

Via Certified Mail 7003 0500 0003 5373 5629

September 24, 2004

Mr. Brian Roberts  
Tri-Industries, Inc.  
333 South 3<sup>rd</sup> Street  
Terre Haute, Indiana 47807

Re: Response to Review Request No. 167-18497  
Permit Status Evaluation  
Plant ID: 167-00099

Dear Mr. Roberts,

Tri-Industries, Inc., located at 333 South 3<sup>rd</sup> Street, submitted a review request on December 9, 2003. The letter was submitted to determine if Tri-Industries, Inc. requires an air pollution permit for operations consisting of TIG and MIG welding operations at a new facility located at 1116 College Avenue. Welding operations at the new facility consist of 5 TIG welding stations and 4 MIG welding stations. The maximum consumption rate of electrodes is 0.656 pounds per hour each for both TIG and MIG welding operations. Currently Tri-Industries, Inc. is operating under Permit by Rule (167-00099, issued September 30, 2003).

Vigo County Air Pollution Control believes the addition of these welding stations would not be subject to any specific modification of your existing Permit by Rule status. Even after the addition of these stations, the source's actual emissions are limited to less than twenty percent (20%) of any threshold regulated air pollutants or hazardous air pollutants for every twelve (12) month period for a major source. This equipment addition would qualify for this status specified under 326 IAC 2-10-3.1.

If you have any further questions or comments contact Scott Sines at (812) 462-3433, ext 12.

Sincerely,

Rob Harmon  
Chief Engineer  
Vigo County Air Pollution Control

sbs

cc: Mindy Hahn – IDEM-OAQ, Permit Branch  
Winter Bottum – IDEM-OAQ

File under review request 167-18497-00099

**Appendix A: Emissions Calculations  
Welding and Thermal Cutting**

**Company Name:** Tri Industries  
**Address City IN Zip:** 333 South 3rd Street, Terre Haute, IN 47807  
**Permit Number:** Permit By Rule  
**Pit ID:** 167-00099  
**Reviewer:** Scott Sines  
**Date:** 16-Sep-04

PROCESS	Number of Stations	Max. electrode consumption per station (lbs/hr)		EMISSION FACTORS* (lb pollutant/lb electrode)				EMISSIONS (lbs/hr)				HAPS (lbs/hr)
				PM = PM10	Mn	Ni	Cr	PM = PM10	Mn	Ni	Cr	
<b>WELDING</b>												
Submerged Arc				0.036	0.011			0.000	0.000	0.000	0	0.000
Metal Inert Gas (MIG)(carbon steel)	4	0.656		0.0055	0.0005			0.014	0.001	0.000	0	0.001
Stick (E7018 electrode)				0.0211	0.0009			0.000	0.000	0.000	0	0.000
Tungsten Inert Gas (TIG)(carbon steel)	5	0.656		0.0055	0.0005			0.018	0.002	0.000	0	0.002
Oxyacetylene(carbon steel)				0.0055	0.0005			0.000	0.000	0.000	0	0.000
FLAME CUTTING	Number of Stations	Max. Metal Thickness Cut (in.)	Max. Metal Cutting Rate (in./minute)	EMISSION FACTORS (lb pollutant/1,000 inches cut, 1" thick)**				EMISSIONS (lbs/hr)				HAPS (lbs/hr)
				PM = PM10	Mn	Ni	Cr	PM = PM10	Mn	Ni	Cr	
Oxyacetylene				0.1622	0.0005	0.0001	0.0003	0.000	0.000	0.000	0.000	0.000
Oxymethane				0.0815	0.0002		0.0002	0.000	0.000	0.000	0.000	0.000
Plasma**				0.0039				0.000	0.000	0.000	0.000	0.000
<b>EMISSION TOTALS</b>												
Potential Emissions lbs/hr								0.03				0.00
Potential Emissions lbs/day								0.78				0.07
Potential Emissions tons/year								0.14				0.01

**METHODOLOGY**

\*Emission Factors are default values for carbon steel unless a specific electrode type is noted in the Process column.

\*\*Emission factor for plasma cutting from American Welding Society (AWS). Trials reported for wet cutting of 8 mm thick mild steel with 3.5 m/min cutting speed (at 0.2 g/min emitted). Therefore, the emission factor for plasma cutting is for 8 mm thick rather than 1 inch, and the maximum metal thickness is not used in calculating the emissions.

Using AWS average values: (0.25 g/min)/(3.6 m/min) x (0.0022 lb/g)/(39.37 in./m) x (1,000 in.) = 0.0039 lb/1,000 in. cut, 8 mm thick

Plasma cutting emissions, lb/hr: (# of stations)(max. cutting rate, in./min.)(60 min./hr.)(emission factor, lb. pollutant/1,000 in. cut, 8 mm thick)

Cutting emissions, lb/hr: (# of stations)(max. metal thickness, in.)(max. cutting rate, in./min.)(60 min./hr.)(emission factor, lb. pollutant/1,000 in. cut, 1" t

Welding emissions, lb/hr: (# of stations)(max. lbs of electrode used/hr/station)(emission factor, lb. pollutant/lb. of electrode used)

Emissions, lbs/day = emissions, lbs/hr x 24 hrs/day

Emissions, tons/yr = emissions, lb/hr x 8,760 hrs/year x 1 ton/2,000 lb

welding.xls (11/99)

Welding and other flame cutting emission factors are from an internal training session document, "Welding and Flame Cutting". See Rebecca Mason if you need a copy.

Refer to AP-42, Chapter 12.19 for additional emission factors for welding.