

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Self Initiated Inspection

N595727016

FACILITY: Aleris Recycling, Inc.		SRN / ID: N5957
LOCATION: 267 N. Fillmore Rd, COLDWATER		DISTRICT: Kalamazoo
CITY: COLDWATER		COUNTY: BRANCH
CONTACT: Patrick Houle , HSE Manager		ACTIVITY DATE: 08/28/2014
STAFF: Rex Lane	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Self Initiated Inspection		
RESOLVED COMPLAINTS:		

Facility Description:

Aleris Recycling, Inc. (N5957) consists of two secondary aluminum plants, Aleris Specification Alloys, Inc. located at 368 Garfield Avenue, Coldwater, MI and Aleris Recycling, Inc. located at 267 N. Fillmore Road, Coldwater, MI. These plants constitute a single stationary source that has the potential to emit nitrogen oxides, particulate matter less than 10 microns (PM10) and hazardous air pollutants above respective major source threshold levels and is currently permitted under Renewable Operating Permit (ROP) No. MI-ROP-N5957-2012c. The source is also subject to Prevention of Significant Deterioration (PSD) regulations per 40 CFR Part 52.21 for particulate matter.

The source also operates certain process equipment that is subject to major source requirements of the Secondary Aluminum Production NESHAP, 40 CFR Part 63, Subpart RRR, as follows:

Aleris Specification Alloys (aka North Plant – ROP Section 1):

EUALDRYER3-S1 – 15,000 pound/hour aluminum chip dryer
 EUALSHREDDER-S1 – 25,000 pound/hour aluminum crusher/shredder
 EUALFURN1-S1 – 18,000 pound/hour reverberatory melting furnace
 EUALFURN7-S1 – 9,000 pound/hour reverberatory melting furnace
 EUALFURN8-S1 – 8,000 pound/hour reverberatory melting furnace

Aleris Recycling (aka South Plant – ROP Section 2):

EUIMDRYER-S2 – 20,000 pound/hour aluminum scrap dryer
 EUIMREVERBFURN-S2 – 15,000 pound/hour reverberatory melting furnace
 EUIMROTFURN1-S2 – 21,000 pound/hour rotary melting furnace
 EUIMROTFURN2-S2 – 21,000 pound/hour rotary melting furnace

Compliance Evaluation:

On August 28, 2014, staff (Rex Lane) conducted an unannounced air quality inspection at Aleris Specification Alloys and Aleris Recycling to determine compliance with 40 CFR Part 63, Subpart RRR, MI-ROP-N5957-2012c and Air Pollution Control Rules. Staff made initial contact with Mr. Patrick Houle, HSE Manager for both plants and provided him with staff credentials and a copy of MDEQ's inspection brochure. Additional Aleris personnel involved during either the inspection or post-inspection discussion were Mr. Kerry Strange, South Plant

Manager; Mr. Scott Pennington, South Plant Operations Manager; Mr. Gregory Hall, North Plant Manager; Mr. Brady Myers, Regional HSE Manager; Ms. Janine Grossheim, Quality Manager and maintenance personnel for both the North and South plants. Staff's visitor/contractor training pass was issued by Aleris on September 11, 2013 and is valid for one year. Required PPE includes foam lined safety glasses, hearing protection, hard hat; long sleeve shirt and all jewelry must be removed or taped over. During the inspection, the following processes were observed:

Aleris Specification Alloys:

EUALDRYER3-S1:

Process emissions from the chip dryer are routed to an afterburner, cyclone and 43,000 cfm baghouse (Torit # 2). Dryer drum seals are controlled by a 34,000 cfm baghouse (Torit # 3) that also control EUALSHREDDER-S1. Emission test to determine compliance with ROP and NESHAP emission limitations was completed on 7/9/13. Process was taken down earlier in the day for weekly preventative maintenance (PM) and staff observed that the control bypass cap was down. Maintenance was removing built up material from inside the thermal oxidizer. During PM, the chip dryer drum was rotating without feed and being maintained at around 500 degrees F to prevent the drum shell from warping. The baghouse inlet temperature was 81 degrees F and the differential pressure was 5.0". The current bag leak detection (BLD) reading was 0.02% with a BLD set point of 4% with an alarm delay of 22 seconds. On a monthly basis, the facility performs a BLD response test, electronic drift test and probe cleaning on all control equipment equipped with BLD equipment. Facility recently installed a new feed charge scale which was calibrated on 8/14/14.

Facility certified in their most recent semi-annual NESHAP excess emissions/summary report that only unpainted aluminum chips are used as feedstock in the chip dryer. Staff reviewed records that indicate compliance with 12-month rolling time period emission and material throughput limitations. Facility is also tracking dryer malfunction events where the permittee may vent emissions through control bypass not to exceed 80 hours per year (current value – 0.1 hours).

EUALSHREDDER-S1:

Process emissions from the crusher/shredder are routed to a 34,000 cfm baghouse (Torit # 3) equipped with a BLD system. Emission test to determine compliance with ROP and NESHAP emission limitations was completed on 7/9/13. Feed/charge for shredder is weighed on process scale # 9 which was last calibrated on 8/14/14. Process was in operation at the time of the inspection and no visible emissions were observed from the baghouse stack. The baghouse inlet temperature was 84 degrees F and the differential pressure was 5.6". The current bag leak detection (BLD) reading was 0.34% with a BLD set point of 31% with an alarm delay of 45 seconds. Staff reviewed records that indicate compliance with 12-month rolling time period emission and material throughput limitations.

EUALDROSS-S1:

Process emissions from dross material handling and load out are controlled by a 50,000 cfm baghouse (Torit # 1). Process was not in operation, however the baghouse was running. No visible emissions were observed from the baghouse stack and the differential pressure reading was 0.8". Staff reviewed the weekly maintenance logs for the week of August 4th and

18th which indicate that a non-certified visible emissions check and pressure drop check is done every four hours.

EUALCRUCIBLES-S1:

Ten natural gas-fired holding crucibles used to transport molten aluminum off-site. Four crucibles were being fired during the inspection. Staff reviewed records that track monthly gas usage and records that show compliance with the 12-month rolling time period NOX emission limitations.

FGALFURN1/2/7/8-S1:

Flexible group consists of three reverberatory secondary aluminum melt furnaces (EUALFURN1, EUALFURN7 and EUALFURN8) and a holding furnace EUALFURN2. Process emissions from furnaces EUALFURN1 and EUALFURN2 vent to a lime injected 60,000 cfm baghouse # 2 (North; stack height 95') equipped with a BLD system. Process emissions from EUALFURN7 and EUALFURN8 vent to a lime injected 65,000 cfm baghouse #1 (South; stack height 61.3') equipped with a BLD system.

Emission testing was conducted on all four furnaces and their respective hearth flues (i.e. SV ID) between September 11th and 13th, 2013 for compliance with ROP and NESHAP emission limitations. SVALFURN7 and SVALFURN8 test results for PM10 did not show compliance with their respective pound/ton of feed charge emission limits (Condition I.51 and I.63). The facility has entered into AQD administrative Consent Order No. 35-2014 to address these emission exceedances. Several other parameters tested between 92 – 97% of their respective emission limits including HCL (I.1) and PM10 (I.9) for EUALFURN1; PM10 (I.37) for SVALFURN1; and HCL (I.57) for SVALFURN8. Alliance Source Testing was on-site during the inspection and conducting an engineering test on the reverberatory furnaces.

EUALFURN7 and EUALFURN8 were processing 356 alloy feed material during the inspection. EUALFURN1 was charged but in idle mode during the inspection due to the charge well pump going down. NESHAP labels for all reverberatory furnaces were in good shape and reflected the most recent performance test. The gross scale pad was recently replaced and last calibrated on 8/14/14. The scales on the North plant front end loaders were last calibrated on 7/23/14.

For baghouse #1, the current bag leak detection (BLD) reading was 0.91% with a BLD set point of 6% with an alarm delay of 34 seconds. The 3-hour average baghouse inlet temperature was 105 degrees F and the lime feed setting was 3.75 which comply with operating conditions established during the most recent performance test. No visible emissions were noted from the stack during a brief observation. For baghouse #2, the current bag leak detection (BLD) reading was 0.14% with a BLD set point of 1% with an alarm delay of 149 seconds. The 3-hour average baghouse inlet temperature was 98 degrees F and the lime feed setting was 3.0 which comply with operating conditions established during the most recent performance test. Staff observed the lime sight glass in the lime silo for each baghouse and observed free flowing conditions. The differential pressure readings for baghouse # 1 and # 2 were 10.5" and 10.0" of water which appears to be unusually high based on staff experience. Staff recommended during the post-inspection meeting that maintenance staff inspect each baghouse to determine the cause of the high differential pressure readings (e.g. malfunctioning magnehelic gauge, blocked pressure lines, blinded bags, etc.). Per additional

information submitted by the facility on 9/8/14, the last semi-annual black light test was conducted on baghouse # 1 and # 2 on 5/23/14 and 5/11/14. A permeability test was also done on the filter media in baghouse # 2 showed the bags to be in good condition.

The chlorine room which is in between baghouse # 1 and # 2 is used to store the 2,000 pound liquid chlorine cylinders and evaporator system that is used to supply chlorine gas to EUALFURN1-S1, EUALFURN7-S1 and EUALFURN8-S1 for fluxing and demagging. Chlorine cylinders are weighed continuously to keep track of chlorine usage in each furnace. The four scales were last calibrated on 8/14/14. Scale # 1 and # 2 is used for EUALFURN1-S1. Scale # 3 is used for EUALFURN7-S1. Scale # 4 is used for EUALFURN8-S1. There are three evaporators that are designated to a specific furnace. Evaporator # 1 serves EUALFURN1-S1, evaporator # 2 serves EUALFURN7-S1 and evaporator # 3 serves EUALFURN8-S1.

Facility certified in their most recent semi-annual NESHAP excess emissions/summary report dated 8/28/14 that the molten metal level was maintained above the archway between the charge well and furnace hearth during reactive fluxing and that only clean charge was processed in the Group 2 furnace (EUALFURN2-S2). ACGIH annual capture and collection system inspection records for EUALFURN1-S1 and EUALFURN2-S1 were reviewed briefly on-site. ACGIH inspection records for EUALFURN7-S1, EUALFURN8-S1 and baghouse # 1 were submitted to staff on 9/8/14 and 9/12/14.

Staff reviewed records that indicate compliance with 12-month rolling time period emission and material throughput limitations. However, the PM10 12-month rolling time period emissions from SVALFURN7 and SUALFURN8 used the emission limitation under condition I.51 and I.63 rather than the higher tested value from the September 2013 performance test. It appears that if the tested value were used for SVALFURN7 along with its material throughput, the 12-month rolling time period limit for PM10 would be exceeded. AQD Consent Order No. 35-2014 contains a compliance schedule for the North Plant to submit a Permit to Install (PTI) application not later than 12/31/15 to correct these PM10 emission exceedances so a violation notice will not be issued at this time.

FGALBLDG-S1:

Flexible group includes all equipment at the facility, including equipment covered by other permits, grandfathered and exempt equipment. The most recent OM&M plan on file for the North plant was submitted on 12/2/13. The group 1 and 2 furnace labels were posted and checked during the inspection. Feed/charge scales and front end loader scale arms have been calibrated within the past six months. The last NESHAP semi-annual excess emission/summary report was submitted to the district office on 8/28/14. Annual ACGIH inspection records for the capture and collection systems are current.

FGALFURN7/8-S1:

Flexible group description allows aluminum scrap charged to EUALFURN7 and EUALFURN8 to contain beryllium up to 5% by weight. According to facility personnel, these furnaces have never charged scrap with any beryllium content. Because more than 18 months have elapsed since PTI No. 33-08A was issued (7/2/08) and subsequently rolled into the ROP, the permit authorization is technically null and void. Therefore, an ROP minor modification application should be filed to remove this flexible group table from the ROP.

FGCOLDCLEANER-S1:

Flexible group is for new cold cleaners placed into operation after 7/1/79. North plant has one cold cleaner located in the maintenance area. The lid was closed and was posted with an MDEQ operational label sticker. The emission unit is maintained by Safety Kleen and uses a 100% light petroleum distillate solvent. Staff provided the facility with a replacement sticker.

FGALRULE290-S1:

Flexible group is any emission unit that emits air contaminants and is exempt from the requirements of Rule 201 pursuant to Rules 278 and 290. Staff reviewed fugitive particulate matter emission records for EUALROAD-S1 for previous 12-months which indicate compliance with 1000 pound/month emission limitation.

FGCAM UNITS-S1:

Flexible group consists of emission units that use a control device to achieve compliance with a federally enforceable emission limitation or standard for particulate matter. The permittee operates and maintains a BLD system as specified in their OM&M plan for the baghouses associated with EUALDRYER3-S1, EUALFURN1/2/7/8. The BLD system runs a daily zero and span calibration. Any calibration errors will trigger the BLD system to alarm and send an email to management who in turn notify maintenance staff to evaluate system. The permittee submits a semi-annual report of monitoring, any deviations and/or monitoring downtime during the reporting period.

Aleris Recycling, Inc.:

EUIMDRYER-S2:

A 20,000 pound/hour aluminum scrap dryer. The dryer has a bypass stack that is used only during startup, shutdown and malfunction conditions. The emission unit last operated in December 2008. Therefore, compliance with emission unit permit conditions was not evaluated during this inspection.

EUIMHOTDROSS-S2:

Emission unit consists of salt cake and hot dross handling, storage and load out process that is controlled by a 40,000 cfm baghouse. Two mud pans were positioned and cooling under the draft hoods during the inspection. No visible emissions were observed from the baghouse stack during the inspection. The baghouse differential pressure reading was 1.8". During the post inspection meeting, staff reviewed the maintenance log for the emission unit which confirmed that the permittee was monitoring and recording the baghouse pressure drop at least once per shift and conducting daily non-certified visible emission checks.

EUIMREVERBFURN-S2:

Emission unit consists of a 15,000 pound/hour reverberatory furnace. Emissions from fluxing and melting are controlled by a 70,000 cfm lime-injected baghouse and are exhausted to SVIMDRY/REVERBH. The furnace was idled from December 2008 until its restart on

2/11/13. Performance testing was performed 4/25-26/2013 and demonstrated compliance with NESHAP and ROP emission limitations. Staff reviewed feed/charge and natural gas usage records which indicated compliance with material limits. The furnace was in operation at the time of inspection and receiving molten transfers from the rotary furnaces. No visible emissions were observed from the baghouse stack during the inspection. The 4-cell pulse jet baghouse differential pressure readings were 6.8" (cell 1), 5.4" (cell 2), 0" (cell 3 – cleaning) and 7.8" (cell 4). The current bag leak detection (BLD) reading was 0.22% with a BLD set point of 7% with an alarm delay of 32 seconds. The 3-hour average baghouse inlet temperature was 100 degrees F and the lime feed setting was 0.75 which comply with operating conditions established during the most recent performance test. Staff observed the lime sight glass in the lime silo for the baghouse and observed free flowing conditions. Furnace NESHAP label was located adjacent to the flux/alloy weigh hopper (last calibration date 8/15/14) rather than in the operator's room and appeared to reflect the most recent performance test operational parameters. Facility certified in their most recent semi-annual NESHAP excess emissions/summary report dated 8/28/14 that the molten metal level was maintained above the archway between the furnace charge well and hearth during reactive fluxing. Staff reviewed the most recent ACGIH annual inspection report for the reverberatory furnace during the post inspection meeting.

The chlorine room is used to store the 2,000 pound liquid chlorine cylinders and evaporator system that is used to supply chlorine gas to EUIMREVERBFURN-S2 for fluxing and demagging. Chlorine cylinders are weighed continuously to keep track of chlorine usage in the reverberatory furnace. There is one scale and one evaporator in this room. The scale was last calibrated on 8/15/14.

EUIMCRUCIBLES-S2:

Emission unit consists of eight natural gas fired holding crucibles for molten aluminum. At the time of the inspection, there were six crucibles and two were being fired using natural gas. Staff reviewed monthly natural gas usage records used to demonstrate compliance with the NOx 12-month rolling average emission limit.

FGIMCOBLDG-S1:

Flexible group includes all equipment at the facility, including equipment covered by other permits, grandfathered and exempt equipment. The most recent OM&M plan on file for the South plant was submitted on 3/11/14. The group 1 furnace labels were posted and checked during the inspection. Feed/charge scales and front end loader scale arms have been calibrated within the past six months. The last NESHAP semi-annual excess emission/summary report was submitted to the district office on 8/28/14. Annual ACGIH inspection records for the capture and collection systems are current.

FGIMROTFURN1/2-S2:

Flexible group consists of two 21,000 pound/hour rotary furnaces each equipped with air curtains. Process emissions are routed through tower style air coolers and controlled by an 80,000 cfm lime injected shaker style baghouse. The furnaces were in operation at the time of the inspection. NESHAP labels for FGIMROTFURN1/2-S2 are located in the furnace control tower and reflect operating conditions established during the most recent performance test.

No visible emissions were noted during the brief observation of the rotary furnace

baghouse. The overall baghouse differential pressure was 7.28". The current bag leak detection (BLD) reading was 1.48% with a BLD set point of 61% with an alarm delay of 31 seconds. The 3-hour average baghouse inlet temperature was 233 degrees F (i.e. carbon injection was on during inspection) and the lime feed setting was 3.0 which comply with operating conditions (Method # 2) established during the most recent performance test. Staff observed the lime sight glass in the lime silo for the baghouse and observed free flowing conditions.

Multiple performance tests have been performed on the rotary furnaces between August 2012 and February 2014. There were three dross materials that underwent performance testing during this time period that failed to demonstrate compliance with PM10 and PM2.5 emission limitations. The facility added dross material code XAMWDR380E-F to the list of prohibited materials in the OM&M plan based on performance testing. Compliance with NESHAP and ROP emission limitations has been verified while processing scrap and for one dross material code that represent less than one percent of all dross material codes that may be stored and processed on-site. Staff reviewed records that indicate compliance with 12-month rolling time period emission and material throughput limitations. However, the reported PM10 and PM2.5 12-month rolling time period emissions from FGIMROTFURN1/2-S2 cannot be confirmed because the recordkeeping forms do not differentiate feed/charge throughputs by scrap and dross and due to the very limited test data while processing dross which may not represent "worse case material" for PM10 and/or PM2.5. The facility submitted permit to install application No. 76-12B on 5/13/14 to establish different PM10 and PM2.5 emission limits while processing dross and scrap. This application was withdrawn by the facility on 9/8/14. AQD Consent Order No. 35-2014 contains a compliance schedule for the North Plant to submit a PTI application not later than 6/30/15 to correct these PM10 and PM2.5 emission exceedances so a violation notice will not be issued at this time.

FGIMCOLDCLEANERS-S2:

Flexible group is for new cold cleaners placed into operation after 7/1/79. South plant has one cold cleaner located in the truck repair area. The lid was closed but the unit appeared to be missing the required operational label sticker. Staff provided the facility with a replacement MDEQ issued cold cleaner sticker to post on the unit. The emission unit is maintained by Safety Kleen and uses a 100% light petroleum distillate solvent.

FGIMRULE290-S2:

Flexible group is any emission unit that emits air contaminants and is exempt from the requirements of Rule 201 pursuant to Rules 278 and 290. Staff reviewed fugitive particulate matter emission records for EUIMROAD-S2 for previous 12-months which indicate compliance with 1000 pound/month emission limitation. The facility is also using Rule 290 for the installation of a Deox casting operation that was installed at the South plant. The crucible and deox emission units share a natural gas meter, therefore, recordkeeping was combined for these emission units. However, staff notified the facility on 9/9/14 via email that the emission rates are required to be tracked separately because the current combined rate would exceed the 1,000 pound/month emission limitation based on July 2014 records. On 9/19/14, the facility submitted updated Rule 290 emission records for the Deox casting

operation based on maximum natural gas burner input rate of 0.646 MMBtu/hr. and PM estimates from associated mold release agent which demonstrates compliance with Rule 290 emission limits.

FGCAM UNITS-S2:

Flexible group consists of emission units that use a control device to achieve compliance with a federally enforceable emission limitation or standard for particulate matter. The permittee operates and maintains a BLD system as specified in their OM&M plan for the baghouses associated with EUMREVERBFURN-S2, EUMROTFURN1-S2 and EUMROTFURN2-S2. The BLD system runs a daily zero and span calibration. Any calibration errors will trigger the BLD system to alarm and send an email to management who in turn notify maintenance staff to evaluate system. The permittee submits a semi-annual report of monitoring, any deviations and/or monitoring downtime during the reporting period.

At the time of the inspection and based on the compliance schedule in AQD Consent Order No. 35-2014 related to FGALFURN1/2/7/8-S1 and FGIMROTFURN1/2-S2, the facility appears to be in compliance with MI-ROP-N5957-2012c and 40 CFR Part 63, Subpart RRR requirements referenced in the ROP. -RIL

NAME RIL

DATE 9/22/14

SUPERVISOR MB 9/23/2014