INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We make Indiana a cleaner, healthier place to live

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Governor
Michael O'Connor
Commissioner

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November 9, 2001

VIA CERTIFIED MAIL

Mr. Kurt Anderson
Royal Coach
1330 Wade Drive
Elkhart, IN 46514

Re: Registered Construction and Operation Status,
CP 039-6699, Plt ID 039-00416

Dear Mr. Anderson:

The application from Royal Coach, received on September 25, 1996, has been reviewed. Based on the data submitted and the provisions in Sections 1 and 2 of 326 IAC 2-1, it has been determined that the following facilities used to manufacture ultra-high line recreational vehicle units, to be located at 1330 Wade Drive, Elkhart, Indiana, is classified as registered:

a) One (1) paint spray booth designated as SV1-1, equipped with one (1) high-volume-low-pressure spray gun, using dry filters to control PM emissions, capable of processing coaches at a rate of 0.016 units per hour,

b) One (1) paint booth designated as GV1-1, using aerosol cans, tubes and brushes to apply coatings, capable of processing coaches at a rate of 0.016 units per hour,

c) One (1) natural gas fired radiant heater, with a heat input capacity of 1.25 MMBtu/hr,

d) Serval pieces of machine equipment, capable of processing wood and metal at a rate of 0.1 lbs/hr, and

e) One (1) MIG welder and one (1) oxyacetylene flame-cutting operation.

The following conditions shall be applicable:

1) 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) 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. High volume low pressure spray is an acceptable alternative application of air-assisted airless spray.

2) Actual emissions of volatile organic compounds (VOC) from coatings applied to the metal surface before controls shall be kept below fifteen (15) pounds per day. Therefore, the requirements of 326 IAC 8-2-9 (Miscellaneous metal coatings operations) will not apply.

3) 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 the actual emissions to 15 pounds per day from coatings applied to the metal surface before controls, shall comply with rule 326 IAC 8-2-9 (Miscellaneous Metal Coating Operations), that the volatile organic compound (VOC) content of coatings applied to the metal surface shall be limited to:

Coatings	Limit (pounds of VOC/gallon of coating less water delivered to the applicator)
Air Dried Coat	3.5

4) Pursuant to 326 IAC 2-1-3(i)(8),

(a) the visible particulate matter (PM) emissions from the woodworking facilities shall not exceed 10% opacity and

(b) that fugitive dust complies with 326 IAC 6-4 (Fugitive Dust Emissions).

(c) daily records of the coatings used and the solvent contents of each shall be kept for a minimum period of 36 months and shall be made available upon request of the Office of Air Management.

Any change or modification which may increase the potential VOC emissions to 25 tons per year or more from the equipment covered in this registration must be approved by the Office of Air Management (OAM) before such change may occur.

Sincerely,

Paul Dubenetzky, Chief
Permits Branch
Office of Air Management

YTY
cc: File -Elkhart County
Elkhart County Health Department
Air Compliance -Greg Wingstrom
Permit Tracking - Janet Mobley
Data Support Section - Nancy Landau
Office of Enforcement

Indiana Department of Environmental Management (IDEM)
Office of Air Management

Technical Support Document (TSD) for Registered Emission Unit/s

Royal Coach
1330 Wade Drive
Elkhart, IN 46514

The Office of Air Management (OAM) has reviewed an application from Royal Coach, relating to the construction and operation of the following facilities used to manufacture ultra-high line recreational vehicle units:

a) One (1) paint spray booth designated as SV1-1, equipped with one (1) high-volume-low-pressure spray gun, using dry filters to control PM emissions, capable of processing coaches at a rate of 0.016 units per hour,

b) One (1) paint booth designated as GV1-1, using aerosol cans, tubes and brushes to apply coatings, capable of processing coaches at a rate of 0.016 units per hour

c) One (1) natural gas fired radiant heater, with a heat input capacity of 1.25 MMBtu/hr,

d) Serval pieces of machine equipment, capable of processing wood and metal at a rate of 0.1 lbs/hr, and

e) One (1) MIG welder and one (1) oxyacetylene flame-cutting operation.

Enforcement Issue

IDEM is aware that the facilities listed above have been constructed and operated prior to receipt of the proper permit. IDEM is reviewing this matter and will take appropriate action. This proposed registration 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:

An application for the purposes of this review was received on September 25, 1996, with additional information received on November 1, 1996.

Total Potential and Allowable Emissions

Pollutant	Allowable Emissions (tons/yr)	Allowable Emissions (lbs/day)	Potential Emissions (tons/yr)	Potential Emissions (lbs/day)
PM	/	/	1.0	5.5
NOx	/	/	0.5	3.0
VOC	/	/	20.3	111.1
CO	/	/	0.1	0.6
HAPs	/	/	18.9	103.6

See attached spreadsheet(s) for detailed calculations.

Since the process rate of the woodworking is so small (less than 0.1 lbs/hr), the emissions from the operation are not calculated, and no allowable emissions are calculated.

The potential emissions are used for the permitting determination.

Allowable emissions (as defined in the Indiana Rule) of VOC are less than 25 tons per year, but greater than 15 pounds per day. Therefore, pursuant to 326 IAC 2-1, a registration is required.

County Attainment Status

Elkhart County has been classified as attainment or unclassifiable for all regulated pollutants.

Federal Rule Applicability

This operation is not covered by 40 CFR 63, Subpart JJ - National Emission Standards for Wood Furniture Manufacturing Operations, because this source is not a major source as defined in 40 CFR Part 63.2.

State Rule Applicability

326 IAC 8 (Volatile Organic Compound Rules)

Based on the actual working schedule (2000 hrs/yr, 24 coaches per year), the VOC emissions from the two (2) paint booths are 3.10 tons/yr, including 2.2 tons/yr VOC from the coatings applied to the wood surface, which is 17.3 lbs/day, and 0.9 tons/yr VOC from the coatings applied to the metal and plastic surface, which is less than 15 lbs/day. The potential VOC emissions are 20.2 tons/year, less than 25 tons per year. Therefore,

1) 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) 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. High volume low pressure spray is an acceptable alternative application of air-assisted airless spray.

2) 326 IAC 8-2-9 (Miscellaneous metal coatings), and 326 IAC 8-1-6 (New Facilities: General Reduction Requirements), for the plastic coating, will not apply.

Air Toxic Emissions

Indiana presently requests applicants to provide information on emissions of 189 hazardous air pollutant as set out in the Clean Air Act Amendments. These pollutants are either carcinogenic or otherwise considered toxic and are commonly used by industries in the state. They are listed as air toxics on the Office of Air Management (OAM) Construction Permit Application Form Y.

The new source will emit levels of air toxics less than those which constitutes a major source according to Section 112 of the 1990 Amendments to Clean Air Act.

Air Toxic Analysis

Pollutant	Stack/Vent	Rate (lb/hr)	Rate @ 8760 hr/yr (ton/yr)
Methyl ethyl ketone	GV SV-1	0.168	0.74
Methyl isobutyl ketone	GV SV-1	0.23	1.00
Methylene chloride	GV	1.86	8.14
Styrene	GV	0.1	0.44
Tetrachloroethylene	GV	0.26	1.14
Toluene	GV SV-1	1.24	5.43
Trichloroethylene	GV	0.39	1.70
Xylenes	GV SV-1	0.065	0.28
TOTAL			18.87

Air Toxic Stack/Vent

Stack /Vent ID	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (^{0}F)
SV-1	26	3	10,000	Ambient
GV-1	20	3	10,000	Ambient

Methodology:
Rate ton/yr = (rate lb/hr)*(8760 hr/yr)*(1 ton/2000 lb)

Conclusion

The construction of the facilities listed above will be subject to the conditions of the attached proposed **Registration No. CP-039-6699, Plt ID No. 039-00416.**

...Coating Operations

Company Name: Royale Coach
Address City IN Zip: Elkhart Indiana
CP: 039-6699
Plt ID: 039-00416
Reviewer: YTY
Date: 11/1/96

	Material	Density (Lb/Gal)	Weight % Volatile (H20& Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Vol (solids)	Gal of Mat (gal/unit)	Maximum (unit/yr)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC tons per year	Potential VOC pounds per day	Particulate Potential ton/yr	lb VOC /gal solids	Transfer Efficiency
Adhesives	3M super 74 Foam	6.05	78.00%	0.0%	78.0%	0.0%	22.00%	0.05000	140.000	4.72	4.72	0.02	0.11	0.00	21.45	100%
	Sikaflex	9.90	5.99%	0.0%	6.0%	0.0%	94.01%	1.00000	140.000	0.59	0.59	0.04	0.23	0.00	0.63	100%
	All Pro Ex Strength	10.85	0.00%	0.0%	0.0%	0.0%	100.00%	1.25000	140.000	0.00	0.00	0.00	0.00	0.00	0.00	100%
	ABS Cement	7.18	73.00%	0.0%	73.0%	0.0%	27.00%	0.13000	140.000	5.24	5.24	0.05	0.26	0.00	19.41	100%
	Spray Rite HT	9.18	80.00%	0.0%	80.0%	0.0%	20.00%	2.50000	140.000	7.34	7.34	1.29	7.04	0.16	36.72	50%
	630 LD Contact Cement	10.85	77.00%	0.0%	77.0%	0.0%	15.00%	15.00000	140.000	1.76	1.76	1.85	10.11	0.00	55.70	100%
	SDI1EC5 HYSOL Super Glue	8.76	99.00%	0.0%	99.0%	0.0%	0.00%	0.25000	140.000	8.67	8.67	0.15	0.83	0.00	ERR	100%
	Titebond Wood Glue	9.10	54.00%	0.0%	54.0%	0.0%	46.00%	1.00000	140.000	4.91	4.91	0.34	1.88	0.00	10.68	100%
Catalysts	TEC Double Duty	11.20	5.00%	0.0%	5.0%	0.0%	95.00%	0.05000	140.000	0.56	0.56	0.00	0.01	0.00	0.59	100%
Cleaner	Epoxy Primer	7.50	85.50%	0.0%	85.5%	0.0%	14.50%	0.35000	140.000	6.41	6.41	0.16	0.86	0.01	44.22	75%
	Precleaner	6.25	100.00%	0.0%	100.0%	0.0%	0.00%	1.50000	140.000	6.25	6.25	0.66	3.60	0.00	ERR	100%
	3M Natural Cleaner	7.50	85.00%	0.0%	85.0%	0.0%	15.00%	0.90000	140.000	6.38	6.38	0.40	2.20	0.00	42.50	100%
	3M Finesss Manne Compound	9.93	31.00%	0.0%	31.0%	0.0%	69.00%	0.50000	140.000	3.08	3.08	0.11	0.59	0.00	4.46	100%
Coatings	Astro Maroon Vinyl-Cote	6.46	42.60%	0.0%	42.6%	0.0%	57.40%	0.05000	140.000	2.75	2.75	0.01	0.05	0.00	4.79	75%
Foam	Expanding foam Sealant	10.33	90.00%	0.0%	90.0%	0.0%	10.00%	0.37000	140.000	9.30	9.30	0.24	1.32	0.00	92.97	100%
Hardeners	Urethane Hardener	8.18	54.57%	0.0%	54.6%	0.0%	45.43%	0.13000	140.000	4.46	4.46	0.04	0.22	0.01	9.83	75%
MISC	Alcohol Denatured	6.78	96.00%	0.0%	96.0%	0.0%	40.00%	0.50000	140.000	6.51	6.51	0.23	1.25	0.00	16.27	75%
Paints	NCT Primer Surface Act	7.70	100.00%	0.0%	100.0%	0.0%	0.00%	0.13000	140.000	7.70	7.70	0.07	0.38	0.00	ERR	50%
	Deltron Basecoat	9.50	45.00%	0.0%	45.0%	0.0%	55.00%	0.63000	140.000	4.28	4.28	0.19	1.03	0.12	7.77	50%
	Broma 10-Min Dry Enamel	8.22	42.00%	0.0%	42.0%	0.0%	58.00%	0.57000	140.000	3.45	3.45	0.14	0.75	0.05	5.95	75%
	Broma 10-Min Dry Enamel	7.76	38.00%	0.0%	38.0%	0.0%	62.00%	0.57000	140.000	2.95	2.95	0.12	0.64	0.05	4.76	75%
	Clear Coat	8.13	51.87%	0.0%	51.9%	0.0%	48.13%	0.50000	140.000	4.22	4.22	0.15	0.81	0.03	8.76	75%
	Fisheye Eliminator	7.21	90.00%	0.0%	90.0%	0.0%	10.00%	0.05000	140.000	6.31	6.31	0.02	0.12	0.00	63.09	50%
	Gloss Black Lacquer	7.43	76.75%	0.0%	76.8%	0.0%	23.25%	0.50000	140.000	5.70	5.70	0.20	1.09	0.03	24.53	50%
	Seymour Zinc Phos Primer	6.43	84.50%	0.0%	84.5%	0.0%	15.20%	0.13000	140.000	5.43	5.43	0.05	0.27	0.00	35.75	75%
	Speed Enamel All Colors	7.50	82.00%	0.0%	82.0%	0.0%	18.00%	0.13000	140.000	6.15	6.15	0.06	0.31	0.00	34.17	75%
	Wiping White	8.21	83.00%	0.0%	83.0%	0.0%	17.00%	1.25000	140.000	6.81	6.81	0.60	3.27	0.00	40.08	100%
	NC Lacq 40	7.56	79.00%	0.0%	79.0%	0.0%	21.00%	5.00000	140.000	5.97	5.97	2.09	11.45	0.14	28.44	75%
Reducer	DT 800 Series	7.00	100.00%	0.0%	100.0%	0.0%	0.00%	0.50000	140.000	7.00	7.00	0.25	1.34	0.00	ERR	75%
	Reducer Reactive	6.90	60.00%	0.0%	60.0%	0.0%	40.00%	0.50000	140.000	4.14	4.14	0.14	0.79	0.02	10.35	75%
Rinsin	Centura Seam Kit	9.43	50.00%	0.0%	50.0%	0.0%	50.00%	1.50000	140.000	4.72	4.72	0.50	2.71	0.00	9.43	100%
	Styene Monomer	7.51	99.80%	0.0%	99.8%	0.0%	0.20%	0.10000	140.000	7.49	7.49	0.05	0.29	0.00	3747.49	100%
Sealant	Construction 2000	8.18	40.00%	0.0%	40.0%	0.0%	60.00%	0.67000	140.000	3.27	3.27	0.15	0.84	0.00	5.45	100%
	Silicone Sealant -all	8.67	95.00%	0.0%	95.0%	0.0%	5.00%	0.25000	140.000	8.24	8.24	0.14	0.79	0.00	164.73	100%
	Famowood Putty	12.51	24.80%	0.0%	24.8%	0.0%	75.20%	0.15000	140.000	3.10	3.10	0.03	0.18	0.00	4.13	100%
Sealer	Silicone Sealant Clear	8.51	5.00%	0.0%	5.0%	0.0%	85.00%	2.50000	140.000	0.43	0.43	0.07	0.41	0.00	0.60	100%
	W0730VS Vinyl Sealer	7.50	81.60%	0.0%	81.6%	0.0%	18.40%	5.00000	140.000	6.12	6.12	2.14	11.74	0.12	33.26	75%
	Bulls Eye 1-2-3 Sealer	11.00	2.00%	0.0%	2.0%	0.0%	98.00%	1.00000	140.000	0.22	0.22	0.02	0.08	0.19	0.22	75%
Solvents	C-33 Cyclo Silicone Spray	11.02	95.00%	0.0%	95.0%	0.0%	5.00%	0.50000	140.000	10.47	10.47	0.37	2.01	0.00	209.38	100%
	XX Lacq Thinner	6.78	100.00%	0.0%	100.0%	0.0%	0.00%	15.00000	140.000	6.78	6.78	7.12 *	39.01	0.00	ERR	100%

State Potential Emissions — **Add worst case coating to all solvents**

20.24 — 110.90 — 0.94

ETHODOLOGY

ounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
ounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
otential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/yr) * (1 ton/2000 lbs)
articulate Potential Tons per Year = (units/yr) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) * *(1 ton/2000 lbs)
ounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)
tal = Worst Coating + Sum of all solvents used

Emission Calculations
Natural Gas Combustion Only
MM Btu/hr 0.3 - < 10
Commercial Boiler

Company Name: Royale Coach
Address City IN Zip: Elkhart Indiana
CP: 039-6699
Reviewer: YTY
Date: 11/1/96

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
1.25	11.0

	Pollutant					
Emission Factor in lb/MMCF	PM 12.0	PM10 12.0	SO2 0.6	NOx 100.0	VOC 5.3	CO 21.0
Potential Emission in tons/yr	0.1	0.1	0.0	0.5	0.0	0.1
Potential Emission in lbs/day	0.4	0.4	0.0	3.0	0.2	0.6

Methodology

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Emission Factors for NOx: uncontrolled = 100, Low Nox Burner = 17, Flue gas recirculation = 36

Emission Factors for CO: uncontrolled = 21, Low NOx Burner = 27, Flue gas recirculation = ND

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, SCC #1-03-006-03

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