

**CONSTRUCTION PERMIT
OFFICE OF AIR MANAGEMENT**

**R and R Custom Woodworking, Inc.
71596 CR 100
Nappanee, Indiana 46550**

is hereby authorized to construct

- (a) One (1) woodworking shop, equipped with various woodworking equipment using a cyclone and baghouse connected in series to control PM emissions, capacity: 56.0 pounds of wood per hour.
- (b) Three (3) spray booths, equipped with high volume low pressure (HVLP) spray guns, known as Booths 1, 2 and 3, using dry filters to control PM overspray emissions, exhausting to stacks SV1, SV2 and SV3, also equipped with air atomization spray guns used for touch up only, capacity: 9.3 wood products per hour each.
- (c) Two (2) diesel fueled internal combustion engines, known as 024, 025, exhausted to SV4 and SV5 respectively, rated at 0.381 and 0.152 million British thermal units per hour respectively.
- (d) One (1) propane boiler, exhausted to H-1, rated at 0.280 million British thermal units per hour.
- (e) Two (2) propane storage tanks, capacity: 1000 gallons each.
- (f) One (1) diesel fuel tank, capacity: 300 gallons total.

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 039-10501-00402	
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 facility used to manufacture wood furniture, 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(l), 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.

Malfunction Condition

7. That pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):
- (a) A record of all malfunctions, including startups or shutdowns of any facility or emission control equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of three (3) years and shall be made available to the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM) or appointed representative upon request.
 - (b) When a malfunction of any facility or emission control equipment occurs which lasts more than one (1) hour, said condition shall be reported to OAM, using the Malfunction Report Forms (2 pages). Notification shall be made by telephone or facsimile, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of said occurrence.
 - (c) Failure to report a malfunction of any emission control equipment shall constitute a violation of 326 IAC 1-6, and any other applicable rules. Information of the scope and expected duration of the malfunction shall be provided, including the items specified in 326 IAC 1-6-2(a)(1) through (6).
 - (d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [326 IAC 1-2-39]

Annual Emission Reporting

8. That pursuant to 326 IAC 2-6 (Emission Reporting), the Permittee must annually submit an emission statement for the source. This statement must be received by April 15 of each year and must comply with the minimum requirements specified in 326 IAC 2-6-4. A copy of this rule is enclosed. The annual statement must be submitted to:

Indiana Department of Environmental Management
Technical Support and Modeling Section, Office of Air Management
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

The annual emission statement covers the twelve (12) consecutive month time period starting December 1 and ending November 30.

Opacity Limitations

9. Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following, unless otherwise stated in this permit:
- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as in 326 IAC 5-1-4.
 - (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor in a six (6) hour period.

Particulate Matter (PM) Limitation

10. Pursuant to 326 IAC 6-3 (Process Operations), the allowable PM emission rate from the woodworking facilities shall not exceed 0.551 pounds per hour when operating at a process weight rate of 100 pounds per hour.

The pounds per hour limitation was calculated with the following equation:

Interpolation and extrapolation of the data for the process weight rate up to 60,000 pounds per hour shall be accomplished by use of the equation:

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

Baghouse Operating Condition

11. That the cyclone connected in series with the baghouse shall be operated at all times when the woodworking process is in operation.
- (a) The permittee shall take readings of the total static pressure drop across the baghouses, at least once per day. Unless operated under conditions for which the Preventive Maintenance Plan specifies otherwise, the pressure drop across the baghouse shall be maintained within the range of one (1) and three (3) inches of water. The Preventive Maintenance Plan for these baghouses shall contain troubleshooting contingency and corrective actions for when the pressure reading is outside of this range for any one reading.
 - (b) The instrument used for determining the pressure shall be subject to approval by IDEM, OAM, and shall be calibrated at least once every six (6) months.

- (c) The gauge employed to take the pressure drop across the baghouses or any part of the facility shall have a scale such that the expected normal reading shall be no less than 20 percent of full scale and be accurate within ± 2 percent of full scale reading. The instrument shall be quality assured and maintained as specified by the vendor.
- (d) An inspection shall be performed each calendar quarter of all the baghouses. Defective bags shall be replaced. A record shall be kept of the results of the inspection and the number of bags replaced.
- (e) In the event that a bag's failure has been observed:
 - (i) The affected compartments will be shut down immediately until the failed units have been replaced.
 - (ii) Based upon the findings of the inspection, any additional corrective actions will be devised within eight (8) hours of discovery and will include a timetable for completion.

Visible Emission Notations

12. That visible emission notations of all exhaust to the atmosphere from the cyclone connected in series to the baghouse shall be performed once per day. A trained employee will record whether emissions are normal or abnormal.
- (a) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, 80 percent of the time the process is in operation, not counting start up or shut down time.
 - (b) In the case of batch or discontinuous operation, readings shall be taken during that part of the operation specified in the facility's specific condition prescribing visible emissions.
 - (c) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal and abnormal visible emissions for that specific process.
 - (d) The Preventive Maintenance Plan for this facility shall contain troubleshooting contingency and corrective actions for when an abnormal emission is observed.

Fugitive Dust Emissions

13. 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)].
14. 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 Booths 1, 2 and/or 3 are in operation.
 - (b) The spray booths shall comply with 326 IAC 6-3-2(c) using the following equation:

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

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

(use this equation if P is greater than 60,000 pounds per hour (30 tons per hour)):

$$E = 55.0P^{0.11} - 40 \quad \text{where: } E = \text{rate of emission in pounds per hour,}$$
$$P = \text{process weight in tons per hour.}$$

- (c) Daily inspections shall be performed to verify the placement, integrity and particulate loading of the filters.
- (d) Additional inspections and preventive measures shall be performed as prescribed in the Preventive Maintenance Plan.

Volatile Organic Compound

15. That pursuant to 326 IAC 2-1-3(i)(8), records of surface coating quantities and organic solvent contents shall be maintained for a minimum period of 36 months and made available upon request of the Office of Air Management (OAM). Any change or modification which may increase potential emissions to 250 tons per year from the equipment covered in this permit shall obtain a PSD permit pursuant to 326 IAC 2-2 before such change may occur.

Volatile Organic Compound (VOC) Limitations

16. That pursuant to 326 IAC 8-2-12 (Wood Furniture and Cabinet coating), the surface coatings applied to wood furniture and/or wood components shall utilize one or more of the following application methods:

Airless Spray Application	Air-Assisted Airless Spray Application
Electrostatic Spray Application	Electrostatic Bell or Disc Application
Heated Airless Spray Application	Roller Coating
Brush or Wipe Application	Dip-and-Drain Application
High-Volume Low-Pressure HVLP	Aerosol Spray Cans

High-volume low-pressure spray is an acceptable alternative application of air-assisted airless spray. High-volume low-pressure (HVLP) spray means technology used to apply coating to a substrate by means of coating application equipment which operates between one-tenth (0.1) and ten (10) pounds per square inch gauge (psig) air pressure measured dynamically at the center of the air cap and at the air horns of the spray system.

Open Burning

17. 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.

Shut Down

18. The source located at 30480 CR 52, RT3 will be shut down prior to the commencement of operations at 71596 CR 100, Nappanee, Indiana 46550.

MALFUNCTION REPORT

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR MANAGEMENT
FAX NUMBER - 317 233-5967**

**This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6
and to qualify for the exemption under 326 IAC 1-6-4.**

THIS FACILITY MEETS THE APPLICABILITY REQUIREMENTS BECAUSE: IT HAS POTENTIAL TO EMIT 25 LBS/HR PARTICULATES ?____, 100 LBS/HR VOC ?____, 100 LBS/HR SULFUR DIOXIDE ?____ OR 2000 LBS/HR OF ANY OTHER POLLUTANT ?____ EMISSIONS FROM MALFUNCTIONING CONTROL EQUIPMENT OR PROCESS EQUIPMENT CAUSED EMISSIONS IN EXCESS OF APPLICABLE LIMITATION _____.

THIS MALFUNCTION RESULTED IN A VIOLATION OF: 326 IAC _____ OR, PERMIT CONDITION # _____ AND/OR PERMIT LIMIT OF _____

THIS INCIDENT MEETS THE DEFINITION OF 'MALFUNCTION' AS LISTED ON REVERSE SIDE ? Y N

THIS MALFUNCTION IS OR WILL BE LONGER THAN THE ONE (1) HOUR REPORTING REQUIREMENT ? Y N

COMPANY: _____ R and R Custom Woodworking, Inc. _____ PHONE NO. _____ 219 - 773 - 5436 _____

LOCATION: (CITY AND COUNTY) _____ Nappanee / Elkhart _____

PERMIT NO. _____ 039-10501 _____ AFS PLANT ID: _____ 039-00402 _____ AFS POINT ID: _____ INSP: _____

CONTROL/PROCESS DEVICE WHICH MALFUNCTIONED AND REASON: _____

DATE/TIME MALFUNCTION STARTED: ____/____/ 19____ _____ AM / PM

ESTIMATED HOURS OF OPERATION WITH MALFUNCTION CONDITION: _____

DATE/TIME CONTROL EQUIPMENT BACK-IN SERVICE ____/____/ 19____ _____ AM/PM

TYPE OF POLLUTANTS EMITTED: TSP, PM-10, SO2, VOC, OTHER: _____

ESTIMATED AMOUNT OF POLLUTANT EMITTED DURING MALFUNCTION: _____

MEASURES TAKEN TO MINIMIZE EMISSIONS: _____

REASONS WHY FACILITY CANNOT BE SHUTDOWN DURING REPAIRS:

CONTINUED OPERATION REQUIRED TO PROVIDE ESSENTIAL* SERVICES: _____

CONTINUED OPERATION NECESSARY TO PREVENT INJURY TO PERSONS: _____

CONTINUED OPERATION NECESSARY TO PREVENT SEVERE DAMAGE TO EQUIPMENT: _____

INTERIM CONTROL MEASURES: (IF APPLICABLE) _____

MALFUNCTION REPORTED BY: _____ TITLE: _____
(SIGNATURE IF FAXED)

MALFUNCTION RECORDED BY: _____ DATE: _____ TIME: _____

Please note - This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

326 IAC 1-6-1 Applicability of rule

Sec. 1. The requirements of this rule (326 IAC 1-6) shall apply to the owner or operator of any facility which has the potential to emit twenty-five (25) pounds per hour of particulates, one hundred (100) pounds per hour of volatile organic compounds or SO₂, or two thousand (2,000) pounds per hour of any other pollutant; or to the owner or operator of any facility with emission control equipment which suffers a malfunction that causes emissions in excess of the applicable limitation.

326 IAC 1-2-39 "Malfunction" definition

Sec. 39. Any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. (Air Pollution Control Board; 326 IAC 1-2-39; filed Mar 10, 1988, 1:20 p.m.: 11 IR 2373)

***Essential services** are interpreted to mean those operations, such as, the providing of electricity by power plants. Continued operation solely for the economic benefit of the owner or operator shall not be sufficient reason why a facility cannot be shutdown during a control equipment shutdown.

If this item is checked on the front, please explain rationale:

Indiana Department of Environmental Management
Office of Air Management

Technical Support Document (TSD) for New Construction and Operation

Source Background and Description

Source Name: R and R Custom Woodworking, Inc.
Source Location: 71596 CR 100, Nappanee, Indiana 46550
County: Elkhart
Construction Permit No.: CP 039-10501-00402
SIC Code: 2511
Permit Reviewer: Paula M. Miano

The Office of Air Management (OAM) has reviewed an application from R and R Custom Woodworking, Inc. relating to the construction and operation of a facility used to manufacture wood furniture, consisting of the following equipment:

- (a) One (1) woodworking shop, equipped with various woodworking equipment using a cyclone and baghouse connected in series to control PM emissions, capacity: 56.0 pounds of wood per hour.
- (b) Three (3) spray booths, equipped with high volume low pressure (HVLP) spray guns, known as Booths 1, 2 and 3, using dry filters to control PM overspray emissions, exhausting to stacks SV1, SV2 and SV3, also equipped with air atomization spray guns used for touch up only, capacity: 9.3 wood products per hour each.
- (c) Two (2) diesel fueled internal combustion engines, known as 024, 025, exhausted to SV4 and SV5 respectively, rated at 0.381 and 0.152 million British thermal units per hour respectively.
- (d) One (1) propane boiler, exhausted to H-1, rated at 0.280 million British thermal units per hour.
- (e) Two (2) propane storage tanks, capacity: 1000 gallons each.
- (f) One (1) diesel fuel tank, capacity: 300 gallons total.

This construction permit will replace the registration CP 039-6184-00402, issued August 14, 1996 for the R and R Custom Woodworking facilities located at 30480 CR 52, RT 3, also in Nappanee, Indiana. The facilities included in this proposed construction permit include all those to be moved from the former location and the new facilities being constructed. The source located at 30480 CR 52, RT 3 will be shut down prior to the operation of the new source located at 71596 CR 100.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
SV1	painting	24.0	2.8	7,155	Ambient
SV2	painting	24.0	3.5	16,565	Ambient
SV3	painting	24.0	3.5	16,565	Ambient
H1	LPG Boiler	25.0	0.58	100	77
SV4	combustion engine 024	8.0	0.3	100	77
SV5	combustion engine 025	8.0	0.3	100	77

Enforcement Issue

There are no enforcement actions pending for this source.

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.

A complete application for the purposes of this review was received on December 22, 1998.

Emissions Calculations

See Appendix A pages 1 through 5 of 5 (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)	6.55	68.4
Particulate Matter (PM ₁₀)	6.55	68.4
Sulfur Dioxide (SO ₂)	0.677	0.677
Volatile Organic Compounds (VOC)	48.1	48.1
Carbon Monoxide (CO)	2.2	2.25

Pollutant	Allowable Emissions (tons/yr)	Potential Emissions (tons/yr)
Nitrogen Oxides (NO _x)	10.5	10.5
Single Hazardous Air Pollutant (HAP)	5.97	5.97
Combination of HAPs	11.8	11.8

- (a) Allowable emissions of particulate matter are determined from the applicability of rule 326 IAC 6-3. 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 (NO_x) 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. Elkhart 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) Elkhart County has been classified as attainment or unclassifiable for the 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 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

Pollutant	Emissions (tons/yr)
PM	0.861
PM ₁₀	0.861
SO ₂	0.677
VOC	48.1
CO	2.25
NO _x	10.5
Single HAP	5.97
Combination HAPs	11.8

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.

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/year.

This is the first air approval issued to this source.

Federal Rule Applicability

- (a) There are no New Source Performance Standards (326 IAC 12) and 40 CFR Part 60 applicable to this facility.
- (b) The three (3) surface coating booths are not subject to the requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs), Subpart JJ, 40 CFR Part 63.800 because the potential HAPs are less than the major source HAPs levels of 10 and 25 tons per year for single and combined HAPs, respectively.

- (c) There are no other National Emission Standards for Hazardous Air Pollutants (NESHAPs) 40 CFR Part 63 applicable to this facility.

State Rule Applicability

326 IAC 2-6 (Emission Reporting)

This source is subject to 326 IAC 2-6 (Emission Reporting), because it is located in Elkhart County and potential VOC emissions exceed ten (10) tons per year.

326 IAC 5-1 (Opacity)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor in a six (6) hour period.

326 IAC 6-3 (Process Operations)

- (a) The spray 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.
- (b) Pursuant to this rule the particulate matter (PM) emissions from the woodworking operation shall be limited to 0.551 pounds per hour. This was determined from the following equation for a process rate of 0.050 tons per hour (100 pounds per hour).

Interpolation and extrapolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} = 0.551 \text{ lbs/hr}$$

Where: E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

Since the total controlled PM emissions from the woodworking operations are 0.015 pounds per hour (0.064 tons per year), this process complies with the rule.

326 IAC 6-4 (Fugitive Dust Emissions)

Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions), visible emissions shall not cross the property line of the source at or near ground level.

326 IAC 8-2-12 (Surface coating emission limitations: wood furniture and cabinet coating)

The surface coating operations are subject to the requirements of 326 IAC 8-2-12 since the coatings are being applied to wood furniture. Pursuant to 326 IAC 8-2-12, the HVLP spray applicators used in the three (3) spray booths for all production work comply with this rule.

Air Toxic Emissions

Indiana presently requests applicants to provide information on emissions of the 188 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 wood furniture manufacturing facility 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 spreadsheet, page 2 of 5 of appendix A, for detailed air toxic calculations.

Conclusion

The construction of this facility used to manufacture wood furniture will be subject to the conditions of the attached proposed **Construction Permit No. CP 039-10501-00402**.

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

**Company Name: R and R Custom Woodworking, Inc.
Address City IN Zip: 71596 CR 100, Nappanee, IN 46550
CP: 039-10501
Plt ID: 039-00402
Reviewer: Paula M. Miano
Date: December 22, 1998**

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)	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
SPRAYBOOTH																
AL-2508	7.38	97.43%	0.0%	97.4%	0.0%	0.50%	0.05200	9.300	7.19	7.19	3.48	83.45	15.23	0.10	1438.07	75%
6501 Sealer	7.62	69.00%	0.0%	69.0%	0.0%	22.00%	0.06240	9.300	5.26	5.26	3.05	73.23	13.36	1.50	23.90	75%
6580 Topcoat	7.78	64.00%	0.0%	64.0%	0.0%	28.00%	0.06340	9.300	4.98	4.98	2.94	70.46	12.86	1.81	17.78	75%
PS-1101 Thinner	7.08	100.00%	0.0%	100.0%	0.0%	0.00%	0.02000	9.300	7.08	7.08	1.32	31.61	5.77	0.00	n/a	100%
State Potential Emissions											10.8	259	47.2	3.41		

Control Technology Emissions (Combustion)															
Type	Number	Capacity MMBtu/hr	Gas usage MMCF/yr	Emission Factors						Emissions					
				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 PM	Controlled VOC pounds per hour	Controlled VOC pounds per day	Controlled VOC tons/yr	Controlled Particulate tons/yr
										0	0.98				

Controlled Emissions due to Surface Coating Operations and Controls

10.8 259 47.2 0.068

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)
 Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)
 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)
 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)
 Total = Worst Coating + Sum of all solvents used

HAP Emission Calculations

Company Name: R and R Custom Woodworking, Inc.
Plant Location: 71596 CR 100, Nappanee, IN 46550
County: Elkhart
Permit Reviewer: Paula M. Miano
CP: 039-10501
Plant ID: 039-00402

Date: December 22, 1998

Material	Density (lb/gal)	Gal of Mat (gal/unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % Formaldehyde	Weight % MIBK	Weight % Methanol	Xylene Emissions (tons/yr)	Toluene Emissions (tons/yr)	Formaldehyde Emissions (tons/yr)	MIBK Emissions (tons/yr)	Methanol Emissions (tons/yr)
AL-2508	7.38	0.05200	9.300	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00
6501 Sealer	7.62	0.06240	9.300	3.00%	10.00%	0.24%	0.00%	0.00%	0.58	1.94	0.05	0.00	0.00
6580 Topcoat	7.78	0.06340	9.300	17.00%	0.00%	0.15%	0.00%	0.00%	3.42	0.00	0.03	0.00	0.00
PS-1101 Thinner	7.08	0.02000	9.300	10.00%	70.00%	0.00%	10.00%	10.00%	0.58	4.04	0.00	0.58	0.58

Total State Potential Emissions

TOTALS:	(tons/yr):	4.574	5.974	0.077	0.577	0.577
	(lb/hr):	1.044	1.364	0.018	0.132	0.132
	(g/sec):	0.132	0.172	0.002	0.017	0.017

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: Emission Calculations
Baghouse Operations**

**Company Name: R and R Custom Woodworking, Inc.
Address City IN Zip: 71596 CR 100, Nappanee, IN 46550
CP: 039-10501
Plt ID: 039-00402
Reviewer: Paula M. Miano
Date: December 22, 1998**

Unit ID	Control Efficiency (%)	Grain Loading per Actual Cubic foot of Outlet Air (grains/cub. ft.)	Gas or Air Flow Rate (acfm.)	Emission Rate before Controls (lb/hr)	Emission Rate before Controls (tons/yr)	Emission Rate after Controls (lb/hr)	Emission Rate after Controls (tons/yr)
D-1	99.9%	0.000149	11500.0	14.7	64.3	0.015	0.064

Methodology

Emission Rate in lbs/hr (after controls) = (grains/cub. ft.) (sq. ft.) ((cub. ft./min.)/sq. ft.) (60 min/hr) (lb/7000 grains)

Emission Rate in tons/yr = (lbs/hr) (8760 hr/yr) (ton/2000 lb)

Emission Rate in lbs/hr (before controls) = Emission Rate (after controls): (lbs/hr)/(1-control efficiency)

Emission Rate in tons/yr = (lbs/hr) (8760 hr/yr) (ton/2000 lb)

Allowable Rate of Emissions

Process Rate (lbs/hr)	Process Weight Rate (tons/hr)	Allowable Emissions (lbs/hr)	Allowable Emissions (tons/yr)
100	0.050	0.551	2.41

Methodology

Allowable Emissions = 4.10(Process Weight Rate)^{0.67}

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

Company Name: R and R Custom Woodworking, Inc.
City, Indiana: Nappanee, Indiana
CP: 039-10501
Plt ID: 039-00402
Reviewer: Paula M. Miano
Date: December 22, 1998

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

Two (2) Engines known as 024 and 025 rated at 0.381 MMBtu/hr and 0.152 MMBtu/hr respectively.

Heat Input Capacity
MMBtu/hr

0.533

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	0.724	0.724	0.677	10.3	0.840	2.22

Methodology

Potential Throughput (hp-hr/yr) = hp * 8760 hr/yr

Emission Factors are from AP42 (Supplement B 10/96), Table 3.3-2

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

Emission (tons/yr) = [Potential Throughput (hp-hr/yr) x Emission Factor (lb/hp-hr)] / (2,000 lb/ton)

**Appendix A: Emission Calculations
LPG-Propane - Commercial Boilers**

**Company Name: R and R Custom Woodworking, Inc.
Address City IN Zip: 71596 CR 100, Nappanee, IN 46550
CP: 039-10501
Plt ID: 039-00402
Reviewer: Paula M. Miano
Date: December 22, 1998**

Heat Input Capacity MMBtu/hr	Potential Throughput kgals/year	SO2 Emission factor = 0.10 x S S = Weight % Sulfur =	<input type="text" value="0.00"/>
<input type="text" value="0.28"/>	<input type="text" value="26.09"/>		

Emission Factor in lb/kgal	Pollutant					
	PM	PM10	SO2	NOx	VOC	CO
	0.4	0.4	0.0 (0.10S)	14.0	0.5	1.9
Potential Emission in tons/yr	0.005	0.005	0.000	0.183	0.007	0.025

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