</u>	
125	1,250	0.14	1.44

The above limitations were established in Construction Permit 98040025, pursuant to 35 IAC Part 203. These limits ensure that the construction and/or modification addressed in the aforementioned Construction Permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically 35 IAC Part 203. These limits are based on the maximum operating rate and daily-weighted average VOM content of applied coating equal to 2.3 lb/gal. Compliance with annual limits shall be determined from a running total of 12 months of data.

- c. Emissions and operation of the coating line #4 shall not exceed the following limits:

Total VOM Usage		VOM Emissions	
<u>(T/mo)</u>	<u>(T/yr)</u>	<u>(T/mo)</u>	<u>(T/yr)</u>
3.65	25.50	3.65	25.50

The above limitations are being established in this permit pursuant to Title I of the CAA, specifically 35 IAC Part 203, Major Stationary Sources Construction and Modification. The source has requested that the Illinois EPA establish emission limitations and other appropriate terms and conditions in this permit that limit the VOM emissions from the affected coating line #4 below the levels that would trigger the applicability of these rules, consistent with the information provided in the CAAPP application. Compliance with annual limits shall be determined from a running total of 12 months of data.

- d. Emissions and operation of the coating line #1, including use of barrier coating shall not exceed the following limits:

Total VOM Usage		VOM Emissions	
<u>(T/mo)</u>	<u>(T/yr)</u>	<u>(T/mo)</u>	<u>(T/yr)</u>
1.36	10.00	1.36	10.00

The above limitations are being established in this permit pursuant to Title I of the CAA, specifically 35 IAC Part 203, Major Stationary Sources Construction and Modification. The source has requested that the Illinois EPA establish emission limitations and other appropriate terms and conditions in this permit that limit the VOM

emissions from the affected coating line #1 below the levels that would trigger the applicability of these rules, consistent with the information provided in the CAAPP application [T1N]. These limits are based on the maximum operating rate and application of coatings complying with Condition 1.1.3(b)(i) or (ii) of this permit. Compliance with annual limits shall be determined from a running total of 12 months of data.

- e. Emissions and operation of Coating Line #2 shall not exceed the following limits:

<u>Lacquer Coating</u>		<u>Average VOM Content</u>	<u>VOM Emissions</u>	
<u>(gal/mo)</u>	<u>(gal/yr)</u>	<u>(lbs/VOM per gal)</u>	<u>(T/mo)</u>	<u>(T/yr)</u>
33,500	200,000	4.82	0.8	4.82
<u>Latex Coating</u>				
<u>(gal/mo)</u>	<u>(gal/yr)</u>			
Less Water				
10,500	63,316	1.99 (Less Water)	0.11	0.63
With Water				
33,500	201,000		_____	_____
Totals:			0.91	5.45

- f. Emissions and operation of Coating Line #3 shall not exceed the following limits:

<u>Lacquer Coating</u>		<u>Average VOM Content</u>	<u>VOM Emissions</u>	
<u>(gal/mo)</u>	<u>(gal/yr)</u>	<u>(lbs/VOM per gal)</u>	<u>(T/mo)</u>	<u>(T/yr)</u>
25,000	161,180	4.82	0.6	3.9
<u>Latex Coating</u>				
<u>(gal/mo)</u>	<u>(gal/yr)</u>			
Less Water				
30,000	40,200	1.99 (Less Water)	0.30	0.4
With Water				
95,240	127,620		_____	_____
Totals:			0.90	4.3

1.1.7 Testing Requirements

- a. Within 90 days of initial startup of a coater on line #2, tests shall be performed that will allow evaluation of compliance of the paper coating operations with 35 IAC 218.207(b)(1).
- b. The test shall be designed to measure both the destruction efficiency across the afterburner and the overall control efficiency provided by the combination of the capture system and destruction efficiency of the afterburner.
- c. The Procedure T shall be used to determine whether a permanent total enclosures meet the criteria of total enclosure, as described in 35 Ill. Adm. Code, Part 218, Appendix B.
- d. The following methods and procedures shall be used for testing of emissions, unless another method is approved by the Illinois EPA: Refer to 40 CFR 60, Appendix A and 40 CFR 61, Appendix B for USEPA test methods.

Location of Sample Points	USEPA Method 1
Gas Flow and Velocity	USEPA Method 2
Volatile Organic Material	USEPA Method 25 or 25A

- e. This test shall be conducted during circumstances which are representative of maximum emissions, and equipment data and material usage during the test shall be measured.
- f. The Illinois EPA shall be notified prior to these tests to enable the Illinois EPA to observe these tests. Notification for the expected date of testing shall be submitted a minimum of thirty (30) days prior to the expected date. Notification of the actual date and expected time of testing shall be submitted a minimum of five (5) working days prior to the actual date of test. The Illinois EPA may at its discretion accept notifications with shorter advance notice provided that the Illinois EPA will not accept such notifications if it interferes with the Illinois EPA's ability to observe testing.
- g. Copies of the Final Report (s) for these tests shall be submitted to the Illinois EPA within 14 days after the test results are compiled and finalized.

- h. The Final Report shall include as a minimum:
 - i. A summary of results.
 - ii. General information.
 - iii. Description of test method (s), including description of sampling points, sampling train, analysis equipment, and test schedule.
 - iv. Detailed description of test conditions, including:
 - A. Process information, i.e., mode (s) of operation, process rate, e.g. fuel or raw material consumption;
 - B. Control equipment information, i.e., equipment condition and operating parameters during testing; and
 - C. A discussion of any preparatory actions taken, i.e., inspections, maintenance and repair.
 - v. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration.
 - vi. An explanation of any discrepancies among individual tests or anomalous data.
- i. Submittals of information shall be made as follows:
 - i. Notices of Test - one copy to the Regional Office and one copy to Compliance Section.
 - ii. Final Report - one copy to the Regional Office and one copy to Compliance Section.
- j. Upon request from the Illinois EPA or USEPA the Permittee shall conduct tests in accordance with procedures of 35 IAC 218.105(d),(e) and (f) to measure the overall control and performance of the afterburner controlling all affected coating lines. All such tests shall be made by or under the direction of a person qualified by training and/or experience in the field of air pollution testing.
- k. Testing for VOM content of coatings and other VOM containing materials shall be performed as follows

[35 IAC 218.105(a), 218.211(a), and Section 39.5(7)(b) of the Act]:

- i. Upon reasonable request by the Illinois EPA, the VOM content of specific coatings and cleaning solvents used on affected coating lines shall be determined according to USEPA Reference Method 24 of 40 CFR 60 Appendix A and the procedures of 35 IAC 218.105(a) and 218.211(a).
- ii. This testing may be performed by the supplier of a material provided that the supplier provides appropriate documentation for such testing to the Permittee and the Permittees records pursuant to Condition 1.1.9 directly reflect the application of such material and separately account for any additions of solvent.

1.1.8 Monitoring Requirements

Pursuant to 35 IAC 218.105(d)(2)(A)(ii), the catalytic afterburner shall be equipped with a USEPA approved continuous monitoring device which is installed, calibrated, maintained, and operated according to vendor specifications at all times the afterburner is in use. This monitoring equipment shall monitor the temperature across each catalytic bed or VOM concentration of exhaust.

1.1.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for the affected coating line to demonstrate compliance with conditions of this permit.

- a. Pursuant to 35 IAC 218.211(e)(2), the Permittee shall collect and record all of the following information each day for each coating line and maintain the information at the source:
 - i. Control device monitoring data;
 - ii. A log of operating time for the capture system, catalytic afterburner, monitoring equipment and the associated coating line; and
 - iii. A maintenance log for the capture system, catalytic afterburner and monitoring equipment detailing all routine and non-routine maintenance performed including dates and duration of any outages.

- b. The Permittee shall maintain records of the following items for the affected coating lines to demonstrate compliance with conditions of this permit.
 - i. The coating usage (gal/mo and gal/yr).
 - ii. The VOM content of each coating applied, % by wt.
 - iii. Density of each coating applied, lb/gal.
 - iv. Cleanup solvent usage (gal/mo and gal/yr) and the density of each solvent applied (lb/gal).
 - v. Records of the testing of VOM and HAP content of each coating and cleaning solvent as tested, pursuant to the conditions of this section, which include the following:
 - A. Identification of material tested;
 - B. Results of analysis;
 - C. Documentation of analysis methodology; and
 - D. Person performing analysis.
 - vi. The VOM emissions in tons/month and tons/year from an affected coating booth for verifying compliance with Condition 1.1.6 and calculated based on the compliance procedures from Condition 1.1.12.
 - vii. Total VOM and HAP emissions in tons/month and tons/year from all affected coating lines calculated based on the recordkeeping requirements and compliance procedures established in Condition 1.1.12.

1.1.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of noncompliance with applicable requirements as follows:

Pursuant to 35 IAC 218.211(e)(3), the Permittee shall notify the Illinois EPA in the following instances:

- a. Any record showing violation of 35 IAC 218.207 and Condition 1.1.3(b) within 30 days of such an occurrence; and
- b. At least 30 calendar days before changing the method of compliance from 35 IAC 218.207 to 35 IAC 218.204 or 205, the Permittee shall comply with all requirements of 35 IAC 218.211(c)(1) and (d)(1).

1.1.11 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to the affected coating line without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee's obligation to properly obtain a construction permit in a timely manner for any activity constituting construction or modification of the source, as defined in 35 IAC 201.102:

Usage of coating and clean-up solvents on the affected coating lines with various VOM contents provided that the source wide emission limitations in Condition 5.5.1 of the CAAPP permit are not exceeded and the affected coating lines remain in compliance with Condition 1.1.3(b).

1.1.12 Compliance Procedures

- a. Compliance of affected coating lines with the source wide emission limitations in Condition 5.5.1 of the CAAPP permit and emission limitations established in Condition 1.1.6 shall be based on the recordkeeping requirements in Condition 1.1.9 and the following equation:
 - i. Uncontrolled VOM Emissions:
 - A. VOM Emissions from Coating Operation (EI), T/mo and T/yr = Actual Coating Usage (gal/mo) x Coating Density (lb/gal) x VOM Content of the Coating (wt. %);
 - B. VOM Emissions from Cleanup Operation (EII), T/mo and T/yr = (Actual Clean-up Solvent Usage (gal/mo) x Solvent Density (lb/gal)); and
 - C. Total VOM Emissions (T/mo and T/yr) = EI + EII.

ii. VOM Emissions after Control

- A. VOM Emissions from Coating Operation (EI), T/mo and T/yr = [Actual Coating Usage (gal/mo) x Coating Density (lb/gal) x VOM Content of the Coating (wt. %)] x [(100 - destruction efficiency, %)/100 x (capture efficiency, %)/100];
- B. VOM Emissions from Cleanup Operation (EII), T/mo and T/yr = (Actual Clean-up Solvent Usage (gal/mo) x Solvent Density (lb/gal) x [(100 - destruction efficiency, %)/100 x (capture efficiency, %)/100]); and
- C. Total VOM Emissions (T/mo and T/yr) = EI + EII.

- b. Compliance of affected coating lines with VOM emission limitations in Condition 1.1.3(b)(i) shall be based on the recordkeeping requirements in Condition 1.1.9 and by the use of either testing or by use of the formula listed below:

$$\text{VOM Coating Content} = V \times D / [1 - W \times D]$$

Where:

V = Percent VOM in the coating (%)

D = Overall coating density (lb/gal)

$$W = \sum (w_i / d_i)$$

Where:

w_i = Percent exempt compound i in the coating,

d_i = Overall density of exempt compound i, lb/gal

and the summation \sum is applied over water and all exempt compounds i in the coating.

- c. Compliance of the affected coating line with VOM emission limitations in Condition 1.1.3(b)(ii) shall be based on the recordkeeping requirements in Condition 1.1.9 and by use the following equation, as defined in 35 IAC 211.1670:

$$VOM_w = \frac{\sum_{i=1}^n 3V_i C_i}{V_T}$$

Where:

- VOM_w = The average VOM content of two or more coatings as applied each day on a coating line in units of kg VOM/l (lb VOM/gal) of coating (minus water and any compounds which are specifically exempted from the definition of VOM);
- n = The number of different coatings as applied each day on a coating line;
- V_i = The volume of each coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied each day on a coating line in units of l (gal);
- C_i = The VOM content of each coating as applied each day on a coating booth in units of kg VOM/l (lb VOM/gal) of coating (minus water and any compounds which are specifically exempted from the definition of VOM); and
- V_T = The total volume of all coatings (minus water and any compounds which are specifically exempted from the definition of VOM) as applied each day on a coating line in units of l (gal).
- d. Compliance with the overall control efficiency requirement under Condition 1.1.3(c) shall be based on the latest measurement of destruction efficiency of the catalytic oxidizer controlling coating lines, and the latest verification test of the permanent total enclosure.
- e. Compliance with the particulate matter limitations of Condition 1.1.3(d) and (e) is assured and achieved by the work practices inherent in operation of the affected coating lines.

Please note that this permit allows:

- Construction of new Coating Line 2.

Page 14

- Removal of the PTE from Line 1 and complying by means of daily weighted average.
- Revision of the netting history (See Attachment 1).

If you have any questions on this, please call Bob Smet at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES:RPS:jar

cc: Region 1

Attachment 1
Revised Netting Table

		VOM <u>Tons/Year</u>
Proposed Emissions from Lines 1 through 6 (Year 2001):		
Line #1	(no PTE; complies by daily-weighted-average)	10.00
Line #2	(new coating line)	5.45
Line #3		4.30
Line #4	(no PTE; complies by daily-weighted-average)	25.50
Line #5		2.50
Line #6		<u>1.44</u>
		49.19

		VOM <u>Tons/Year</u>
Past Actual Emissions (Average from 1998 and 1999):		
Line #1		5.20
Line #3		0.55
Line #4		9.72
Lines #5 and 6		<u>9.85</u>
		25.32

Net Increase = Proposed Emissions - Past Actual Emissions
= 49.19 - 25.32
= 23.87 Tons/year

RPS:psj