Title V Air Operation Permit Renewal
Permit No.: 0230046-005-AV

APPLICANT

The applicant for this project is New Millennium Building Systems, LLC. The applicant's responsible official and mailing address are: Mark Ripke, General Manager, New Millennium Building Systems, LLC, 14099 S.E. 44TH Ave., Starke, Florida 32091.

FACILITY DESCRIPTION

The applicant operates the Lake City site, which is located at 1992 NW Bascom Norris Drive, Lake City, Florida.

This Title V air operation permit is issued under the provisions of Chapter 403, Florida Statutes (F.S.), and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210, and 62-213. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents, attached hereto or on file with the permitting authority, in accordance with the terms and conditions of this permit.

New Millennium manufactures steel joist, girders, bridging and decking, and consists of the following emission units.

E.U. ID No.	Brief Description
001	Metal Coil Surface Coating Process
002	Dip Tank Coating Process

Steel Decking Manufacturing (Emissions Unit 001). Raw steel coil is "uncoiled" and fed into the line where it passes through three (3) cleaning tanks, identified as the "Pre-Wash Tank," the "Wash Tank," and the "Rinse Tank." These tanks use heated water baths to remove the oily coating and surface impurities that are on the steel when it is received. Phosphoric acid cleaner is used to aid in cleaning the steel.

The steel is then fed through a rollcoater (RC1) that applies a surface preparation that promotes bonding of the paint and helps to prevent corrosion. The steel then passes through the first paint rollcoater (RC2) where paint is applied, and depending upon the job requirements, followed by a second rollcoater (RC3) for a second application of paint. After the paint rollcoaters, the steel may be coated with evaporative oil (EO), depending on the paint scenario. Edge Sealer (ES) may also be used as a final rust protection measure.

Draft/Proposed

Steel Joist Manufacturing (Emissions Unit 002). The facility receives steel into a warehouse area via railcar and truck. The accessories department slits the steel, then forms it into angle or channel shapes, which are the primary parts used on the joist lines to make joists and girders. Steel is assembled into a joist at the rigging area. The assembled joist is welded together and moved down by conveyor to the dip paint tank. This facility has six (6) dip paint tanks that vary in sizes.

Mineral spirit (Solvent) is added to each paint tank from time to time to maintain the viscosity of the paint. Air emissions from this emissions unit are fugitive volatile organic compounds (VOC).

{Permitting Note: Blue strikethroughs indicate items ~~deleted~~ and blue, double underlined font indicates items added.}

The table below shows the size of the tanks.

Dip Tank	Dimensions	Tank Volume (gallon)
DT1 (Line 1)	54' long, 2' wide, 3' deep	2,424
DT2-A(Line 2)	84' long, 2' wide, 5' deep	6,240
DT2-B ~~(NOTE 1)~~ *	84' long, 2' wide, 5' deep	6,240
DT3- A (Line 3)	128' long, 2' wide, 8' deep	15,360
DT3- B (Line 3) ~~(NOTE 1)~~ *	128' long, 2' wide, 8' deep	15,360
DT4 (Bridging)	24' long, 3' wide, 3' deep	1,620

~~(NOTE 1) Proposed Tank(s)~~

*Since the tanks hold a large amount of paint in each, it is difficult and costly to change out the kind of paint in a specific tank. Therefore, tanks DT2-B and DT3-B give the Lake City operation flexibility to change which paint is being used for each line and do not increase the overall capacity of the lines. In order to mitigate VOC emissions, the Lake City facility ensures that only one tank is uncovered at a time.

Once the joist is dipped and raised out of the paint tank, it is placed on a steel rack above the tank for a few minutes allowing the excess paint to drain back into the tank. Once the excess paint has drained off the joist, the joist is taken out of the building to the shipping yard. The facility will do regular on-site VOC testing (EPA Method 24) to determine the amount of Mineral Spirits (solvent) to be added to each paint tank to maintain a good working viscosity while at the same time minimizing paint usage.

Welding Processes (**Emissions Point 02**). The facility consists of equipment associated with the welding processes such as metal inert gas (MIG) wire which contain manganese (HAP). At various points in the assembling process the steel joists and girders are welded together prior to going to the dip tanks. V.E. testing is required on a graduated schedule (daily, weekly, monthly, quarterly and yearly). Compliance status must be reported annually with the annual certification and compliance report.

Draft/Proposed

PROJECT DESCRIPTION

Title V Air Operation Permit Renewal Project No. 0230046-005-AV: To renew the Title V permit and to incorporate Air Construction Permit No. 0230046-006-AC.

PROCESSING SCHEDULE AND RELATED DOCUMENTS

Application for a Title V Air Operation Permit Renewal received on January 29, 2015.
Informal Request for Additional Information dated February 16, 2015.
Informal Additional Information received February 18, 2015.
Notice of Intent to Issue Air Permit Issued February 20, 2015.
Public Notice Published xx/xx/xx

PRIMARY REGULATORY REQUIREMENTS

Title III: The facility is identified as a major source of hazardous air pollutants (HAP).

Title V: The facility is a Title V major source of air pollution in accordance with Chapter 62-213, Florida Administrative Code (F.A.C.).

PSD: The facility **is not** a Prevention of Significant Deterioration (PSD)-major source of air pollution in accordance with Rule 62-212.400, F.A.C.

NSPS: The facility **does** operate units subject to the New Source Performance Standards (NSPS) of 40 Code of Federal Regulations (CFR) 60.
NESHAP: The facility **does** operate units subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) of 40 CFR 63.
CAIR: The facility is not subject to the Clean Air Interstate Rule (CAIR) set forth in Rule 62-296.470, F.A.C.

PROJECT REVIEW

Project 005- This permit is for the renewal and operation of a steel joist and metal coil surface coating facility and incorporating the Air Construction Permit No. 0230046-006-AC, which authorizes the use of (2) Portable Plasma Cutters to make precision cuts to sections of mild carbon steel to be used in the joist manufacturing line.

Facility is subject to:
40 CFR 60-Subpart A- General Provisions for 40 CFR 60 dated ~~2/5/10~~ 2/27/14
40 CFR 60-Subpart TT, Standard of Performance for Metal Coil Surface Coating
40 CFR Part 63, Subpart A – General Provisions
40 CFR 63-Subpart XXXXXX, NESHAPS Area Source Standards for Nine Metal Fabrication and Finishing Source Categories

Draft/Proposed

Facility **is not** subject to:

NESHAP Subpart T, *National Emission Standards for Halogenated Solvent Cleaning,* applies to solvent cleaning machines that use any solvent containing methylene chloride (CAS No. 75–09–2), perchloroethylene (CAS No. 127–18–4), trichloroethylene (CAS No. 79–01–6), 1,1,1-trichloroethane (CAS No. 71–55–6), carbon tetrachloride (CAS No. 56–23–5) or chloroform (CAS No. 67–66–3), or any combination of these halogenated HAP solvents, in a total concentration greater than 5 percent by weight, as a cleaning and/or drying agent. The Lake City facility operates a parts washer but does not utilize cleaners containing any of these solvents. Therefore, NESHAP Subpart T is not applicable to the Lake City facility.

NESHAP Subpart SSSS, *National Emission Standards for Hazardous Air Pollutants: Surface Coating of Metal Coil*, applies to each facility that is a major source of HAP at which a metal coil coating line is operated. The Lake City facility is an area source of HAP emissions and thus, NESHAP Subpart SSSS is not applicable.

NESHAP Subpart CCCCCC, *National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities*, applies to each gasoline dispensing facility that is located at an area source. A gasoline dispensing facility is defined in §63.11132 as any stationary facility which dispenses gasoline into the fuel tank of a motor vehicle, motor vehicle engine, nonroad vehicle, or nonroad engine. This includes but is not limited to on- and off-road, street, or highway motor vehicles, lawn equipment, boats, test engines, landscaping equipment, generators, pumps, and other gasoline-fueled engines and equipment. The Lake City facility operates a 250 gallon gasoline dispensing tank that is used to fill lawn equipment and is therefore subject to this subpart. Since the monthly throughput of gasoline at the Lake City facility is less than 10,000 gallons of gasoline, the Lake City facility is subject to the requirements in §63.11116. As such, the Lake City facility handles gasoline in accordance with §63.11116(a) and maintains accessible records of the monthly throughput.

NESHAP Subpart HHHHHH, *National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources*, establishes emission standards or HAP emitted from area sources that conduct paint stripping operations, autobody refinishing operations, and spray application of coatings containing chromium, lead, manganese, nickel, or cadmium. The Lake City facility does not conduct paint stripping, autobody refinishing, nor does it spray apply coatings. Therefore this subpart is not applicable to the Lake City facility.

NSPS Subpart Kb, *Standards for Performance for Volatile Organic Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984,* applies to storage vessels with a capacity greater than or equal to 75 cubic meters (19,812.9 gallons) used to store volatile organic liquids.

The Lake City facility does not operate any storage vessels with a capacity of greater than 75 cubic meters. Therefore, NSPS Subpart Kb is not applicable.

Draft/Proposed

Application Information:

New Millennium Building Systems, LLC stated in this Title V Renewal Application, dated January 29, 2015 that the facility does not use any coatings with MFHAP.

In the future, if the facility uses coatings with MFHAPs, the facility will then be subjects to all the other applicable requirements of 40 CFR 63-Subpart XXXXXX, NESHAPS Area Source Standards for Nine Metal Fabrication and Finishing Source Categories.

Based on the Air Construction Permit Application received May 27, 2004, this facility **is** a major source of Volatile Organic Compounds (VOC). CAP 249 TPY to escape PSD.

Based on the initial Title V Air Operation Permit application received July 26, 2005, this facility **is not** a major source of hazardous air pollutants (HAPs).

CAM **does not** apply.

Also included in this permit are unregulated and miscellaneous insignificant/exempt emission units and/or activities.

Facility-Wide Emissions	
Pollutant	**Emissions (TPY)**
VOC	249
NO_X	4.13
PM[1]	39.9
PM_{10}[1]	39.9
$PM_{2.5}$[1]	39.9
Total HAP	2.00
Individual HAP[2]	1.72

1. PM_{10} and $PM_{2.5}$ emissions conservatively assumed to be equal to PM.
2. Maximum individual HAP is manganese.

This facility no longer emits the HAP H096- Glycol ethers.

Production Data	
Maximum Hourly Production Rate (Joist Manufacturing)	87 tons steel/hr
Maximum Annual Production Rate (Joist Manufacturing)	762,120 tons steel/yr
Welding Wire Use [1]	12 lb/ton
Short-Term Emission Rate	1,044 lb wire/hr 1.04 1,000 lb wire/hr
Annual Emission Rate	9,145,440 lb wire/yr 9,145 1,000 lb wire/yr

1. Maximum welding wire use of 12 lb/ton conservatively assumed. Maximum use for a month in 2014 was 11.87 lb/ton. Based on process knowledge the typical amount of wire usage is ~8 lb/ton per Eric McClees.

Draft/Proposed

Potential Emissions			
Pollutant	Emission Factor[1] (lb/1,000 lb wire)	Potential Emissions (lb/hr)	(tons/yr)
PM	5.20	5.43	23.8
Manganese	0.318	0.332	1.45

1. AP-42 Chapter 12.19, Table 12.19-1 and Table 12.19-2 for E70S Electrodes.

HAP Emissions			
Chemical Compositions[1]		Potential Emissions (lb/yr)	HAP? (y/n)
Iron	99%	31,999	n
Chromium	0.9%	291	y
Manganese	1.7%	533	y
Carbon	1.1%	356	n
Copper	1.0%	323	n
Nickel	0.8%	242	y
Silicon	0.5%	162	n
Molybdenum	0.2%	64.6	n
Aluminum	0.1%	32.3	n
Sulfur	0.1%	25.9	n
Lead	0.1%	22.6	y
Phosphorus	0.1%	19.4	n
Potential Emissions of HAP	**3.4%**	**1,089.3**	

1. New Millennium steel joist MSDS (see Appendix C of Application Narrative)

New Plasma Cutters emissions are below. This is an unregulated unit that is listed on the Unregulated List of the Attached Combined Appendices.

Plasma Cutter Emissions	
Potential PM Emissions	
Steel Thickness[1]	0.50 inch thick steel
Cut Thickness[3]	0.16 inch thick kerf
Cut Speed[2]	55 in/min
Volume of Material Cut	259.84 in^3/hr
Fume Percentage[3]	5% % of steel cut that becomes fumes
Fume Flowrate	12.99 in^3/hr
Density of Steel	0.28 lb/in^3
Total Fume Emissions	3.69 lb/hr
Hours of Operation	8760 hr/yr
PM Emissions	**16.16 tpy**
PM_{10} Emissions[4]	**16.16 tpy**
$PM_{2.5}$ Emissions[4]	**16.16 tpy**
Potential NO_X Emissions	
Flow Rate[3]	5.50 l/min
Pressure	1.00 atm
Temperature	294.26 K
Ideal Gas Constant	0.08 (L*atm)/(K*mol)
% NO_2[3]	8%
% NO[3]	92%
Molar Mass	31.3 g/mol
Molar Emission Rate	0.228 mol/min
NO_X Mass Emissions	7.12 g/min
	0.942 lb/hr
	4.128 tpy

1. New Millennium will typically cut 1/2" and 3/4" thick steel and occasionally cut 1" thick steel. The cutting speed of the plasma cutters varies based on the thickness of the steel being cut. New Millennium has estimated emissions from the plasma cutters assuming 1/2" thick steel because when combined with the cutting speed, 1/2" thick steel represents the most conservative rate of cutting.

2. Cut speed is from the Pak Master 150 XL Cutter and used as an example for a plasma cutter. New Millennium has not yet determined what model of plasma cutter will be used at the Lake City facility.

3. Bromsen et. al, *Emissions of Fume, Nitrogen Oxides, and Noise in Plasma Cutting of Stainless and Mild Steel. March, 1994.*

4. PM_{10} and $PM_{2.5}$ emissions conservatively assumed to be equal to PM emissions.

Emission Unit #1 (EU001) - Rollcoaters

Source Code	Production Line ID	Paint Name	ID No.	Density[5] (lb/gal)	VOC Content[5] (lb VOC/gal)	Max Production Rate (tons steel/hr)	Max Paint Usage (gal/ton)	Max Paint Usage (gal/hr)	Potential VOC Emissions @ 8,760 hr/yr (lb/hr)	Potential VOC Emissions @ 8,760 hr/yr (ton/yr)	Limited VOC Emissions: Production Rate (tons steel/yr)	Limited VOC Emissions: Paint Usage (gal/yr)	Limited VOC Emissions: VOC Emissions (tons/yr)
Rollcoater 2													
RC2	Deck Line	Grey Deck Primer[3]	220-D-215B LWD	9.55	0.70								
RC2	***Deck Line[2]***	***White Deck Primer***	***220-W-167C***	***11.06***	***0.76***	***40***	***0.75***	***30***	***22.80***	***99.86***	***40,000***	***30,000***	***11.40***
RC2	Deck Line	Deck Basecoat[3]	220-W-203C	9.52	0.73								
Rollcoater 3													
RC3	***Deck Line[2]***	***White Deck Primer***	***220-W-167C***	***11.06***	***0.76***	***40***	***0.75***	***30***	***22.80***	***99.86***	***40,000***	***30,000***	***11.40***
RC3	Deck Line	Deck Basecoat[3]	220-W-203C	9.52	0.73								
EO	Deck Line	Oak Draw 734-2	Evap. Oil	8.4234	0.16	40	0.0396	1.584	0.25	1.11	40,000	1,584	0.13
ES	Deck Line	Edge Sealer	SA0001A.2VB5	8.859	0.89	40	0.001	0.04	0.04	0.16	40,000	40	0.02
Total for EU001						40	1.5	60	45.60	199.73	40,000	60,000	22.94

Emission Unit # 2 (EU002) - Dip Tanks

Source Code[1]	Production Line ID	Paint Name	ID No.	Density[5] (lb/gal)	VOC Content[5] (lb VOC/gal)	Max Production Rate (tons steel/hr)	Max Paint Usage (gal/ton)	Max Paint Usage (gal/hr)	Potential VOC Emissions @ 8,760 hr/yr (lb/hr)	Potential VOC Emissions @ 8,760 hr/yr (ton/yr)	Limited VOC Emissions: Production Rate (tons steel/yr)	Limited VOC Emissions: Paint Usage (gal/yr)	Limited VOC Emissions: VOC Emissions (tons/yr)
DT1	***Line 1 (Specialty)***	***Armorchem Gray***	***4500***	***12.22***	***2.96***	***11***	***1.34***	***14.74***	***43.63***	***191.10***	***18,000***	***24,120***	***35.70***
DT1	***Line 1 (Specialty)***	***Mineral Spirits***	***Kensol 30***	***6.42***	***6.42***	***11***	***0.28***	***3.08***	***19.77***	***86.61***	***18,000***	***5,040***	***16.18***
DT2-A	Line 2 (Rod/Crimp)	Armorchem Gray	4500	12.22	2.96	16	1.34	21.44	63.46	277.97	24,000	32,160	47.60
DT2-A	Line 2 (Rod/Crimp)	Mineral Spirits	Kensol 30	6.42	6.42	16	0.28	4.48	28.76	125.98	24,000	6,720	21.57
Alternate Painting Scenario													
DT2-B	***Line 2 (Rod/Crimp)***	***White Joist Primer***	***120-W-278***	***13.35***	***2.98***	***16***	***1.34***	***21.44***	***63.89***	***279.84***	***24,000***	***32,160***	***47.92***
DT2-B	***Line 2 (Rod/Crimp)***	***Mineral Spirits***	***Kensol 30***	***6.42***	***6.42***	***16***	***0.28***	***4.48***	***28.76***	***125.98***	***24,000***	***6,720***	***21.57***
DT3-A	Line 3 (Long Span)	Armorchem Gray	4500	12.22	2.96	16	1.34	21.44	63.46	277.97	30,000	40,200	59.50
DT3-A	Line 3 (Long Span)	Mineral Spirits	Kensol 30	6.42	6.42	16	0.28	4.48	28.76	125.98	30,000	8,400	26.96
Alternate Painting Scenario													
DT3-B	***Line 3 (Long Span)***	***White Joist Primer***	***120-W-278***	***13.35***	***2.98***	***16***	***1.34***	***21.44***	***63.89***	***279.84***	***30,000***	***40,200***	***59.90***
DT3-B	***Line 3 (Long Span)***	***Mineral Spirits***	***Kensol 30***	***6.42***	***6.42***	***16***	***0.28***	***4.48***	***28.76***	***125.98***	***30,000***	***8,400***	***26.96***
DT4	***Bridging***	***Armorchem Gray***	***4500***	***12.22***	***2.96***	***4***	***1.34***	***5.36***	***15.87***	***69.49***	***6,000***	***8,040***	***11.90***
DT4	***Bridging***	***Mineral Spirits***	***Kensol 30***	***6.42***	***6.42***	***4***	***0.28***	***1.12***	***7.19***	***31.49***	***6,000***	***1,680***	***5.39***
Total for EU002						47	1.62	76.14	271.77	1,190.3	78,000	126,360	225.52
TOTAL for EU001 & EU002						**87**		**136**	**317**	**1390**	**118,000**	**186,360**	**248.46**

1. DT1 - DT4 are all paint dip tanks. The facility currently utilizes a water based paint. However, Armorchem 4500 and White Joist Primer are shown in the emission calculations above because they represent a "worst case" scenario with respect to potential emissions.

2. Deck Lines use various coating scenarios at rollcoaters 2 and 3 (RC2 and RC3) including scenarios which involve no paint. These calculations represent a "worst case" emissions scenario.

3. The Grey and Basecoat Deck Line paints contain a minimal amount of chromium compounds (up to 1% by weight), a regulated HAP. The chromium compound, however, is a non-volatile solid (zero volatile HAP). Since the paint is roll coated (a transfer method with 100% transfer efficiency) onto the steel, no solids (e.g. no chromium particles) are emitted into the air as particulate emissions. *Painting Basics and Emission Calculations for TCEQ Air Quality Permit Applications. December 13, 2005 (Updated February 20, 2008. Texas Commission on Environmental Quality.*

4. The remaining paints in use at the Lake City facility do not contain any HAP.

5. See Appendix C of the permit application narrative for paint MSDSs.

Accessories Department

Wall Vents 1 - 8
MAX 92.75 lbs/hr VOC Emissions
Armorchem 4500 Gray Paint & Mineral Spirits
Rod/Crimp Joist Line (Emission Unit 002)
Steel from Accessories Dept & Warehouse
Cut-Out
Rigging
Welding
OR
Dip Painting Tank "A" Main Tank DT2-A
Dip Painting Tank "B" Proposed Tank DT2-B
SHIPPING
Welding wire
White Joist Primer & Mineral Spirits

Wall Vents 1 - 8
MAX 92.75 lbs/hr VOC Emissions
Armorchem 4500 Gray Paint & Mineral Spirits
Long Span Joist Line (Emission Unit 002)
Cut-Out
Rigging
Welding
OR
Dip Painting Tank "A" Main Tank DT9-A
Dip Painting Tank "B" Proposed Tank DT9-B
SHIPPING
Welding wire
White Joist Primer & Mineral Spirits

Specialty Line (Emission Unit 002)
Wall Vents 1 - 8
MAX 63.41 lbs/hr VOC Emissions
Steel from Accessories Dept & Warehouse
Cut-Out
Rigging
Welding
Dip Painting (DT4)
SHIPPING
Welding wire
Armorchem 4500 Gray Paint & Mineral Spirits

Bridging Line (Emission Unit 002)
Wall Vents 1 - 8
MAX 23.06 lbs/hr VOC Emissions
Steel from Accessories Dept
Punch Line
Welding
Dip Painting (DT5)
SHIPPING
Welding wire
Armorchem 4500 Gray Paint & Mineral Spirits

Other Wastes
Non-Hazardous Dried Paint Waste disposed off-site
Dip Painting (DT2-DT5)