TECHNICAL EVALUATION
&
PRELIMINARY DETERMINATION

APPLICANT

Armstrong World Industries, Inc.
300 South Myrick Street
Pensacola, Florida 32505

Pensacola Facility
Facility ID No. 0330006

PROJECT

Project No. 0330006-023-AC
Application for Title V Source Air Construction Permit
Reduce PM testing frequency

COUNTY

Escambia County, Florida

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Permitting Program
Northwest District Office
160 W. Government Street, Suite 308
Pensacola, Florida 32502-5740

Revised, February 17, 2015

1. GENERAL PROJECT INFORMATION

Air Pollution Regulations

Projects at stationary sources with the potential to emit air pollution are subject to the applicable environmental laws specified in Section 403 of the Florida Statutes (F.S.). The statutes authorize the Department of Environmental Protection (Department) to establish regulations regarding air quality as part of the Florida Administrative Code (F.A.C.), which includes the following applicable chapters: 62-4 (Permits); 62-204 (Air Pollution Control – General Provisions); 62-210 (Stationary Sources – General Requirements); 62-212 (Stationary Sources – Preconstruction Review); 62-213 (Operation Permits for Major Sources of Air Pollution); 62-296 (Stationary Sources - Emission Standards); and 62-297 (Stationary Sources – Emissions Monitoring). Specifically, air construction permits are required pursuant to Rules 62-4, 62-210 and 62-212, F.A.C.

In addition, the U. S. Environmental Protection Agency (EPA) establishes air quality regulations in Title 40 of the Code of Federal Regulations (CFR). Part 60 specifies New Source Performance Standards (NSPS) for numerous industrial categories. Part 61 specifies National Emission Standards for Hazardous Air Pollutants (NESHAP) based on specific pollutants. Part 63 specifies NESHAP based on the Maximum Achievable Control Technology (MACT) for numerous industrial categories. The Department adopts these federal regulations on a quarterly basis in Rule 62-204.800, F.A.C.

Glossary of Common Terms

Because of the technical nature of the project, the permit contains numerous acronyms and abbreviations, which are defined in Appendix A of this permit.

Facility Description and Location

Armstrong World Industries, Inc., a ceiling tile manufacturer is an existing major stationary facility, which is categorized under Standard Industrial Classification Code No. 3999, Manufacturing Industries Not Elsewhere Classified. The facility is located in Escambia County at 300 South Myrick Street in Pensacola, Florida. The UTM coordinates of the existing facility are Zone 16, 475.9 km East, and 3363.5 km North. This site is in an area that is in attainment (or designated as unclassifiable) for all air pollutants subject to state and federal Ambient Air Quality Standards (AAQS).

Facility Regulatory Categories

- The facility is a major source of hazardous air pollutants (HAP).
- The facility has no units subject to the acid rain provisions of the Clean Air Act.
- The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.
- The facility is a major stationary source in accordance with Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

Project Description

The scrubbers are currently required to conduct annual particulate matter (PM) compliance testing but the facility has requested PM testing upon permit renewal. Facility wide construction permit 0330006-007-AC allowed for a reduction in testing frequency if emissions are 50% less than the permitted maximum and surrogate compliance parameters are established including but not limited to visible emissions, water flow, and pressure drop. PM test results have been 50% below the limit for the last five years except for Scrubber 4 (EU009) and Scrubber 5 (EU014). The facility has established surrogate compliance parameters (see Appendix E. CAM Plan). This permit is being concurrently processed with the Title V renewal 0330006-022-AV and reduces the PM testing frequency for EU003 (Scrubber 3), EU010 (Scrubber 6), EU011 (Scrubber 2), EU012 (Scrubber 7), EU054 (Scrubber 9), EU055 (Scrubber 55), EU056 (Scrubber 8), and EU050 (Scrubber 53 and Scrubber 54).

Processing Schedule

January 22, 2015 - Received the application for a minor source air pollution construction permit.

2. PSD APPLICABILITY

General PSD Applicability

For areas currently in attainment with the state and federal AAQS or areas otherwise designated as unclassifiable, the Department regulates major stationary sources of air pollution in accordance with Florida's PSD preconstruction review program as defined in Rule 62-212.400, F.A.C. Under preconstruction review, the Department first must determine if a project is subject to the PSD requirements ("PSD applicability review") and, if so, must conduct a PSD preconstruction review. A PSD applicability review is required for projects at new and existing major stationary sources. In addition, proposed projects at existing minor sources are subject to a PSD applicability review to determine whether potential emissions *from the proposed project itself* will exceed the PSD major stationary source thresholds. A facility is considered a major stationary source with respect to PSD if it emits or has the potential to emit:

- 250 tons per year or more of any regulated air pollutant; or
- 100 tons per year or more of any regulated air pollutant and the facility belongs to one of the following 28 PSD-major facility categories: fossil fuel-fired steam electric plants of more than 250 million British thermal units per hour heat input, coal cleaning plants (with thermal dryers), Kraft pulp mills, portland cement plants, primary zinc smelters, iron and steel mill plants, primary aluminum ore reduction plants, primary copper smelters, municipal incinerators capable of charging more than 250 tons of refuse per day, hydrofluoric, sulfuric, and nitric acid plants, petroleum refineries, lime plants, phosphate rock processing plants, coke oven batteries, sulfur recovery plants, carbon black plants (furnace process), primary lead smelters, fuel conversion plants, sintering plants, secondary metal production plants, chemical process plants, fossil fuel boilers (or combinations thereof) totaling more than 250 million British thermal units per hour heat input, petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels, taconite ore processing plants, glass fiber processing plants and charcoal production plants.

Once it is determined that a project is subject to PSD preconstruction review, the project emissions are compared to the "significant emission rates" defined in Rule 62-210.200, F.A.C. for the following pollutants: carbon monoxide (CO); nitrogen oxides (NO_X); sulfur dioxide (SO_2); particulate matter (PM); particulate matter with a mean particle diameter of 10 microns or less (PM_{10}); volatile organic compounds (VOC); lead (Pb); fluorides (Fl); sulfuric acid mist (SAM); hydrogen sulfide (H_2S); total reduced sulfur (TRS), including H_2S; reduced sulfur compounds, including H_2S; municipal waste combustor organics measured as total tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans; municipal waste combustor metals measured as particulate matter; municipal waste combustor acid gases measured as SO_2 and hydrogen chloride (HCl); municipal solid waste landfills emissions measured as non-methane organic compounds (NMOC); and mercury (Hg). In addition, significant emissions rate also means any emissions rate or any net emissions increase associated with a major stationary source or major modification which would construct within 10 kilometers of a Class I area and have an impact on such area equal to or greater than 1 $\mu g/m^3$, 24-hour average.

If the potential emission exceeds the defined significant emissions rate of a PSD pollutant, the project is considered "significant" for the pollutant and the applicant must employ the Best Available Control Technology (BACT) to minimize the emissions and evaluate the air quality impacts. Although a facility or project may be *major* with respect to PSD for only one regulated pollutant, it may be required to install BACT controls for several "significant" regulated pollutants.

<u>PSD Applicability for Project</u>

As provided in the application, the following table summarizes potential emissions and PSD applicability for the project.

This construction permit only reduces PM testing frequency from annual to every permit renewal for EU003 (Scrubber 3), EU010 (Scrubber 6), EU011 (Scrubber 2), EU012 (Scrubber 7), EU054 (Scrubber 9), EU055 (Scrubber 55), EU056 (Scrubber 8), and EU050 (Scrubber 53 and Scrubber 54). All emissions and emissions limits remain unchanged.

Table A. Potential Emissions (Tons/Year) and PSD Applicability

Pollutant (TPY)	Pre-Project Potential Emissions	Contempo-raneous Emissions	Post Project Potential Emissions	Total Emissions Change	Significant Emissions Rate	Project Subject to PSD
CO	996.58	0	996.58	0	100	No
NO_X	70.14	0	70.14	0	40	No
PM/PM_{10}	189.80	0	189.80	0	25/15	No
SO_2	0.43	0	0.43	0	40	No
VOC	48.80	0	48.80	0	40	No
Total HAPs*	16.93	0	16.93	0		No

* *Formaldehyde and Triethylamine*

This facility is currently a major stationary source for PSD because it emits more than 250 tons per year of CO (carbon monoxide). However, the permit change to authorize reduced PM testing frequency is not subject to PSD review because there is no physical change in, change in the method of operation of, or addition to the facility which would result in an increase in the actual emissions of any air pollutant subject to regulation under the Act, including any not previously emitted, from any emissions unit at the facility [Rule 62.210.200 (185)].

3. APPLICATION REVIEW

Application Fee

This a Title V facility and is exempt from permit processing fees.

Discussion of Emissions

Facility wide construction permit 0330006-007-AC superseded and replaced all previously issued construction permits, including AC17-128287 issued July 6, 1987 for a number of sources associated with the FMS process and including a NSR/PSD review (PSD-FL-117). Specific conditions A.5., B.6., and C.6. of Permit 0330006-007-AC state that the permittee may request a reduction in the frequency of PM testing for any specific emission unit provided the permittee has demonstrated that the particular emission unit has emissions less than 50% of the permitted maximum, and has established surrogate compliance parameters including but not limited to visible emissions, water flow, and pressure drop.

As shown in the following tables, Scrubber 3 (EU003), Scrubber 6 (EU010), Scrubber 2 (EU011), Scrubber 7 (EU012), Scrubber 9 (EU054), Scrubber 55 (EU055), and Scrubber 8 (EU056), have all had PM test results less than 50% of the permitted maximum for the last five years. Permit 0330006-020-AC authorized the replacement of EU050 with new Scrubber and Scrubber 54 in 2013. As shown in the following table for EU050, PM test results with the previous scrubber 53 and multicyclone 54 were less than 50% of the permitted maximum for five years. All of the scrubbers have surrogate compliance parameters including but not limited to visible emissions, water flow, and pressure drop (see Appendix CAM (Compliance Assurance Monitoring) attached to this permit for the compliance parameters). Scrubber 4 (EU009) and Scrubber 5 (EU014) have established compliance parameters but do not have PM test results less than 50% of the permitted maximum for the past five years. The facility can possibly reduce the operating rate limit and/or retest to try to achieve a reduced PM testing frequency on Scrubber 4 and Scrubber 5 in the future.

EU050 was replaced with Scrubber 53 and Scrubber 54 in 2013. The initial PM test was conducted according to Permit 0330006-020-AC and was well below the new limit of 9.0 pounds per hour (see table below). Rules 297.310(7)(a)3. and 297.310(7)(a)4.b., F.A.C. only require annual PM testing for an emissions unit with potential PM emissions of 100 tons per year or more. Potential emissions for EU050 are 36.29 tons PM per year. The previous scrubber 53 and multicyclone 54 PM test results (see above) were also well below 5.5 pounds PM per hour which is 50% of the limit (11.0 pounds PM per hour at that time). Due to Rule 297.310(7)(a)(3) and previous test results, Scrubber 53 and Scrubber 54 PM testing frequency may be reduced from every FFY to every permit renewal.

EU003 Scrubber 3:

Test Rate (feet/min)	Permitted Rate (ft/min)	PM test (lb/hr)	PM limit (lb/hr)	Test Date
54	75	0.5	4.0	11/11/14
56		0.49		11/22/13
56		0.4		11/30/12
58		0.49		10/19/11
60		0.41		11/9/10
56		1.8		10/28/09

For EU003, Scrubber 3, all of the PM tests are below 2.0 pounds PM per hour which is 50% of the limit (4.0 pounds PM per hour). Scrubber 3 PM testing frequency may be reduced from every federal fiscal year (FFY) to every permit renewal.

EU 009 Scrubber 4:

Test Rate (boards/min)	Permitted Rate (boards/min)	PM test (lb/hr)	PM limit (lb/hr)	Test Date
16.5	20	0.90	2.0	10/30/14
16.5		1.23		10/17/13
18		1.36		11/14/12
18		1.66		11/7/11
17		1.1		10/25/10
17		1.6		10/26/09

For EU009, Scrubber 4, most of the PM tests are not below 1.0 pound PM per hour which is 50% of the limit (2.0 pounds PM per hour). Scrubber 4 must continue to test PM every FFY at this time.

EU010 Scrubber 6:

Test Rate (boards/min)	Permitted Rate (boards/min)	PM test (lb/hr)	PM limit (lb/hr)	Test Date
30	33	0.65	2.0	11/11/14
30		0.22		11/22/13
30		0.49		11/30/12
30		0.83		2/9/12
30		0.33		11/4/10
30		0.3		11/05/09

For EU010, Scrubber 6, all of the PM tests are well below 1.0 pound PM per hour which is 50% of the limit (2.0 pounds PM per hour). Scrubber 6 PM testing frequency may be reduced from every FFY to every permit renewal.

EU011 Scrubber 2:

Test Rate (boards/min)	Permitted Rate (boards/min)	PM test (lb/hr)	PM limit (lb/hr)	Test Date
25/4.67	33/4.7	0.87	3.0	11/21/14
25/4.67		0.84		11/8/13
25/4.67		0.57		11/1/12
27/4.67		2.24		3/1/12
27/4.67		1.95		11/4/10
27/4.67		2.4		1/05/09

For EU011, Scrubber 2, the average of the PM tests is 1.48 pounds PM per hour. This average is below 1.5 pounds PM per hour which is 50% of the limit (3.0 pounds PM per hour). Scrubber 2 PM testing frequency may be reduced from every FFY to every permit renewal.

EU012 Scrubber 7:

Test Rate (boards/min)	Permitted Rate (boards/min)	PM test (lb/hr)	PM limit (lb/hr)	Test Date
25	33	2.55	4.5	11/21/14
25		0.71		11/8/13
25		0.93		10/26/12
25		0.59		10/31/11
25		2.2		10/22/10
25		0.6		10/23/09

For EU012, Scrubber 7, the average of the PM tests is 1.26 pounds PM per hour. This average is below 2.25 pounds PM per hour which is 50% of the limit (4.0 pounds PM per hour). Scrubber 7 PM testing frequency may be reduced from every FFY to every permit renewal.

EU014 Scrubber 5:

Test Rate (boards/min)	Permitted Rate (boards/min)	PM test (lb/hr)	PM limit (lb/hr)	Test Date
16.5/3	20/3	0.85	3.5	10/30/14
16.5/3		1.79		10/17/13
18/3		1.81		11/14/12
18/3		1.95		11/7/11
17/3 ***(retest)***		1.8		10/27/10
17/3 ***(failed)***		6.41		10/25/10
17/3		1.3		10/26/09

For EU014, Scrubber 5, not all of the PM tests are below 1.75 pounds PM per hour which is 50% of the limit (3.5 pounds PM per hour). Scrubber 5 must continue to test PM every FFY at this time.

EU054 Scrubber 9:

Test Rate (boards/min)	Permitted Rate (boards/min)	PM test (lb/hr)	PM limit (lb/hr)	Test Date
30/54	33/75	0.44	3.0	11/11/14
30/56		0.70		11/22/13
30/56		0.74		11/30/12
30/58		0.83		10/19/11
30/60		0.9		11/19/10
28.2/56		0.7		10/28/09

For EU054, Scrubber 9, all of the PM tests are well below 1.5 pounds PM per hour which is 50% of the limit (3.0 pounds PM per hour). Scrubber 9 PM testing frequency may be reduced from every FFY to every permit renewal.

EU055 Scrubber 55:

Test Rate (tons/hour)	Permitted Rate (tons/hour)	PM test (lb/hr)	PM limit (lb/hr)	Test Date
6.44	6.75	3.25	9.0	11/12/14
6.5		3.64		11/22/13
6.19		3.58		11/15/12
5.91		1.8		12/1/11
6.14		4.5		12/2/10
6.12		6.14		10/28/09

For EU055, Scrubber 55, the average of the PM tests is 3.8 pounds PM per hour. This average is well below 4.5 pounds PM per hour which is 50% of the limit (9.0 pounds PM per hour). Scrubber 55 PM testing frequency may be reduced from every FFY to every permit renewal.

EU056 Scrubber 8:

Test Rate (boards/min)	Permitted Rate (boards/min)	PM test (lb/hr)	PM limit (lb/hr)	Test Date
25	33	0.08	2.0	11/21/14
25		0.19		11/8/13
25		0.15		11/1/12
27		0.28		2/9/12
27		0.36		10/4/10
27		0.2		11/20/09

For EU056, Scrubber 8, all of the PM tests are well below 1.0 pound PM per hour which is 50% of the limit (2.0 pounds PM per hour). Scrubber 8 PM testing frequency may be reduced to every permit renewal.

EU050 Scrubber 53 and Scrubber 54:

Test Rate (feet/min)	Permitted Rate (ft/min)	PM test (lb/hr)	PM limit (lb/hr)	Test Date
58	75	1.48	9.0	6/19/14
N/A		N/A	11.0	2013*
58		4.22		11/15/12
58		4.83		12/1/11
60		5.4		12/20/10
56		4.1		11/6/09
56		3.8		11/25/08

* Test waiver during construction

The new Scrubber 53 and Scrubber 54 have only had one test since the scrubbers were replaced in 2013 with Permit 0330006-020-AC. Prior to Permit 0330006-020-AC, EU050 included Scrubber 53 and multicyclone 54 with a combined (including Wet End Seal) PM limit of 11.0 pounds per hour. Permit 0330006-020-AC changed the combined PM limit to 9.0 pounds per hour.

State Requirements

Visible emissions shall not equal or be greater than 20% opacity. [Rule 62-296.320(4)(b), F.A.C.]

Federal NSPS Provisions

None

Federal NESHAP Provisions

40 CFR 63 subpart A (General Provisions) for all, 40 CFR 63 subpart DDDDD (National Emissions Standards for Industrial, Commercial, and Institutional Boilers and Process Heaters), and 40 CFR 63 subpart HHHHH (National Emissions Standards for Miscellaneous Coating Manufacturing) for EU056

Other Draft Permit Requirements

These emissions units shall comply with the Compliance Assurance Monitoring (CAM) Plan, which is attached as Appendix E. The CAM plan for Armstrong includes a scrubber maintenance plan with a nozzle inspection scheduled every six weeks. Compliance will be demonstrated by annual testing for VE and PM on Scrubber 4 (EU009) and Scrubber 5 (EU014). Annual VE testing and permit renewal PM testing shall be conducted for Scrubber 3 (EU003), Scrubber 6 (EU010), Scrubber 2 (EU011), Scrubber 7 (EU012), Scrubber 9 (EU054), Scrubber 55 (EU055), Scrubber 8 (EU056), and Scrubbers 53 & 54 (EU050).

4. PRELIMINARY DETERMINATION

The Department makes a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations as conditioned by the draft permit. This determination is based on a technical review of the complete application, reasonable assurances provided by the applicant, and the conditions specified in the draft permit. Debbie Moore is the project engineer responsible for reviewing the application and drafting the permit. Additional details of this analysis may be obtained by contacting the project engineer at 850.595.0624 or Deborah.L.Moore@dep.state.fl.us.