

**CONSTRUCTION PERMIT
OFFICE OF AIR MANAGEMENT**

**Marine Corporation of America, Inc.
980 Hurricane Road
Franklin, Indiana 46131**

is hereby authorized to construct

- (a) Nineteen (19) natural gas-fired unit heaters with heat input capacities of 0.13 million British thermal units per hour, each and using liquid propane gas as a backup fuel.
- (b) Four (4) natural gas-fired parts washers, known as E9, E17, E28, and E30, with heat input capacities of 0.1475 million British thermal units per hour, each.
- (c) Three (3) dynamometers, known as E1, E2, and E29, for testing diesel marine engines with a horsepower range of 260 to 330.
- (d) One (1) spray paint booth, known as E3, for coating metal marine engines equipped with air atomization spray guns and dry filters for overspray control, capacity: 4.5 engines per hour.
- (e) Three (3) welding stations, one (1) metal inert gas (MIG) welding station with a welding rate of 12 inches per hour, one (1) tungsten inert gas (TIG) welding station with a welding rate of 36 inches per hour, and one (1) oxyacetylene welding station with a welding rate of 1 inch per hour with oxyacetylene and plasma flame-cutting at a rate of 1 inch per minute.

This permit is issued to the above mentioned company (herein known as the Permittee) under the provisions of 326 IAC 2-1 and 40 CFR 52.780, with conditions listed on the attached pages.

Construction Permit No.: CP 081-5398-00041	
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date:

Construction Conditions

General Construction Conditions

1. That the data and information supplied with the application shall be considered part of this permit. Prior to any proposed change in construction which may affect allowable emissions, the change must be approved by the Office of Air Management (OAM).
2. That this permit to construct does not relieve the permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

Effective Date of the Permit

3. That pursuant to IC 13-15-5-3, this permit becomes effective upon its issuance.
4. That pursuant to 326 IAC 2-1-9(b)(Revocation of Permits), the Commissioner may revoke this permit if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.
5. That notwithstanding Construction Condition No. 6, all requirements and conditions of this construction permit shall remain in effect unless modified in a manner consistent with procedures established for modifications of construction permits pursuant to 326 IAC 2 (Permit Review Rules).

First Time Operation Permit

6. That this document shall also become a first-time operation permit pursuant to 326 IAC 2-1-4 (Operating Permits) when, prior to start of operation, the following requirements are met:
 - (a) The attached affidavit of construction shall be submitted to the Office of Air Management (OAM), Permit Administration & Development Section, verifying that the facilities were constructed as proposed in the application. The facilities covered in the Construction Permit may begin operating on the date the Affidavit of Construction is postmarked or hand delivered to IDEM.
 - (b) If construction is completed in phases; i.e., the entire construction is not done continuously, a separate affidavit must be submitted for each phase of construction. Any permit conditions associated with operation start up dates such as stack testing for New Source Performance Standards (NSPS) shall be applicable to each individual phase.
 - (c) Permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section and attach it to this document.
 - (d) The operation permit will be subject to annual operating permit fees pursuant to 326 IAC 2-1-7.1(Fees).
 - (e) Pursuant to 326 IAC 2-1-4, the Permittee shall apply for an operation permit renewal at least ninety (90) days prior to the expiration date established in the validation letter. The operation permit issued shall contain as a minimum the conditions in the Operation Conditions section of this permit.

7. That when the facility is constructed and placed into operation the following operation conditions shall be met:

Operation Conditions

General Operation Conditions

1. That the data and information supplied in the application shall be considered part of this permit. Prior to any change in the operation which may result in an increase in allowable emissions exceeding those specified in 326 IAC 2-1-1 (Construction and Operating Permit Requirements), the change must be approved by the Office of Air Management (OAM).
2. That the permittee shall comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder.

Preventive Maintenance Plan

3. That pursuant to 326 IAC 1-6-3 (Preventive Maintenance Plans), the Permittee shall prepare and maintain a preventive maintenance plan, including the following information:
- (a) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices.
 - (b) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions.
 - (c) Identification of the replacement parts which will be maintained in inventory for quick replacement.

The preventive maintenance plan shall be submitted to IDEM, OAM upon request and shall be subject to review and approval.

Transfer of Permit

4. That pursuant to 326 IAC 2-1-6 (Transfer of Permits):
- (a) In the event that ownership of this marine engine production source is changed, the Permittee shall notify OAM, Permit Branch, within thirty (30) days of the change. Notification shall include the date or proposed date of said change.
 - (b) The written notification shall be sufficient to transfer the permit from the current owner to the new owner.
 - (c) The OAM shall reserve the right to issue a new permit.

Permit Revocation

5. That pursuant to 326 IAC 2-1-9(a) (Revocation of Permits), this permit to construct and operate may be revoked for any of the following causes:
- (a) Violation of any conditions of this permit.

- (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.
- (c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this permit shall not require revocation of this permit.
- (d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.
- (e) For any cause which establishes in the judgment of IDEM, the fact that continuance of this permit is not consistent with purposes of 326 IAC 2-1 (Permit Review Rules).

Availability of Permit

6. That pursuant to 326 IAC 2-1-3(I), the Permittee shall maintain the applicable permit on the premises of this source and shall make this permit available for inspection by the IDEM or other public official having jurisdiction.

Opacity Limitations

7. That pursuant to 326 IAC 5-1-2 (Visible Emission Limitations) except as provided in 326 IAC 5-1-3 (Temporary Exemptions), the visible emissions shall meet the following:
- (a) visible emissions shall not exceed an average of 40 percent opacity in 24 consecutive readings.
 - (b) visible emissions shall not exceed 60 percent opacity for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period.

Fugitive Dust Emissions

8. That pursuant to 326 IAC 6-4 (Fugitive Dust Emissions), the Permittee shall be in violation of 326 IAC 6-4 (Fugitive Dust Emissions) if any of the criteria specified in 326 IAC 6-4-2(1) through (4) are violated. Observations of visible emissions crossing the property line of the source at or near ground level must be made by a qualified representative of IDEM. [326 IAC 6-4-5(c)].
9. That pursuant to 326 IAC 6-3 (Process Operations):
- (a) The dry filters for particulate matter overspray control shall be in operation at all times when the spray paint booth is in operation.
 - (b) The spray paint, welding and the plasma cutting operations shall each comply with 326 IAC 6-3-2(c) using the following equation:

P is equal to or less than 60,000 pounds per hour (30 tons per hour):

$$E = 4.10P^{0.67} \quad \text{where: } E = \text{rate of emission in pounds per hour,} \\ P = \text{process weight in tons per hour.}$$

- (c) Daily inspections shall be performed to verify the placement, integrity and particulate loading of the dry filters.

- (d) Additional inspections and preventive measures shall be performed as prescribed in the Preventive Maintenance Plan.

Volatile Organic Compound

- 10. The input of volatile organic compounds (VOC), including clean up solvent, minus the VOC solvent shipped out, delivered to the applicators of the spray paint booth shall be limited to 2.0 tons per month, equivalent to 24.0 tons per year. Therefore, 326 IAC 8-2-9 and 326 IAC 8-1-6 will not apply.

Reporting Requirements

- 11. That a log of information necessary to document compliance with operation permit condition no. 10 shall be maintained. These records shall be kept for at least the past 36-month period and made available upon request to the Office of Air Management (OAM). These records shall include the coating, thinner and clean up solvent usage, material safety data sheets (MSDS) and the date of use.

- (a) A quarterly summary shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Management
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

within 30 days after the end of the quarter being reported in the format attached.

- (b) Unless otherwise specified in this permit, any notice, report, or other submissions required by this permit shall be timely if:
 - (i) Delivered by U.S. mail and postmarked on or before the date it is due; or
 - (ii) Delivered by any other method if it is received and stamped by IDEM, OAM, on or before the date it is due.
- (c) All instances of deviations from any requirements of this permit must be clearly identified in such reports.
- (d) Any corrective actions taken as a result of an exceedance of a limit, an excursion from the parametric values, or a malfunction that may have caused excess emissions must be clearly identified in such reports.
- (e) The first report shall cover the period commencing the postmarked submission date of the Affidavit of Construction.

Open Burning

- 12. That the permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR MANAGEMENT
COMPLIANCE DATA SECTION**

Quarterly Reporting Form

Source Name: Marine Corporation of America, Inc.
Source Address: 980 Hurricane Road, Franklin, Indiana 46131
Permit No.: CP 081-5398-00041
Facility: One (1) spray paint booth, known as E3
Parameters: Volatile Organic Compounds delivered to the applicators
Limit: 2.0 tons per month for the one (1) spray paint booth

Year: _____

Month	VOC emissions (tons)

9 No deviation occurred in this quarter.

9 Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____

Title/Position: _____

Signature: _____

Date: _____

Indiana Department of Environmental Management Office of Air Management

Technical Support Document (TSD) for New Construction and Operation

Source Background and Description

Source Name: Marine Corporation of America, Inc.
 Source Location: 980 Hurricane Road, Franklin, Indiana 46131
 County: Johnson
 Construction Permit No.: CP 081-5398-00041
 SIC Code: 3519
 Permit Reviewer: CarrieAnn Ortolani

The Office of Air Management (OAM) has reviewed an application from Marine Corporation of America, Inc. relating to the construction and operation of a marine engine production source, consisting of the following equipment:

- (a) Nineteen (19) natural gas-fired unit heaters with heat input capacities of 0.13 million British thermal units per hour, each and using liquid propane gas as a backup fuel.
- (b) Four (4) natural gas-fired parts washers, known as E9, E17, E28, and E30, with heat input capacities of 0.1475 million British thermal units per hour, each.
- (c) Three (3) dynamometers, known as E1, E2, and E29, for testing diesel marine engines with a horsepower range of 260 to 330.
- (d) One (1) spray paint booth, known as E3, for coating metal marine engines equipped with air atomization spray guns and dry filters for overspray control, capacity: 4.5 engines per hour.
- (e) Three (3) welding stations, one (1) metal inert gas (MIG) welding station with a welding rate of 12 inches per hour, one (1) tungsten inert gas (TIG) welding station with a welding rate of 36 inches per hour, and one (1) oxyacetylene welding station with a welding rate of 1 inch per hour with oxyacetylene and plasma flame-cutting at a rate of 1 inch per minute.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
E1	One (1) dynamometer	12.7	0.50	NA	NA
E2	One (1) dynamometer	12.7	0.50	NA	NA
E29	One (1) dynamometer	14.5	0.50	NA	NA
E3	spray paint booth	14.7	2.50	NA	68
E9	One (1) parts washer	14.7	1.53	NA	180
E17	One (1) parts washer	14.7	1.53	NA	180
E28	One (1) parts washer	14.7	1.50	NA	180

E30	One (1) parts washer	14.7	1.53	NA	180
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Enforcement Issue

IDEM is aware that this marine engine production source has been constructed and operated prior to receipt of the proper permit. IDEM is reviewing this matter and will take appropriate action. This proposed permit is intended to satisfy the requirements of the construction permit rules.

Recommendation

The staff recommends to the Commissioner that the construction and operation be approved. This recommendation is based on the following facts and conditions:

Information, unless otherwise stated, used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on March 11, 1996, with additional information received on April 30, 1996, July 21, 1997, August 26, 1997, and September 11, 1997.

Emissions Calculations

See Pages 1 through 7 of TSD Appendix A (Emissions Calculation Spreadsheets) for detailed calculations.

Total Potential and Allowable Emissions

Indiana Permit Allowable Emissions Definition (after compliance with applicable rules, based on 8,760 hours of operation per year at rated capacity):

Pollutant	Allowable Emissions (tons/yr)	Potential Emissions (tons/yr)
Particulate Matter (PM)	1.24	34.7
Particulate Matter (PM ₁₀)	1.24	34.7
Sulfur Dioxide (SO ₂)	0.035	0.035
Volatile Organic Compounds (VOC)	38.9	38.9
Carbon Monoxide (CO)	0.839	0.839
Nitrogen Oxides (NO _x)	2.24	2.24
Single Hazardous Air Pollutant (HAP)	9.58	9.58
Combination of HAPs	23.0	23.0

- (a) Allowable emissions of PM are determined from the applicability of 326 IAC 6-3-2. Since the process weight rates at the spray paint booth and at the welding stations are variable, the PM emission limit can not be computed as a constant limit. The allowable emissions listed are the potential emissions after controls. See attached spreadsheets for detailed calculations.

- (b) The allowable emissions based on the rules cited are less than the potential emissions, therefore, the allowable emissions are used for the permitting determination.
- (c) Allowable emissions (as defined in the Indiana Rule) of VOC are greater than 25 tons per year. Therefore, pursuant to 326 IAC 2-1, Sections 1 and 3, a construction permit is required.

County Attainment Status

- (a) Volatile organic compounds (VOC) and oxides of nitrogen are precursors for the formation of ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to the ozone standards. Johnson County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (b) Johnson County has been classified as attainment or unclassifiable for all remaining criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (c) Fugitive Emissions
Since this type of operation is not one of the 28 listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive PM emissions are not counted toward determination of PSD and Emission Offset applicability.

Source Status

New Source PSD Definition (emissions after controls, based on limited production):

Pollutant	Emissions (tons/yr)
PM	0.859
PM ₁₀	0.859
SO ₂	0.035
VOC	24.1
CO	0.839
NO _x	2.24
Single HAP	9.58
Combination HAPs	23.0

- (a) This new source is **not** a major stationary source because no attainment pollutant is emitted at a rate of 250 tons per year or greater and it is not in one of the 28 listed source categories. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply.

- (b) The VOC is limited to 24.1 tons per year. This limit is equivalent to a limited throughput of surface coating materials including clean up solvents delivered to the applicators at the spray paint booth, E3, constructed prior to July 1, 1990 and after November 1, 1980 in Johnson County, resulting in VOC emissions of no more than 2.0 tons per month, equivalent to 24.0 tons per year from the spray paint booth. This will make the requirements of 326 IAC 8-2-9 and 326 IAC 8-1-6 not applicable.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This new source is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) each criteria pollutant is less than 100 tons per year,
- (b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
- (c) any combination of HAPs is less than 25 tons per year.

This is the first air approval issued to this source.

Federal Rule Applicability

There are no New Source Performance Standards (326 IAC 12) and 40 CFR Part 63 applicable to this facility.

State Rule Applicability

326 IAC 5-1-2 (Visible Emission Limitations)

- (a) visible emissions shall not exceed an average of 40 percent opacity in 24 consecutive readings.
- (b) visible emissions shall not exceed 60 percent opacity for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period.

326 IAC 6-3-2 (Particulate Emission Limitations)

The spray operations, welding operations and plasma cutting operations shall comply with 326 IAC 6-3-2(c). The 326 IAC 6-3-2 equations are as follows: $E = 4.10 P^{0.67}$, where P equals process weight in tons per hour for process weights up to and including sixty thousand (60,000) pounds per hour and E equals the allowable emission rate in pounds per hour. For process weights in excess of sixty thousand (60,000) pounds per hour, $E = 55.0 P^{0.11} - 40$. Compliance will be demonstrated by operating dry filters at all times when the spray paint booth, E3, is in operation.

326 IAC 8-2-9 (Miscellaneous Metal Coating)

Since this spray paint booth, E3, constructed prior to July 1, 1990 and after November 1, 1980 in Johnson County, has the potential to emit more than 25 tons per year of VOC, 326 IAC 8-2-9 could

be applicable pursuant to 326 IAC 8-2-1 (a) (2). This source has agreed to limit VOC emissions from the coating operations to 2.0 tons per month (24.0 tons per year). Therefore, this source will not be required to meet the requirements of 326 IAC 8-2-9.

326 IAC 8-1-6 (Best Available Control Technology)

Since this spray paint booth, E3, has the potential to emit more than 25 tons per year of VOC, 326 IAC 8-1-6 could be applicable. This source has agreed to limit VOC emissions from the coating operations to 2.0 tons per month (24.0 tons per year). Therefore, this source will not be required to install Best Available Control Technology (BACT). No other 326 IAC 8 rules apply.

Air Toxic Emissions

Indiana presently requests applicants to provide information on emissions of the 187 hazardous air pollutants set out in the Clean Air Act Amendments of 1990. These pollutants are either carcinogenic or otherwise considered toxic and are commonly used by industries. They are listed as air toxics on the Office of Air Management (OAM) Construction Permit Application Form Y.

- (a) This new source will emit levels of air toxics less than those which constitute a major source according to Section 112 of the 1990 Amendments to the Clean Air Act.
- (b) See attached spreadsheets for detailed air toxic calculations.

Conclusion

The construction of this marine engine production source will be subject to the conditions of the attached proposed **Construction Permit No. CP 081-5398-00041**.

**Appendix A: Emission Calculations
Internal Combustion Engines - Diesel Fuel
Turbine (>250 and <600 HP)
Reciprocating**

**Company Name: Marine Corporation of America
Address City IN Zip: 980 Hurricane Road, Franklin, Indiana 46131
CP: 081-5398
Plt ID: 081-00041
Reviewer: CarrieAnn Ortolani
Date: March 11, 1996**

Emissions calculated based on heat input capacity (MMBtu/hr)

Three (3) Dynamometers

Maximum Heat Input Capacity
MM Btu/hr

0.021

Emission Factor in lb/MMBtu	Pollutant					
	PM	PM10	SO2	NOx	VOC	CO
	0.31	0.31	0.29	4.41	0.4	0.95
Potential Emission in tons/yr	0.029	0.029	0.027	0.406	0.033	0.087

Methodology

Emission Factors are from AP42 (Fifth edition, January 1995), Table 3.3-2

Emission (tons/yr) = [Heat input rate (MMBtu/hr) x Emission Factor (lb/MMBtu)] * 8760 hr/yr / (2,000 lb/ton)

**Appendix A: Emission Calculations
 Natural Gas Combustion Only
 MM Btu/hr < 0.3
 Residential Furnaces**

Company Name: Marine Corporation of America
Address City IN Zip: 980 Hurricane Road, Franklin, Indiana 46131
CP: 081-5398
Plt ID: 081-00041
Reviewer: CarrieAnn Ortolani
Date: March 11, 1996

nineteen (19) unit heaters
 Heat Input Capacity
 MMBtu/hr

Potential Throughput
 MMCF/yr

2.47

21.6

Emission Factor in lb/MMCF	Pollutant					
	PM	PM10	SO2	NOx	VOC	CO
	11.2	11.2	0.6	94.0	7.3	40.0
Potential Emission in tons/yr	0.121	0.121	0.006	1.02	0.079	0.433

Methodology

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Emission Factors for NOx: uncontrolled = 94

Emission Factors for CO: uncontrolled = 40

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3.

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

**Appendix A: Emission Calculations
 Natural Gas Combustion Only
 MM Btu/hr < 0.3
 Residential Furnaces**

Company Name: Marine Corporation of America
Address City IN Zip: 980 Hurricane Road, Franklin, Indiana 46131
CP: 081-5398
Plt ID: 081-00041
Reviewer: CarrieAnn Ortolani
Date: March 11, 1996

four (4) parts washers

Heat Input Capacity
 MMBtu/hr

Potential Throughput
 MMCF/yr

0.59

5.17

Pollutant

	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	11.2	11.2	0.6	94.0	7.3	40.0
Potential Emission in tons/yr	0.029	0.029	0.002	0.243	0.019	0.103

Methodology

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Emission Factors for NOx: uncontrolled = 94

Emission Factors for CO: uncontrolled = 40

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3.

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

**Appendix A: Emission Calculations
LPG-Propane - Commercial Boilers
(Heat input capacity: < .3 MMBtu/hr)**

Company Name: Marine Corporation of America
Address City IN Zip: 980 Hurricane Road, Franklin, Indiana 46131
CP: 081-5398
Pit ID: 081-00041
Reviewer: CarrieAnn Ortolani
Date: March 11, 1996

nineteen (19) unit heaters on backup fuel

Heat Input Capacity Potential Throughput
 kgal/hr kgals/year

0.026	228
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	Pollutant					
	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/kgal	0.4	0.4	0.0001 (0.10S)	14.0	0.5	1.9
Potential Emission in tons/yr	0.046	0.046	0.00001	1.59	0.057	0.216

Methodology

1 gallon of LPG has a heating value of 94,000 Btu

Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1kgal per 1000 gallon x 1 gal per 0.094 MMBtu

Emission Factors are from AP42, Fifth Edition (January 1995), Table 1.5-2 (SCC #1-02-010-02)

Emission (tons/yr) = Throughput (kgals/yr) x Emission Factor (lb/kgal) / 2,000 lb/ton

**Appendix A: Federal Potential Emissions Calculations
VOC and Particulate
From Surface Coating Operations**

Company Name: Marine Corporation of America
Address City IN Zip: 980 Hurricane Road, Franklin, Indiana 46131
CP: 081-5398
Pit ID: 081-00041
Reviewer: CarrieAnn Ortolani
Date: March 11, 1996

Material	Density (lb/gal)	Weight % Volatile (H2O & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Vol (solids)	Gal of Mat (gal/unit)	Maximum (unit/hour)	Flash-off (fraction)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential tons per year	lb VOC /gal solids	Transfer Efficiency
Spray Paint Booth E3																	
Blue Epoxy Paint as applied																	
Low Cure Catalyst	7.51	51.47%	0.0%	51.5%	0.0%	43.15%	0.08203	4.500	1.000	3.87	3.87	1.43	34.24	6.25	5.01	8.96	15%
Blue Epoxy Paint	9.50	37.07%	0.0%	37.1%	0.0%	50.37%	0.27344	4.500	1.000	3.52	3.52	4.33	104.00	18.98	27.39	6.99	15%
Thinner	8.36	100.00%	0.0%	100.0%	0.0%	0.00%	0.08203	4.500	1.000	8.36	8.36	3.09	74.06	13.52	0.00	no solids	15%
Black Epoxy Paint as applied																	
Low Cure Catalyst	7.51	51.47%	0.0%	51.5%	0.0%	43.15%	0.08203	4.500	1.000	3.87	3.87	1.43	34.24	6.25	5.01	8.96	15%
Black Epoxy Paint	9.88	34.82%	0.0%	34.8%	0.0%	51.52%	0.27344	4.500	1.000	3.44	3.44	4.23	101.59	18.54	29.50	6.68	15%
Thinner	8.36	100.00%	0.0%	100.0%	0.0%	0.00%	0.08203	4.500	1.000	8.36	8.36	3.09	74.06	13.52	0.00	no solids	15%
Boothcoating																	
Chemco Peelable Boothcoating	7.77	75.56%	22.0%	53.6%	0.0%	17.00%	0.00030	4.500	1.000	4.16	4.16	0.006	0.137	0.025	0.00	24.48	100%

State Potential Emissions

Add worst case coating to all solvents

8.85	212	38.8	34.5
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Control Technology Emissions (Combustion)				Emission Factors						Emissions					
Type	Number	Capacity MMBtu/hr	Gas usage MMCF/yr	PM lb/MMCF	PM10 lb/MMCF	SO2 lb/MMCF	NOx lb/MMCF	VOC lb/MMCF	CO lb/MMCF	PM tons/yr	PM10 tons/yr	SO2 tons/yr	NOx tons/yr	VOC tons/yr	CO tons/yr
Catalytic			0.0	3.0	3.0	0.6	100.0	5.3	35.0	0.0	0.0	0.0	0.0	0.0	0.0
Thermal			0.0	3.0	3.0	0.6	140.0	2.8	20.0	0.0	0.0	0.0	0.0	0.0	0.0
Total			0.0							0.0	0.0	0.0	0.0	0.0	0.0
										Control Efficiency VOC	Controlled VOC pounds per hour	Controlled VOC pounds per day	Controlled VOC tons/yr	Controlled Particulate tons/yr	
										0.971					

Controlled Emissions due to Surface Coating Operations and Controls

8.85	212	38.8	1.00
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METHODOLOGY

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
 Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
 Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * Flash-off
 Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day) * Flash-off
 Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs) * Flash-off
 Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1 - Weight % Volatiles) * (1-Transfer efficiency) * (8760 hrs/yr) * (1 ton/2000 lbs)
 Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids) * Flash-off
 Total = Worst Coating + Sum of all solvents used

HAP Emission Calculations

Company Name: Marine Corporation of America
Plant Location: 980 Hurricane Road, Franklin, IN 46131
County: Johnson
CP: 081-5398
Pit ID: 081-00041
Permit Reviewer: CarrieAnn Ortolani
Date: March 11, 1996

Material	Density (lb/gal)	Gal of Mat (gal/unit)	Maximum (unit/hour)	Flash-off (fraction)	Weight % MEK	Weight % Toluene	Weight % MIBK	Weight % Ethylbenzene	Weight % Xylenes	Weight % Glycol Ethers	MEK Emissions (tons/yr)	Toluene Emissions (tons/yr)	MIBK Emissions (tons/yr)	Ethylbenzene Emissions (tons/yr)	Xylenes Emissions (tons/yr)	Glycol Ether Emissions (tons/yr)	Total HAP Emissions (tons/yr)
Spray Paint Booth E3																	
Blue Epoxy Paint as applied																	
Low Cure Catalyst	7.51	0.08203	4.500	1.00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.0000	0.00	0.00	0.00	0.00	0.00	0.00
Blue Epoxy Paint	9.50	0.27344	4.500	1.00	0.00%	0.00%	10.00%	5.00%	18.00%	10.00%	0.0000	0.00	5.12	2.56	9.22	5.12	22.0
Thinner	8.36	0.08203	4.500	1.00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.0000	0.00	0.00	0.00	0.00	0.00	0.0
Black Epoxy Paint as applied																	
Low Cure Catalyst	7.51	0.08203	4.500	1.00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.0000	0.00	0.00	0.00	0.00	0.00	0.0
Black Epoxy Paint	9.88	0.27344	4.500	1.00	0.00%	0.00%	10.00%	5.00%	18.00%	10.00%	0.0000	0.00	5.32	2.66	9.58	5.32	22.9
Thinner	8.36	0.08203	4.500	1.00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.0000	0.00	0.00	0.00	0.00	0.00	0.0
Boothcoating																	
Chemco Peelable Boothcoating	7.77	0.00030	4.500	1.00	3.00%	49.00%	0.00%	0.00%	0.00%	0.00%	0.0014	0.02	0.00	0.00	0.00	0.00	0.024

Total State Potential Emissions

TOTALS:	(tons/yr):	0.001	0.023	5.32	2.66	9.58	5.32	22.9
	(lb/hr):	0.0003	0.005	1.22	0.608	2.19	1.22	5.24
	(g/sec):	0.00004	0.001	0.153	0.077	0.276	0.153	0.660

METHODOLOGY

HAPS emission rate (tons/yr) = Density (lb/gal) * Gal of Material (gal/unit) * Maximum (unit/hr) * Weight % HAP * 8760 hrs/yr * 1 ton/2000 lbs

**Appendix A: Emissions Calculations
From Welding Operations**

Company Name: Marine Corporation of America
Address City IN Zip: 980 Hurricane Road, Franklin, IN 46131
CP: 081-5398
Plt ID: 081-00041
Reviewer: CarrieAnn Ortolani
Date: March 11, 1996

Type of Welding	Number of Units	Electrode Type	Maximum Electrode Consumption per Unit (lbs/hr)	Emission Factors (lb pollutant/lb electrode)		Potential Emissions (tons/year)	
				PM	Manganese	PM	Manganese
Metal Inert Gas (MIG)	1.0	Carbon Steel	0.01042	0.0055	0.0005	2.51E-04	2.28E-05
Oxyacetylene	1.0	Carbon Steel	0.00087	0.0055	0.0005	2.10E-05	1.91E-06
Tungsten Inert Gas (TIG)	1.0	Carbon Steel	0.03125	0.0000	0.0000	0.00E+00	0.00E+00
Total Potential Emissions (tons/yr):						2.72E-04	2.47E-05

METHODOLOGY

Emissions (tons/yr) = Number of Units * Maximum Electrode Consumption per Unit * Emission Factor (lb pollutant/lb electrode consumed) * 8760 (hrs/yr) * (1 ton/2000 lbs)
 Emission Factors are from the SARA 313 Reporting Guide.

Type of Cutting	Number of Units	Maximum Plate Size (inches)	Maximum Cutting Speed (in/min)	Emission Factors (lb pollutant/1,000,000 ft cut)					Potential Emissions (tons/yr)				
				PM	Cr	Co	Mn	Ni	PM	Cr	Co	Mn	Ni
Plasma Arc Cutting (PAC)	1.0	1	1	2800.0000	5.600000	0.600000	8.400000	1.400000	6.13E-02	1.23E-04	1.31E-05	1.84E-04	3.07E-05

Emissions (tons/yr) = number of units*plate size *maximum cutting speed (inches/min) *emission factor (lb pollutant/1,000,000 ft cut) * (1ton/2000lbs)*(8760hrs/1yr)*(1ft/12inches)*(60min/1hr)
 Emission Factors are from the SARA 313 Reporting Guide.