

**ALLEGHENY COUNTY HEALTH DEPARTMENT
AIR QUALITY PROGRAM**

April 13, 2010

SUBJECT: Bloom Engineering Company, Inc.
5460 Horning Road
Pittsburgh, PA 15236
Allegheny County

Operating Permit: No. 0295

TO: Sandra L. Etzel
Chief Engineer

FROM: Ron Huffman
Air Quality Engineer

FACILITY DESCRIPTION:

Bloom Engineering Company, Inc. manufactures natural gas and oil burners for industrial furnaces of the aluminum and steel industries. They also produce the refractory burner blocks and other special refractory shapes for these furnaces. The operations consist of fabrication, welding, and machining of the burners and pressing/casting of the burner blocks and special shapes to be dried and cured. The facility operates a paint booth in order to apply coatings to burners and accessories. The source also operates a testing laboratory equipped with two (2) boilers and over twenty (20) testing furnaces which are used for fundamental combustion and heat-transfer research, product development and improvement, and customer demonstrations.

All of the boilers and furnaces burn natural gas, and some of these testing units are capable of burning various fuel oils and alternative fuels. Alternative fuels include commercial grade fuel gases, gas blends, standard fuel oils (kerosene through no. 6) and other liquid fuels used by industry including bio-derived oils. In addition, Process Combustion Corporation (a wholly owned company of Bloom Engineering Company, Inc that is located at the same facility) operates a 5 MMBtu/hr thermal oxidizer as part of their research and development.

Bloom Engineering Company, Inc. is a synthetic minor source, because the potential to emit sulfur dioxide (SO₂) exceeds major source thresholds for criteria pollutants as defined in §2101.20 of Article XXI. This facility will take fuel usage limitations on the burner efficiency testing activities in order to limit the maximum allowable SO₂ emissions to less than 100 tons per year. Bloom Engineering Company, Inc. is a minor source for particulate matter (PM), particulate matter of 10 microns or less in diameter (PM₁₀), volatile organic compounds (VOCs), nitrogen oxides (NO_x), carbon monoxide (CO) and Hazardous Air Pollutants (HAPs), as defined in section 2101.20 of Article XXI.

EMISSION SOURCES:

ID	SOURCE DESCRIPTION	CONTROL DEVICE(S)	MAXIMUM CAPACITY	FUEL/RAW MATERIAL	STACK ID
P001	Ka-Weld Blue Oven 3801	Uncontrolled	1.00 MMBtu/hr	Natural Gas	S001
P002	Ka-Weld Silver Oven 3815	Uncontrolled	1.75 MMBtu/hr	Natural Gas	S002
P003	Remote Curing Oven	Uncontrolled	1.00 MMBtu/hr	Natural Gas	S003
P004	Infatrol Gas Fired Batch Oven 3830	Uncontrolled	1.60 MMBtu/hr	Natural Gas	S004
P005	Burner Efficiency Testing Activities ¹	Uncontrolled	54.5 MMBtu/hr combined	Natural Gas	Various
			48.0 MMBtu/hr combined	No. 2 Fuel Oil	Various
			28.0 MMBtu/hr combined	No.4, 5, or 6 Fuel Oil and Alternative Fuels ⁴	Various
P006	Two (2) Refractory Mixing Stations	Dry Filters	0.20 ton/hr combined	Refractory	S005
P007	Paint Booth	Dry Filters	N/A	N/A	S006
P008	Welding	Uncontrolled	N/A	N/A	N/A
P009	Plasma Cutting	Dust Collector	1000 inches/hour	Steel	S007
P010	Machining ²	See Note 2	N/A	N/A	N/A
EG001	Onan Emergency Generator CCXB-3CR31	Uncontrolled	10 hp	Natural Gas	S008
EG002	Centurian Emergency Generator 0052141	Uncontrolled	33.5 hp	Natural Gas	S009
P011	Test Thermal Oxidizer ³	Uncontrolled	5.0 MMBtu/hr	Various ³	S010

¹The facility operates a testing laboratory equipped with two (2) boilers and over twenty (20) testing furnaces which are used for fundamental combustion and heat-transfer research, product development and improvement, and customer demonstrations. All of the boilers and furnaces burn natural gas, and some of these testing units are capable of burning various fuel oils and alternative fuels. One of the boilers that is part of the burner efficiency testing activities has a heat input capacity of 16 MMBtu/hr, is capable of burning natural gas and No. 2 fuel oil, and is considered an affected facility under 40 CFR 60, Subpart Dc.

²The facility operates numerous mills, drills, and lathe machines that are used to shape, form, and smooth metal. Metal chards and chips are collected at each machine in 55 gallon drums; this “scrap” metal is then sold. The facility operates a “rebuild” station that is located under a large hood that exhausts to the outside through two flat panel filters; this operation basically uses jack hammers and it can create fine steel/metal refractory dust.

³ Process Combustion Corporation (a wholly owned company of Bloom Engineering Company, Inc that is located at the same facility) operates a 5 MMBtu/hr thermal oxidizer as part of their research and development. The test Thermal Oxidizer primarily burns natural gas, but can also burn propane, Fuel Oil (No. 2, 4,5 or 6 fuel oils), liquid streams and gaseous streams.

⁴Refer to Appendix A Page 3 of 15 Footnote 2 for an explanation of alternative fuels used for testing activities.

Miscellaneous Emission Sources:

The source operates three (3) parts washers. Each of these part washer tanks has an opening less than or equal to ten (10) square feet. Appendix A includes detailed emission calculations for these operations; it is estimated that 0.94 tons per year of VOC are emitted from these operations.

The source operates one (1) small woodworking area that is used to make shipping crates. The tools are controlled by a dust collection system. The dust collector dumps saw dust into a 55 gallon drum and has to be emptied approximately twice a month. PM/PM10 emissions are expected to be minimal.

Emission Controls:

Particulate emissions from the paint booths are controlled by dry filters.

EMISSION CALCULATIONS:

Ovens (P001 through P004):

The Permittee operates four (4) natural gas fired ovens. Potential to emit calculations are based on U.S. EPA AP-42 Chapter 1.4 - Natural Gas Combustion, Tables 1.4-1 through 1.4-4, published July 1998. A 15% adjustment factor was added to all emissions calculated using AP-42 factors to account for operational variability of equipment. Appendix A includes detailed emission calculations for the ovens. The following table shows the maximum potential emissions from each oven.

Maximum Potential Emissions (lb/hr) for Ovens

ID	PM ¹	PM ₁₀ ¹	SO ₂	NO _x	VOC	CO
P001	0.01	0.01	6.76E-04	0.11	0.01	0.09
P002	0.01	0.01	1.18E-03	0.20	0.01	0.17
P003	0.01	0.01	6.76E-04	0.11	0.01	0.09
P004	0.01	0.01	1.08E-03	0.18	0.01	0.15
Total	0.04	0.04	3.62E-03	0.60	0.03	0.51

¹ PM emissions based on §2104.02.a.1 limits.

Maximum Potential Emissions (ton/yr)¹ for Ovens

ID	PM ²	PM ₁₀ ²	SO ₂	NO _x	VOC	CO
P001	0.04	0.04	0.00	0.49	0.03	0.41
P002	0.06	0.06	0.01	0.86	0.05	0.73
P003	0.04	0.04	0.00	0.49	0.03	0.41
P004	0.06	0.06	0.00	0.79	0.04	0.66
Total	0.19	0.19	0.02	2.64	0.15	2.22

¹ A year is defined as any consecutive 12-month period.

² PM emissions based on §2104.02.a.1 limits.

Burner Efficiency Testing Activities (P005):

The source operates a testing laboratory equipped with two (2) boilers and over twenty (20) testing furnaces which are used for fundamental combustion and heat-transfer research, product development and improvement, and customer demonstrations. All of the boilers and furnaces burn natural gas, and some of these testing units are capable of burning various fuel oils and alternative liquid and gaseous fuels of industrial interest. No RCRA Hazardous Wastes or waste oils will be evaluated in the fuel testing. The source will calculate emission factors for gaseous fuels based on emission factors for each fuel multiplied by the total amount of each fuel burned during each day, divided by the daily operating hours. A no. 6 fuel oil equivalent liquid was determined to be the worse-case liquid stream used in testing. In order to stay below major source thresholds for SO₂, combined fuel oil usage for burner efficiency testing shall not exceed 1,000,000 gallons per any twelve (12) consecutive month period. In addition, the fuel oil burned with these activities shall not exceed 0.5% sulfur content. Potential to emit calculations are based on U.S. EPA AP-42 Chapter 1.3, Fuel Oil Combustion, Tables 1.3-1, 1.3-2, 1.3-3, 1.3-9, 1.3-10, and 1.3-11, published September 1998; and Chapter 1.4 - Natural Gas Combustion, Tables 1.4-1 through 1.4-4, published July 1998. A 15% adjustment factor was added to all emissions calculated using AP-42 factors to account for operational variability of equipment. Appendix A includes detailed emission calculations for these operations. The following table reflects the maximum potential emissions from burner efficiency testing (P005).

**Combined Maximum Potential Emissions
 for All Burner Efficiency Testing (P005)**

POLLUTANT	HOURLY EMISSION LIMIT (lbs/hr) ¹	ANNUAL EMISSION LIMIT (tons/year) ²
PM	1.95	8.52
PM ₁₀	1.95	8.52
SO ₂	10.0	43.9
NO _x	13.4	58.5
VOC	0.49	2.13
CO	5.82	25.5

¹ PM emissions based on §2104.02.a.1 limits.

² A year is defined as any consecutive 12-month period.

Refractory Mixing (P006):

The facility operates two refractory mixing stations. Both mixing stations have hoods and are controlled by dry filters. Potential to emit calculations are based on U.S. EPA AP-42 Chapter 11.12, Concrete Batching, Table 11.12-2, published June 2004. A 15% adjustment factor was added to all emissions calculated using AP-42 factors to account for operational variability of equipment. Appendix A includes detailed emission calculations for these operations. The following table shows the maximum potential emissions from each refractory mixing station.

**Maximum Potential Emissions
 for Each Refractory Mixing Station(P006)**

POLLUTANT	HOURLY EMISSION LIMIT (lbs/hr)	ANNUAL EMISSION LIMIT (tons/year)¹	COMBINED ANNUAL EMISSION LIMIT (tons/year)¹
PM	0.06	0.27	0.54
PM ₁₀	0.02	0.07	0.13

¹ A year is defined as any consecutive 12-month period.

Paint Booth (P007):

The facility operates a paint booth in order to apply coatings to burners and accessories. The VOC and HAP emissions from these surface coating operations are based on a material balance (2008 coating usage multiplied by constituent percentage) scaled up from 2008 actual operating hours to 8,760 hour per year. In order to be conservative, emission estimates were multiplied by a 15% adjustment factor. PM and PM10 emissions are controlled by dry filters and calculated based on the amount of paint used, average paint density, and the control efficiency of the dry filter in the paint booths. Appendix A includes detailed emission calculations for the paint booths. The following table shows the combined maximum potential emissions from the surface coating operations.

Maximum Potential Emissions for Paint Booth (P007)

POLLUTANT	HOURLY EMISSION LIMIT (lbs/hr)	ANNUAL EMISSION LIMIT (tons/year)¹
PM/PM ₁₀	0.06	0.32
VOC	1.24	5.45
Total HAP	0.63	2.75
Xylene	0.08	0.36
Ethyl benzene	0.01	0.02
Methyl benzene	0.54	2.36

¹ A year is defined as any consecutive 12-month period.

Welding Operations (P008):

Emissions were estimated from welding operations using electrode consumption provided by the source. Potential to emit calculations are based on U.S. EPA AP-42 Chapter 12.19, Tables 12.19-1 and 12.19-2, published January 1995. A 15% adjustment factor was added to all emissions calculated using AP-42 factors to account for operational variability of equipment. Note: some electrodes for certain welding processes used at this facility were not identified in AP-42; in these cases, a representative AP-42 emission factor was used to estimate emissions. PM/PM10 emissions from the welding operations are estimated to be 0.06 tons per year. Total HAP emissions are expected to be 0.01 tons per year. Appendix A includes detailed emission calculations for the welding operations.

Plasma Cutting (P009):

The facility has one (1) plasma cutting operation; the majority of cutting is done on 3/8" to 1/2" A36 type

steel. Other cutting is done on various carbon and stainless steel and aluminum grade metals. This facility also operates manual plasma torches when required. All fumes and dust are exhausted indoors through a dust collector and HEPA filter. Potential to emit calculations are based on The Swedish Institute of Production Engineering Research document entitled "Emission of Fume, Nitrogen Oxides and Noise in Plasma Cutting of Stainless and Mild Steel", published March 1994. A 15% adjustment factor was added to all emissions calculated to account for operational variability of equipment. Appendix A includes detailed emission calculations for the plasma cutting operations. The following table shows the potential emissions from the plasma cutting operations.

POLLUTANT	HOURLY EMISSION LIMIT (lbs/hr)	ANNUAL EMISSION LIMIT (tons/year) ¹
PM	0.04	0.17
PM ₁₀	0.04	0.17

Machining (P010):

The facility operates numerous mills, drills, and lathe machines that are used to shape, form, and smooth metal. Metal chards and chips are collected at each machine in 55 gallon drums and emissions are expected to be negligible; this "scrap" metal is then sold. The facility also operates a "rebuild" station that is located under a large hood that exhausts to the outside through two flat panel filters and emissions are expected to be negligible; this intermittent operation basically uses jack hammers and can create fine steel/metal refractory dust.

Emergency Generators (EG001 and EG002):

The two (2) emergency generators are natural gas fired. Emission calculations were based on U.S. EPA AP-42 Chapter 3.2 - Natural Gas-fired Reciprocating Engines, Table 3.2-1, published August 2000. A 15% adjustment factor was added to all emissions calculated using AP-42 factors to account for operational variability of equipment. The generator's potential to emit is based on an operating time of 500 hours per year as set forth in the September 6, 1995 memorandum from John S. Seitz of US EPA on the subject of "Calculating Potential to Emit for Emergency Generators". Appendix A includes detailed emission calculations for each emergency generator. The following table shows the maximum potential emissions from each emergency generator fired with natural gas.

Maximum Potential Emissions (lb/hr) for Each Generator

ID	PM	PM ₁₀	SO ₂	NO _x	VOC	CO
EG-001	3.89E-03	3.89E-03	4.73E-05	0.26	9.66E-03	0.03
EG-002	1.30E-02	1.30E-02	1.59E-04	0.85	0.03	0.10
Total	1.69E-02	1.69E-02	2.06E-04	1.11	0.04	0.14

Maximum Potential Emissions (tons/year¹) for Each Generator

ID	PM	PM ₁₀	SO ₂	NO _x	VOC	CO
EG-001	8.45E-04	8.45E-04	1.03E-05	0.06	2.10E-03	6.76E-03
EG-002	2.83E-03	2.83E-03	3.96E-05	0.21	0.01	0.03
Total	3.68E-03	3.68E-03	4.99E-05	0.27	0.01	0.03

¹ A year is defined as any consecutive 12-month period.

Burner Efficiency Testing Activities (P011):

The source operates a 5 MMBtu/hr test thermal oxidizer as part of their research and development. The unit is capable of burning various fuels. In order to stay below major source thresholds for SO₂, the testing unit shall not exceed 810 hours of operation per year. In addition, the fuels burned with these activities shall not exceed 0.5% (w/w) sulfur content. Potential to emit calculations are based on U.S. EPA AP-42 Chapter 1.3, Fuel Oil Combustion, Tables 1.3-1, 1.3-2, 1.3-3, 1.3-9, 1.3-10, and 1.3-11, published September 1998; and Chapter 1.4 - Natural Gas Combustion, Tables 1.4-1 through 1.4-4, published July 1998. A 15% adjustment factor was added to all emissions calculated using AP-42 factors to account for operational variability of equipment. Appendix A includes detailed emission calculations for these operations. The following table reflects the maximum potential emissions from burner efficiency testing (P011).

Maximum Potential Emissions for Test Thermal Oxidizer (P011)

POLLUTANT	HOURLY EMISSION LIMIT (lbs/hr) ¹	ANNUAL EMISSION LIMIT (tons/year) ²
PM	0.08	0.35
PM ₁₀	0.08	0.35
SO ₂	0.27	1.20
NO _x	0.76	3.32
VOC	0.04	0.15
CO	0.49	2.16

¹ PM emissions based on §2104.02.a.1 limits.

² A year is defined as any consecutive 12-month period.

EMISSIONS SUMMARY (entire facility):

Maximum Potential Emissions for Entire Facility

POLLUTANT	ANNUAL EMISSION LIMIT (tons/year) ¹
PM	10.1
PM ₁₀	9.76
SO ₂	45.1
NO _x	64.8
VOC	8.83
CO	29.9
HAPs	3.89

¹ A year is defined as any consecutive 12-month period.

OPERATING PERMIT APPLICATION COMPONENTS:

1. Permit Application No. 0295, dated May 30, 1996 as updated on March 4, 2008.
2. Supplemental information collected during a site visit August 7, 2008.

REGULATORY APPLICABILITY:

1. **Article XXI Requirements for Issuance:**

The following Article XXI requirements apply to this facility:

§2103.12.a.2.B (Standards for Issuance): Existing sources, where no limits have been established under Article XXI, are subject to Reasonably Available Control Technology (RACT) requirements.

- (a) The Department has determined that RACT for the existing ovens (P001 through P004) is that they each shall burn natural gas only. Particulate and sulfur oxide limitations have been established by §2104.02.a.1 and §2104.03.a.2.A, respectively.
- (b) The Department has determined that RACT for the burner efficiency testing activities (P005) shall be that combined fuel oil and alternative fuel usage shall not exceed 1,000,000 gallons per any twelve (12) consecutive month period. In addition, the fuels burned with these activities shall not exceed 0.5% (w/w) sulfur content. Particulate and sulfur oxide limitations have been established by §2104.02.a.1 and §2104.03.a.2.A, respectively.
- (c) Particulate limitations for the refractory mixing operations (P006) have been established by §2104.02.b. In addition, these operations shall each be controlled by dry filters.
- (d) The Department considered BACT for the paint booth (P007) to be the following:
 - i. Emissions from the paint booth (P007) shall not exceed the following at any time:

POLLUTANT	HOURLY EMISSION LIMIT (lbs/hr)	ANNUAL EMISSION LIMIT (tons/year)¹
PM/PM ₁₀	0.06	0.32
VOC	1.24	5.45
Total HAP	0.63	2.75
Xylene	0.08	0.36
Ethyl benzene	0.01	0.02
Methyl benzene	0.54	2.36

¹ A year is defined as any consecutive 12-month period.

- ii. The surface coating operations shall only be performed in a paint booth and use high volume low pressure (HVLP) spray guns for all coating applications at all times. These guns shall be maintained and operated according to manufacturer's recommendations and good engineering practice.
 - iii. The paint booth shall be equipped with properly installed and maintained dry filters. All emissions from the surface coating operations shall exhaust through the filters at all times. Brush touchup painting is completed outside of the paint booth when required.
- (e) Particulate limitations for the plasma cutting operations (P009) have been established by §2104.02.b. The permittee shall not operate or allow to be operated the plasma cutting operations (P009) unless the dust collector system is controlling all particulate matter

- generated by the associated emission units and the dust collector system is properly maintained and operated in accordance with manufacturer's specifications.
- (f) The Department has determined that RACT for the existing natural gas fired emergency generators (EG001 and EG002) is the potential to emit as shown in Appendix A, page 5. Each generator is limited to 500 hours of operation per any twelve (12) consecutive month period.
 - (g) The Department has determined that RACT for the test thermal oxidizer (P011) shall be that operation is limited to 810 hours per any twelve (12) consecutive month period. In addition, the fuels burned with these activities shall not exceed 0.5% (w/w) sulfur content. Particulate and sulfur oxide limitations have been established by §2104.02.a.1 and §2104.03.a.2.A, respectively.

§2103.20.b.4 (Synthetic Minors):

This rule applies because in order to stay below major source thresholds for SO₂, combined fuel oil usage for the burner efficiency testing activities (P005) shall not exceed 1,000,000 gallons per any twelve (12) consecutive month period and the test thermal oxidizer (P011) shall be limited to 810 hours of operation per any twelve (12) consecutive month period. In addition, the fuel oil burned with these activities shall not exceed 0.5% (w/w) sulfur content.

§2104.02.a.1 (Particulate Mass Emissions): This rule applies to fuel burning or combustion equipment where the actual heat input to such equipment is greater than 0.50 MMBtu per hour. This rule limits particulate matter emissions as follows:

- (a) Pursuant to this rule, particulate emissions from ovens P001 through P004 shall not exceed 0.008 lbs/MMBtu of actual heat input at any time while combusting natural gas.
- (b) Pursuant to this rule, particulate emissions from the test thermal oxidizer (P011) and any burner with an actual heat input capacity greater than 0.50 MMBtu per hour shall not exceed 0.008 lbs/MMBtu of actual heat input at any time while combusting natural gas during efficiency testing activities (P005 and P011).
- (c) Pursuant to this rule, particulate emissions from the test thermal oxidizer (P011) and any burner with an actual heat input capacity greater than 0.50 MMBtu per hour shall not exceed 0.015 lbs/MMBtu of actual heat input at any time while combusting grade No. 2 fuel oil during efficiency testing activities (P005 and P011).
- (d) Pursuant to this rule, particulate emissions from the test thermal oxidizer (P011) and any burner with an actual heat input capacity greater than 0.50 MMBtu per hour shall not exceed 0.40 lbs/MMBtu of actual heat input at any time while combusting higher grade fuel oils or alternative fuels than No.2 during efficiency testing activities (P005 and P011).
- (e) This rule does not apply to the emergency generators (EG001 and EG002) because these generators have an actual heat input less than 0.50 MMBtu/hr.

§2104.02.b (Particulate Mass Emissions): This rule applies to processes that have the potential to emit particulate matter that are not listed in Subsection c, d, e, f, g, or h and for which there is no standard established under Part E of Article XXI. Pursuant to this rule, particulate matter emissions from the refractory mixing operations (P006) and the plasma cutting operation (P010) shall each not exceed seven (7) pounds in any 60 minute period or 100 pounds in any 24-hour period. As shown in Appendix A, page 6, use of the dry filters ensures compliance with this limit for P006.

§2104.03 (Sulfur Oxide Emissions): This rule applies to fuel burning or combustion equipment.

- (a) Pursuant to this rule, sulfur oxide emissions from ovens P001 through P004 shall each not exceed the potential to emit because these units burn only natural gas.
- (b) Pursuant to this rule, sulfur oxide emissions from the test thermal oxidizer (P011) and any burner with an actual heat input capacity greater than 0.50 MMBtu per hour shall not exceed 1.0 pound per million BTU of actual heat input at any time while combusting fuel oil or alternative fuel during efficiency testing activities (P005 and P011).
- (c) This rule does not apply to the emergency generators (EG001 and EG002) because these generators have an actual heat input less than 0.50 MMBtu/hr.

§2105.15.a (Cold Cleaning Degreaser): The requirements of §2105.15.a for cold cleaner degreasers are not applicable to the parts washers at this facility because none of the parts washers have an opening greater than 10 square feet.

§2105.10 (Surface Coating Processes): The requirements of §2105.10 for surface coating processes are applicable to facilities which have emitted VOCs into the outdoor atmosphere in quantities greater than 3 pounds per hour, 15 pounds per day, or 2.7 tons per year during a calendar year since January 1, 1987. Pursuant to §2105.10, the permittee may not cause or permit the emission into the outdoor atmosphere of VOCs from the following surface coating process categories unless the VOC content of each as applied coating is equal to or less than the standard specified in the table below (§2105.10; Table 2105.10):

Emission Limitations for §2105.10; Table 2105.10

Coating Type	Weight of VOC per Volume of Coating Solids (lbs/gallon) ¹
Clear coatings	10.34
Air-dried coatings	6.67
Extreme performance coatings	6.67
All other coatings	5.06

¹If more than one emission limitation for miscellaneous metal parts and products applies to a specific coating, then the least stringent emission limitation shall apply.

- 2. **Testing Requirements:**
Testing is not required, but the Department reserves the right to require testing in the future to assure compliance with the terms and conditions of Operating Permit No. 0295.
- 3. **New Source Review (NSR) and Prevention of Significant Deterioration (PSD):**
NSR and PSD do not apply. The facility is a minor source for all criteria pollutants.

4. **New Source Performance Standards**

40 CFR 60, Subpart Dc for Small Industrial-Commercial-Institutional Steam Generating Units: The lab research boiler B002, used as part of the burner efficiency testing activities (P005), commenced construction after June 9, 1989 and the maximum design heat input capacity is greater than 10 MMBtu/hr. Therefore, the boiler is subject to the requirements of 40 CFR 60, Subpart Dc.

40 CFR 60, Subpart IIII for Stationary Compression Ignition Internal Combustion Engines: The emergency generators, identified as EG001 and EG002, commenced construction before July 11, 2005 and were manufactured before April 1, 2006. Therefore, these generators are not subject to this rule.

5. **National Emission Standards For Hazardous Air Pollutants**

40 CFR 63, Subpart MMMM for Surface Coating of Miscellaneous Metal Parts and Products: This source is not a major source of HAPs. Therefore, the surface coating area is not subject to the requirements of 40 CFR 63, Subpart MMMM.

40 CFR 63, Subpart ZZZZ for Stationary Reciprocating Internal Combustion Engines: Pursuant to 40 CFR 63.6590(b)(3), a stationary RICE that is considered an existing emergency stationary RICE does not have to meet the requirements of 40 CFR 63, Subpart ZZZZ and no initial notification is necessary. Therefore, the emergency generators EG001 and EG002 are not subject to this subpart because they commenced construction before June 12, 2006 and are considered existing emergency stationary RICE.

40 CFR 63, Subpart HHHHHH for Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources: The surface coating operations located at this facility does not perform spray application of coatings that contain target HAP, as defined in §63.11180. Therefore, the surface coating operations are not subject to this rule.

40 CFR 63, Subpart XXXXXX for Nine Metal Fabrication and Finishing Source Categories: This rule applies because the source is considered an area source primarily engaged in heating equipment, and performs machining, and welding using MFHAP (defined to be the use of materials that contain cadmium, chromium, lead, or nickel in amounts greater than or equal to 0.1 percent by weight (of the metal), and materials that contain manganese in amounts greater than or equal to 1.0 percent by weight (of the metal), as shown in formulation data provided by the manufacturer or supplier, such as the Material Safety Data Sheet for the material). Note: the facility performs surface coating operations; however, this activity does not qualify as a spray painting affected source because the facility does not use coatings that contain MFHAP. Pursuant to §63.11515(a), the source is required to comply with this rule by July 25, 2011.

The numerous mills, drills, and lathe machines located at this source qualify as machining as defined in 40 CFR 63.11522. Therefore, pursuant to 40 CFR 63.11516(b), for each machining operation that uses materials that contain MFHAP, the permittee must take measures necessary to minimize excess dust in the surrounding area to reduce MFHAP emissions, as practicable; and operate all equipment associated with machining according to manufacturer's instructions.

This source uses greater than 2,000 pounds of welding rod per year containing MFHAP. Therefore, the permittee is required to comply with §63.11516(f)(1) through (8). Pursuant to §63.11516(f)(1), the permittee must operate all equipment, capture, and control devices associated with welding operations according to manufacturer's instructions, and is required to maintain a record of manufacturer's specifications for the capture and control devices, as specified by the requirements in §63.11519(c)(4). Pursuant to §63.11516(f)(2), the permittee must implement one or more of the following management practices to minimize emissions of MFHAP, as practicable, while maintaining the required welding quality through the application of sound engineering judgment: (1) Use welding processes with reduced fume generation capabilities (e.g., gas metal arc welding (GMAW)— also called metal inert gas welding (MIG)); (2) Use welding process variations (e.g., pulsed current GMAW), which can reduce fume generation rates; (3) Use welding filler metals, shielding gases, carrier gases, or other process materials which are capable of reduced welding fume generation; (4) Optimize welding process variables (e.g., electrode diameter, voltage, amperage, welding angle, shield gas flow rate, travel speed) to reduce the amount of welding fume generated; and (5) Use a welding fume capture and control system, operated according to the manufacturer's specifications. Furthermore, the permittee must demonstrate that management practices or fume control measures are being implemented by complying with the requirements in §63.11516(f)(3) through (8).

6. **Risk Management Plan; CAA Section 112(r):**

The source is not required to have a risk management plan at this time because none of the regulated chemicals exceed the thresholds on the regulation.

METHOD OF DEMONSTRATING COMPLIANCE:

Compliance with the emission standards set in this permit will be demonstrated by:

- (a) recording natural gas and fuel oil and alternative fuel consumption, the name of the natural gas, fuel oil and alternative fuel supplier, and the specifications of natural gas, fuel oil and alternative fuel; and providing written notice to the Department annually;
- (b) recording the following for each coating, thinner, and other components as supplied:
 - i. The coating, thinner, or component name and identification number;
 - ii. The volume used;
 - iii. The mix ratio;
 - iv. The density or specific gravity;
 - v. The weight percent of total volatiles, water, solids, and exempt solvents; and
 - vi. The volume percent of solids.
- (c) recording daily VOC/HAP content of each coating, thinner, and other component as supplied, and the VOC/HAP content of each as applied coating;
- (d) weekly notation of the pressure drop across the baghouse controlling particulate emissions from the plasma cutting operations;
- (e) recording emergency generator fuel consumption, cold starts, operating hours, and maintenance activities, maintaining fuel certifications from fuel suppliers, and providing written notice to the Department semiannually;
- (f) maintaining manufacturer's instructions; and
- (g) recording operating hours of the test thermal oxidizer.

See Operating Permit No. 0295, for the specific conditions for determining compliance with the applicable requirements.

RECOMMENDATION:

All applicable Federal, State and County regulations have been addressed in the permit application. The operating permit application for Bloom Engineering Company, Inc. should be approved with the emission limitations and terms and conditions in Operating Permit No. 0295.