

**CONSTRUCTION PERMIT
OFFICE OF AIR MANAGEMENT**

Indiana Department of Environmental Management
100 North Senate Avenue
Indianapolis, Indiana 46204

**ITT Aerospace/Communication Division
1919 West Cook Road
Fort Wayne , Indiana**

is hereby authorized to construct

One (1) paint booth to paint space shuttle flight components with air atomization spray gun of capacity 2.50 parts per hour. The particulate matter emissions shall be controlled by dry filters , exhausting to one stack identified as 2A.

THIS PERMIT IS ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1 and 40 CFR 52.780,
WITH CONDITIONS LISTED ON THE ATTACHED PAGES.

Identification No. CP 003-4449
Plt ID 003-00201

ITT Aerospace/Communications Division
Fort Wayne, Indiana
Reviewer Name: Yogesh Parikh

CP 003-4449
Plt Id 003-00201

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 potential emissions, this 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 Department of Environmental Management Law (IC 13-7), Air Pollution Control Law (IC13-1-1) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.
3. That the equipment shall be installed in accordance with the manufacturer's specifications, and as stated in the application.
4. That pursuant to 326 IAC 2-1-9(b) the Commissioner may revoke this permit if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is discontinued for a period of one (1) year or more.
5. That notwithstanding Condition No. 6, all requirements and conditions of this construction permit shall remain in effect unless modified consistent with procedures established for modifications of construction permits pursuant to 326 IAC 2.
6. That this document shall also become the first-time operation permit pursuant to 326 IAC 2-1-4 when, prior to start of operation, the following requirements are met:
 - d. The attached affidavit shall be submitted to the Office of Air Management (OAM), verifying that the facilities were constructed as proposed in the application. If construction is done in phases; ie construction is not done continuously, one 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.
 - b. Permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Review Section and attach it to this document.

The first-time operation permit will be subject to annual operating permit fees pursuant to 326 IAC 2-1-7.1.

The permittee shall apply for an operation permit renewal at least ninety (90) days prior to the expiration date established in the validation letter.
7. That when the facility is constructed and placed into operation the following operation conditions shall be met:

ITT Aerospace/Communications Division
Fort Wayne, Indiana
Reviewer Name: Yogesh Parikh

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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 potential emissions exceeding those specified in 326 IAC 2-1-1, this 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 13-7), Air Pollution Control Law (IC 13-1-1) and the rules promulgated thereunder.
3. That the equipment shall be operated and maintained in accordance with the manufacturer's specifications.
4. That the usage of volatile organic compounds delivered to the applicator of the spray paint booth shall not exceed 15 pounds per day. Satisfaction of this condition shall render 326 IAC 8 not applicable in this case.
5. 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 paint booth is in operation.
 - (b) The (unit/operation) shall comply with 326 IAC 6-3-2(c) using the following equation:
$$E = 4.10P^{0.67}$$
 where: E = rate of emission in pounds per hour,
P = process weight in tons per hour, if
P is equal to or less than 60,000 lbs/hr (30 tons/hr)
or
$$E = 55.0P^{0.11}$$
 where: E = rate of emission in pounds per hour,
P = process weight in tons per hour, if
P is greater than 60,000 lbs/hr (30 tons/hr).
 - (c) Daily inspections shall be performed to verify the placement, integrity and particulate loading of the filters (or water curtain).
6. Reporting Requirements
That a log of information necessary to document compliance with operation permit condition no.4 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).
 - (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

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within thirty (30) calendar days after the end of the quarter being reported in the format attached. These reports shall include coating, thinner and clean up solvent usage, material safety data sheet (MSDS) and the date of use.

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

Source Name: ITT Aerospace/Communication Division
 Source Location: 1919 West Cook Road, Fort Wayne, Indiana
 County: Allen
 Construction Permit No.: CP-003-4449-00201
 Facility: one (1) paint booth
 Parameter: VOC
 Limit: 15.0 pounds per day

Month: _____ **Year:** _____

Day	VOC Usage (lb)	Day	VOC usage (lb)
1		17	
2		18	
3		19	
4		20	
5		21	
6		22	
7		23	
8		24	
9		25	
10		26	
11		27	
12		28	
13		29	
14		30	
15		31	
16			

9 No deviation occurred in this month.

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

Submitted by: _____
 Title/Position: _____
 Signature: _____
 Date: _____
 Phone: _____

Indiana Department of Environmental Management Office of Air Management

Addendum to the Technical Support Document for New Construction and Operation

Source Name: ITT Aerospace/Communication Division
Source Location: 1919 West Cook Road, Fort Wayne, Indiana
County: Allen
Construction Permit No.: CP-003-4449-00201
Permit Reviewer: Yogesh Parikh

On June 6, 1995, the Office of Air Management (OAM) had a notice published in the Fort Wayne Journal Sentinel Gazette, Fort Wayne, Indiana, stating that ITT/Aerospace Communication Division had applied for a construction permit to construct and operate one (1) paint booth with control. The notice also stated that OAM proposed to issue a permit for this installation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

The public notice ended on July 6, 1995. The company submitted comments on the draft permit in a letter dated June 22, 1995. These comments were addressed in an amendment to the construction permit dated August 22, 1995.

However, there is no evidence in OAM files that a final construction permit was ever signed or issued. To correct this situation, OAM will issue this addendum and final permit. This addendum will cover the corrections made in the amendment that was issued.

The OAM has decided to change the operation condition No.5 and condition No.6.

A) Operation Condition No. 5

The old condition states:

5. That the particulate matter overspray from the surface coating facilities shall be considered in compliance with 326 IAC 6 provided that the overspray is not:
 - a) visibly detectable at the exhaust and
 - b) accumulated on the rooftops or on the ground.

The new condition reads:

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 paint booth is in operation.
- (b) The painting operation of space shuttle flight components shall comply with 326 IAC 6-3-2(c) using the following equation:

$E = 4.10P^{0.67}$ where: E = rate of emission in pounds per hour,
P = process weight in tons per hour, if
P is equal to or less than 60,000 lbs/hr (30 tons/hr)

or

$E = 55.0P^{0.11}$ where: E = rate of emission in pounds per hour,
P = process weight in tons per hour, if
P is greater than 60,000 lbs/hr (30 tons/hr).

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

B) Operation condition No.6

The reporting requirement is added as follows:

Reporting Requirements

That a log of information necessary to document compliance with operation permit condition no.4 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).

- (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 thirty (30) calendar days after the end of the quarter being reported in the format attached. These reports shall include coating, thinner and clean up solvent usage, material safety data sheet (MSDS) and the date of use.

Additionally, the amendment made the following changes to the conditions:

Condition No.4 was changed to:

4. That the usage of volatile organic compounds delivered to spray applicator of the paint booth shall not exceed 15.0 pounds per day. Satisfaction with this condition will render 326 IAC 8 not applicable in this case.

APPENDIX A

Emissions Calculations:

ITT Aerospace/Communications Division
1919 West Cook Road
Fort wayne, Indiana.

General information:

This application is for a construction and operation of a paint coating system utilized by the communication equipment manufacturing operations . This modification to an existing facility includes a spray paint booth. This facility falls under SIC code 3663 and or 3812.The source or facility was constructed in 3/18/89 and is operating without a permit. Therefore, this case will be referred to IDEM Office of Enforcement being it is a violation of the rule 326 IAC 2-1.

The paint booth is capable of coating 2.5 pieces or 12.5 pounds per hour of space shuttle flight parts. The method of application is air atomization with the over spray controlled by dry filters. Emissions of VOC from this operation will escape through one stack which is identified as A2.The actual hours of operations are 4 to 8 hours per month.

Emissions calculations :

Allowable Emissions Summary: All the emissions listed in the following table are in tons per year.

Process or equipment	PM	VOC	NOx	SO ₂	CO
Spray paint booth	34.5	66.3	0.00	0.00	0.00
Total	34.5	66.3	0.00	0.00	0.00

Allowable emissions (as defined in the Indiana Rule) of volatile organic compounds and particulate matter are greater than 25 tons per year. Therefore, the facility or source in question requires a construction permit pursuant to 326 IAC 2-1.

VOC Emissions after control:

Since there are no controls provided, the VOC emissions after controls will remain the same as potential emissions.

The actual VOC emissions from the paint booth is based on the hours of operations which are calculated as follows:

Hours of operation = 8 hours/month x 12 months/yr = 96.0 hrs/yr

Actual VOC emissions = $\frac{96 \text{ hrs/yr}}{8,760 \text{ hrs/yr}} \times 66.3 \text{ tons/yr} = 0.726 \text{ tons/year} = 3.98 \text{ lb/day}$.

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PM Emissions after controls from the paint booth:

The minimum control efficiency of the dry filters is considered here which is 97.0%.

$$\begin{aligned} \text{PM emissions after control} &= \text{Emissions of PM before the control} \times (1 - \% \text{ control efficiency}) \\ &= 34.5 \text{ tons/year} \times (1 - 0.97) \\ &= 34.5 \times 0.03 = 1.03 \text{ tons/year.} \end{aligned}$$

The actual PM emissions are calculated as follows.

Hours of operation = 96 hrs/yr

$$\text{Actual PM emissions} = \frac{96 \text{ hrs/yr}}{8,760 \text{ hrs/yr}} \times 1.03 \text{ tons/yr} = 0.011 \text{ tons/year.}$$

Summary of **Emissions after control** (Based on 97.0 per cent control efficiency of the dry filters and actual hours of operation per year at rated capacity:)

Process or equipment	PM	VOC	NOx	SO ₂	CO
Paint booth	0.011	0.73	0.00	0.00	0.00
Total	0.011	0.73	0.00	0.00	0.00

Compliance Calculations:

The rule 326 IAC 8-1 which restricts the source to a level below 15 pounds per day before add on controls of VOC emissions. The applicant has agreed to take a limit of VOC emissions to less than 15 pounds per day. Therefore, the proposed paint booth will be in compliance with the applicable rule 326 IAC 8-1.

Rule Applicability:

The spray paint booth is not subject to the rule 326 IAC 8-2-9, because the applicant has accepted the limit of VOC emissions of 15 pounds per day before add on controls.(Refer to the letter from David J Cooper, of ITT Aerospace/ Communication Division.

Source Status:

This source is located in attainment area of the Allen county. Since the emission rates do not exceed 250 tons per year, PSD rules does not apply in this case.

Federal Rule Applicability:

There are no New source Performance Standards (NSPS) applicable to this facility.

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Air Toxic Analysis:

The following table is derived from the MSDS sheet considering the worst case coating used in the spray booth. The worst case coating are Aeroglaze 306, Aeroglaze Z 307, Dow corning NSB69-82 and Aeroglaze A276. These compounds are the worst case having the highest emission rate and therefore they are considered for calculating toxic emissions. The percentage by weight of all air toxics or HAP present in this coating are listed on MSDS sheet. The tons per year of air toxics is then calculated using the total VOC emission from this coatings and then multiplied by the percentage of concentration of HAP present in this coating.

(Tons / year = % by weight of air toxics from MSDS x Total VOC emission of that compound)

Chemical Name	Aeroglaze Z 306	Aeroglaze Z 307	Dow corning NSB69-82	Aeroglaze A 276	worst case HAP
Xylene	24.75	16.55	0.00	15.07	24.75
Toluene	14.94	13.24	12.42	6.03	14.94
MIBK	11.54	9.93	0.00	3.01	11.54
Ethylbenzene	5.80	6.62	0.00	6.02	6.62
2,4 - Toluene Disocyanate	0.00	0.66	0.00	0.00	0.66
Total VOC	66.27	66.19	62.12	60.29	58.51

The worst case coating appears to be Aeroglaze Z306 which has the VOC emissions of 66.27 tons per year and the air toxics are 58.51 tons per year which is equivalent to 88.29 per cent of VOC from these compounds.

Since the individual air toxic emission exceeds 10 tons per year and a combined total of all toxics exceed 25 tons per year this new source is a major source for air toxic emissions.