



west virginia department of environmental protection

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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.: R13-2259C  
Plant ID No.: 095-00017  
Applicant: Aleris Recycling, Inc.  
Facility Name: Friendly Operation  
Location: Tyler County  
NAICS Code: 331314  
Application Type: Class II Administrative Update  
Received Date: November 10, 2014  
Engineer Assigned: Steven R. Pursley, PE  
Fee Amount: \$300.00  
Date Received: December 1, 2014  
Complete Date: December 1, 2014  
Due Date: January 30, 2015  
Applicant Ad Date: November 12, 2014  
Newspaper: *Tyler Star News*  
UTM's: Easting: 491.613 km Northing: 4,369.314 km Zone: 17  
Description: Replace a baghouse, add a baghouse, remove and rename some equipment and increase the permitted heat input of the furnace to it's MDHI.

DESCRIPTION OF CHANGE

The following changes were proposed for the facility:

- \* Surge Bin B-03 is being eliminated.
- \* The furnace baghouse previously identified as BH-1 will be referred to as Furnace BH. Old Baghouse BH-4A will become BH-1. Baghouse BH-4B will become BH-2. Baghouse BH-5 will become BH-3 and Baghouse BH-6 will become Process BH.
- \* The original Baghouse BH-3 is no longer in service and has been removed.

- \* Original BH-5 will be replaced and renamed BH-3 (as mentioned above) and a new Baghouse BH-4 will be added.
- \* Increase the permitted heat input of the furnace (RF-1) to 12 mmbtu/hr which is the design heat input. The particulate matter emission rate will be changed to reflect the results of stack testing performed in 2003.
- \* The furnaces hourly production limit of 14,800 pounds will be changed to a daily limit of 355, 200 pounds (14,800 lbs/hr x 24 hours/day) to account for small variations in the hourly process weight rate.

**ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER**

The only change in emissions due to the above described modifications is an increase in rotary furnace RF-1 emissions. R13-2259B limits emissions from the furnace to the following:

Pollutant	Maximum Emission Rate	
	lb/hour	TPY
Particulate Matter (PM)	0.08	0.33
Oxides of Nitrogen (NO <sub>x</sub> )	1.00	4.38
Sulfur Dioxide (SO <sub>2</sub> )	0.10	0.03
VOCs	0.10	0.24
Carbon Monoxide (CO)	0.84	3.68
Hydrochloric Acid (HCl)	0.05	0.21

Emissions in the new permit will be based on AP-42 with the following exceptions:

- \* PM was based on a 2003 stack test.
- \* R13-2259B rounded up the SO<sub>2</sub> and VOC hourly emissions to 0.10 pounds per hour at the applicants request (annual emissions remained based on AP-42). This request was carried over to the new permit.
- \* HCl emissions are unchanged from R13-2259B. They are based on a controlled outlet concentration.

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Emissions from the rotary furnace will be limited to the following in the new permit:

Pollutant	Maximum Emission Rate	
	lb/hour	TPY
Particulate Matter (PM)	0.23	1.01
Oxides of Nitrogen (NO <sub>x</sub> )	1.20	5.26
Sulfur Dioxide (SO <sub>2</sub> )	0.10	0.03
VOCs	0.10	0.29
Carbon Monoxide (CO)	1.01	4.42
Hydrochloric Acid (HCl)	0.05	0.21

Therefore, the total increase in emissions will be as follows:

Pollutant	Maximum Emission Rate	
	lb/hour	TPY
Particulate Matter (PM)	0.15	0.68
Oxides of Nitrogen (NO <sub>x</sub> )	0.20	0.88
VOCs	--	0.05
Carbon Monoxide (CO)	0.17	0.74

### REGULATORY APPLICABILITY

The changes proposed by the applicant are subject to the following state and federal rules.

#### STATE RULES

45CSR7 TO PREVENT AND CONTROL PARTICULATE MATTER AIR POLLUTION FROM MANUFACTURING PROCESSES AND ASSOCIATED OPERATIONS

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The facility is subject to the requirements of 45CSR7 because it meets the definition of "Manufacturing Process" found in subsection 45CSR7.2.19. The allowable particulate matter (PM) stack emission rate for the furnace, identified as a Type "b" source operation, per 45CSR7, Section 4.1, is 12.88 lbs/hr based on a process weight rate of 14,800 lbs per hour. Particulate emissions from the furnace are expected to be 0.23 lbs/hr. Therefore, the furnace should meet 45CSR7 Section 4.1. 45CSR7 Section 4.2 limits the allowable stack gas concentration of hydrochloric acid mist from the furnace to 210 milligrams per dry cubic meter. Stack testing performed in December of 1999 indicated that HCl concentrations were less than 1 mg/dcm.

**45CSR10 TO PREVENT AND CONTROL AIR POLLUTION FROM THE EMISSION OF SULFUR OXIDES.**

45CSR10, Section 4.1 prohibits the emission into the open air of an in-stack sulfur dioxide concentration exceeding 2,000 parts per million by volume. Since the furnace will be fired with pipeline quality natural gas using pure oxygen, the facility should have no problem meeting this limit.

**45CSR13 PERMITS FOR CONSTRUCTION, MODIFICATION, RELOCATION AND OPERATION OF STATIONARY SOURCES OF AIR POLLUTANTS, NOTIFICATION REQUIREMENTS, ADMINISTRATIVE UPDATES, TEMPORARY PERMITS, GENERAL PERMITS, AND PROCEDURES FOR EVALUATION**

Aleris wishes to make several substantive changes to its existing permit. Since these changes do not result in an increase of emissions of more than 6 pounds per hour and 10 tons per year, the changes can be made as a Class II Administrative Update. As required under §45-13-8.3 ("Notice Level A"), Aleris placed a Class I legal advertisement in a "newspaper of general circulation in the area where the source is . . . located." The ad ran on November 12, 2014 in the *Tyler Star News* and the affidavit of publication for this legal advertisement was submitted on November 17, 2014.

## FEDERAL RULES

40 CFR 63 Subpart RRR

National Emissions Standards for Hazardous Air Pollutants  
for Secondary Aluminum Production

The modified facility will continue to be subject to 40 CFR 63 Subpart RRR. 40 CFR §63.1500(c) subjects the rotary furnace to the requirements of subpart RRR pertaining to dioxin and furan emissions and associated operating, monitoring, reporting and record keeping requirements.

40 CFR §63.1505(i)(3) limits Dioxin/Furan TEQ emissions from the rotary furnace to 15 micrograms per Megagram (0.00021 grains per ton) of feed/charge. The feed rate of the rotary furnace at Aleris is 14,800 pounds per hour. This correlates to a dioxin/furan TEQ emission limit of 0.001554 grains per hour (0.001945 pounds per year). Nothing in this administrative update changes this rule applicability.

## MONITORING OF OPERATIONS

No additional monitoring above that already required by R13-2259B is necessary.

## CHANGES TO PERMIT R13-2259B

The following changes were made to R13-2259B:

- \* The permit was put into a more recent boilerplate (the last boilerplate that was used before switching over to the "Title V type" permits).
- \* Conditions A.1, A.2 and A.6 were changed to reflect the new baghouse configuration and nomenclature.
- \* The emission limits in Condition A.3 were updated to reflect the furnaces MDHI and stack tests performed subsequent to the issuance of R13-2259B.
- \* The production rate in Condition A.4 was changed from an hourly limit to a daily limit.
- \* Condition A.7 was changed to correct the screen descriptions (the descriptions for Screens S-01 and S-02 were transposed in R13-2259B) and Surge Bin B-03 was deleted.
- \* Condition A.14 was changed to reflect the new baghouse nomenclature and specs.

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- \* Condition A.18 was changed to reflect the new baghouse nomenclature.
- \* Condition B.7 was changed to update the USEPA address.

### RECOMMENDATION TO DIRECTOR

Information supplied in the application indicates that compliance with all applicable regulations will be achieved. Therefore it is the recommendation of the writer that permit R13-2259C for the above described changes to an aluminum recycling facility near Friendly, Tyler County, be granted to Aleris Recycling, Inc.



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Steven R. Pursley, PE  
Engineer

2-5-15

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February 5, 2015

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