

PUBLIC NOTICE

Arconic US LLC has applied to the Tennessee Division of Air Pollution Control (TDAPC) for approval/renewal of a Plantwide Applicability Limitation (PAL) permit for the emissions of Volatile Organic Compounds (VOC) at this facility located at 2300 North Wright Road and 300 North Hall Road, Alcoa, Tennessee 37701. The application is subject to review under 1200-03-09-.01(4)(s) and 1200-03-09-.01(5) of the Tennessee Air Pollution Control Regulations, Department of Environment and Conservation, which requires a public notification and a 30-day public comment period.

The TDAPC has reviewed the application with respect to the above-referenced rule. The TDAPC has made the determination that the PAL permit can be approved if certain conditions are met. A copy of the application submitted by Arconic US LLC, and the draft permit, are available for public inspection during normal business hours at the following locations:

Tennessee Department of Environment and Conservation Division of Air Pollution Control Knoxville Environmental Field Office 3711 Middlebrook Pike Knoxville, TN 37921	and	Tennessee Department of Environment and Conservation Division of Air Pollution Control William R. Snodgrass Tennessee Tower 312 Rosa L. Parks Avenue, 15th Floor Nashville, TN 37243
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Also, if you require a copy of the draft permit it is available electronically by accessing the TDEC internet site located at:

<https://www.tn.gov/environment/ppo-public-participation/ppo-public-participation/ppo-air.html>

Questions concerning the source(s) may be addressed to Greg Forte at (615) 532-0548 or by e-mail at greg.forte@tn.gov

Interested parties are invited to review these materials and comment. In addition, a public hearing may be requested at which written or oral presentations may be made. To be considered, written comments or requests for a public hearing must be received no later than 4:30 PM on March 29, 2024. To assure that written comments are received and addressed in a timely manner, written comments must be submitted using one of the following methods:

1. **Mail, private carrier, or hand delivery:** Address written comments to Ms. Michelle W. Owenby, Director, Division of Air Pollution Control, William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue 15th Floor, Nashville, Tennessee 37243.

2. **E-mail:** Submit electronic comments to air.pollution.control@tn.gov.

A final determination will be made after weighing all relevant comments.

Individuals with disabilities who wish to review information maintained at the above-mentioned depositories should contact the Tennessee Department of Environment and Conservation to discuss any auxiliary aids or services needed to facilitate such review. Such contact may be in person, by writing, telephone, or other means, and should be made no less than ten days prior to the end of the public comment period to allow time to provide such aid or services. Contact the Tennessee Department of Environment and Conservation ADA Coordinator, William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue 22nd Floor, Nashville, TN 37243, 1-(866)-253-5827. Hearing impaired callers may use the Tennessee Relay Service, 1-(800)-848-0298.

PAL PERMIT STATEMENT

Facility Name: Arconic US LLC dba Tennessee Operation
City: Alcoa
County: Blount

Date Application Received: May 1, 2023
Date Application Deemed Complete: May 1, 2023 (additional information dated September 14, 2023)
Permit Issuance Date: *** 2023
Permit Expiration Date: (issue date + 10 years) *** 2033

Emission Source Reference No.: 05-0008
Permit No.: 981350 PAL permit no. (previous PAL permit no. 967460)

INTRODUCTION

This narrative is being provided to assist the reader in understanding the content of the attached Plantwide Applicability Limitation (PAL) permit for Volatile Organic Compounds (VOC). The primary purpose of this PAL permit is to establish plantwide limits for the regulated NSR pollutants listed above applicable to **Arconic US LLC** and to provide practical methods for determining compliance with this limit. The following narrative is designed to accompany the PAL Permit. It initially describes the facility receiving the permit, then the applicable requirements and their significance, the compliance status with those applicable requirements, and finally the approach to the PAL permit. This narrative is intended only as an adjunct for the reviewer and has no legal standing. Any revisions made to the permit in response to comments received during the public participation process will be described in an addendum to this narrative.

Acronyms

- PSD - Prevention of Significant Deterioration
- PAL - Plantwide Applicability Limits
- NESHAP - National Emission Standards for Hazardous Air Pollutants
- NSPS - New Source Performance Standards
- MACT - Maximum Achievable Control Technology
- NSR - New Source Review
- BAE - Baseline Actual Emissions
- TAPCR – Tennessee Air Pollution Control Regulations
- TPY - Tons Per Year

I. Identification Information

A. Source Description Arconic is a Secondary Aluminum Processing facility. Primary smelting is no longer conducted here. The emission sources include the following:

Emission Unit	Ref. No. 05-0008-
Delacquering Furnace #2	27
Delacquering Furnace #3	27
No. 1 Melting Furnace	27
No. 2 Melting Furnace	27
No. 3 Melting Furnace	27
No. 4 Melting Furnace	27
No. 4 Melting Furnace (sidebay)	27
Tilting Rotary Furnace	27
Furnace No. 5	21
Furnace No. 6	21
Furnace No. 7	21
Melting Furnace No. 9	57
Holding Furnace No. 10	57
Melting Furnace No. 11	57
Holding Furnace No. 12	57
120" Mill see p. 226	106
120" Oil House	106

96" Mill	106
96" Oil House	106
80" Mill	106
80" Oil House	106
120" Mill Process Heater (Hot Line)	106
96" Mill Process Heater (Hot Line)	106
80" Mill Process Heater (Hot Line)	106
Preheat Furnaces	108
Annealing Furnaces No. 4-9	109
Continuous Cold Mill Process Heater	105
Continuous Cold Mill	105
Continuous Cold Mill Oil House	105
Continuous Cold Mill Welder	105
Melting Furnace No. 23	112
Melting Furnace No. 24	112
Melting Furnace No. 25	112
Melting Furnace No. 26	112
4 North Holding Furnace	112
4 South Holding Furnace	112
Continuous Cold Mill	105
Continuous Heat Treat Furnace #1	100
Trim Line No. 1 Electrostatic Lube Sprayer (lube Sprayer)	100
WWTP Hot Water Boiler	125
Annealing Furnaces	126
Annealing Furnace 1	126
Annealing Furnace 2	126
Annealing Furnace 3	126

Trim Line No. 2 Electrostatic Lube Sprayer	127
Tandem Cold Mill	100
Insignificant Activities	No reference

B. Facility Classification

1. Attainment or Non-Attainment Area Location

Area is designated as an attainment area for all criteria pollutants.

2. Company is located in a Class II area.

C. Regulatory Status

1. PSD/NSR

This facility is a major source under PSD.

2. Title V Major Source Status by Pollutant

Pollutant	Is the pollutant emitted?	If emitted, what is the facility's status?	
		Major Source Status	Non-Major Source Status
PM	Yes	X	
PM ₁₀	Yes	X	
SO ₂	Yes	X	
VOC	Yes	X	
NO _x	Yes	X	
CO	Yes	X	
Individual HAP	Yes	X	
Total HAPs	Yes	X	
CO ₂ (eq)	Yes	X	

3. MACT Standards

This facility is a major source for HAPs. This facility is subject to active MACT standards.

List MACT Rules if applicable:

There are NESHAP THC (Total Hydrocarbon Compound) limits for the Delacquering Furnaces only. The only affected sources at the facility are Delacquering Furnaces #2 and #3. The #1 Delacquering furnace was removed from service.

MACT Standards

This facility is a major source for HAPs and is subject to the indicated standards:

Applicable MACT Standard	Description of Source	Current Permit
Subpart DDDDD Industrial, Commercial, and Institutional Boilers and Process Heaters (There are no VOC limits associated with this rule)	Four NG fired annealing Furnaces and Trim Line Also Continuous Cold Mill	576488
Subpart RRR Secondary Aluminum Smelting There are NESHAP THC (Total Hydrocarban Compound) limits for the Delacquireing Furnaces only. The only affected sources at the facility are Delacquering Furnaces #2 and #3 . The #1 Delacquering furnace was removed from service.	Reclamation Operation	572135 and others
Subpart LL - National Emission Standards for Hazardous Air Pollutants for Primary Aluminum Reduction Plants	No longer any affected sources	N/A

4. Program Applicability

Are the following programs applicable to the facility?

PSD yes

PAL yes

NESHAP yes

NSPS yes

II. Compliance Information

A. Compliance Status

1. Is the facility currently in compliance with all applicable requirements? yes
2. Are there any applicable requirements that will become effective during the permit term? no

III. Other Requirements

A. Emissions Trading

The facility is not involved in an emission trading program.

B. Acid Rain Requirements

This facility is not subject to any requirements in Title IV of the Clean Air Act.

C. Prevention of Accidental Releases

Not required to file a risk management plan for accidental releases under 112(r)

IV. Public Participation Procedures

1. EPA Region 4 Air Planning Branch
2. North Carolina
3. Cherokee Nation
4. Knox County

Federal land Manager Notification of availability of PAL application on August 28, 2023

Allen, Tim <tim_allen@fws.gov>;

Stacy, Andrea <Andrea_Stacy@nps.gov>;

Collins, Catherine <Catherine_Collins@fws.gov>;

Shepherd, Don <Don_Shepherd@nps.gov>;

susan_johnson@nps.gov;

Pitrolo, Melanie -FS <melanie.pitrolo@usda.gov>

Federal Land Manager Notification of availability of PAL draft permit for review and also a list of Class 1 areas within 300 km of the Arconic facility were provided to following agencies on (or about) February 26, 2024

Email Address	Agency
Tim_Allen@fws.gov	Fish and Wildlife Service
andrea_stacy@nps.gov	National Park Service
catherine_collins@fws.gov	Fish and Wildlife Service
Jim_Renfroe@nps.gov	FLM – National Park Service – Smokey Mountains
Ghazal_majidi-weese@usda.gov	Forest Service
Don_Shepherd@nps.gov	National Park Service
susan_johnson@nps.gov	National Park Service
melanie.pitrolo@usda.gov	Forest Service

The above agencies were provided with the following list of Class 1 areas impacted by the PAL facility sources

Table 1. Class I Areas Located Within 300 km of Arconic US

Class I Area	Distance (km)
Mammoth Cave National Park	240
Linville Gorge Wilderness Area Wilderness	185
Cohutta Wilderness Area	116
Shining Rock Wilderness Area	113
Joyce-Kilmer-Slickrock Wilderness Area	46
Great Smoky Mountains National Park	44

V. Project Description

PAL Permit No. 981350 represents the first renewal of the PAL Permit for this facility. The original PAL permit for the facility was 967460 for VOC. On November 22, 2023, the permittee requested an extension of the PAL permit issuance date in consideration that the rules state that the existing PAL requirements will be effective until

the new PAL permit is issued, as long as the application is submitted on time. Therefore, until issuance of PAL Permit 981350, the provisions of PAL permit 967460 will remain in effect.

VI. PAL PERMIT APPROACH

The regulations governing PAL permits for facilities located in areas designated as attainment with the National Ambient Air Quality Standards (NAAQS) are part of the Federal and TAPC PSD regulations codified at 40 CFR 51.166 (§ 51.166 Prevention of significant deterioration of air quality) and 52.21 (§ 52.21 Prevention of significant deterioration of air quality) and TAPCR 1200-03-09-.01(4). The Division is proposing this PAL permit for VOC that has been developed in accordance with the applicable TAPCR PAL regulations.

PAL Permit 967460, issued December 1, 2013, includes references to TAPCR 1200-03-09-.01(5)(b)10 TAPCR 1200-03-09-.01(5) is entitled “Growth Policy” and TAPCR 1200-03-09-.01(5)(b)(10) is entitled “Nonattainment Areas.” Blount County was formerly designated as nonattainment for ozone (VOC).

Blount County is now designated Attainment for ozone (and all other pollutants). However, because the initial PAL was set up with the rules for a Nonattainment Area (TAPCR 1200-03-09-.01(5)(b)10), those rules are carried forward.

Also, due to concerns about the permit issuance deadline, the Division advised the facility that a request to allow an extra 180 days for PAL permit issuance may assist with the issuance deadline. The facility submitted that request on September 22, 2023, requesting an additional 180 days for PAL permit issuance. This was requested with the knowledge that the facility could continue to operate under the provisions of PAL Permit 967460 until issuance of the new PAL permit.

1. DERIVATION OF PAL LEVELS

TAPCR 1200-03-09-.01(5)(b) allows existing major stationary sources to use any 24-month period within the 10 years preceding the PAL permit application submittal to establish facility baseline actual emissions (BAE). Arconic calculated the proposed “actual” based PAL levels for VOC emissions (the only pollutant for which a PAL is being requested in accordance with TAPCR 1200-03-09-.01(5)(b). The VOC PAL level was calculated by the methodology described in TAPCR 1200-03-09-.01(5)(b)10(ii)(I) and (II).

The VOC PAL level for Permit 967460, issued December 1, 2013, was set at 1,715.92 tons per year. The PAL level is being adjusted with this permit based on procedures specified in TAPCR 1200-03-09-.01(5)(b)10(x) (Renewal of a PAL)

TAPCR 1200-03-09-.01(5)(b)10(iii)(I) requires a list of all units submitted on the application shall be designated as small, significant or major based on potential to emit. This was included as Table B.1. Potential to Emit, PAL

Source Classification and Applicable Requirements at Attachment 3 to the September 14, 2023, revised application. This table is seen below as Table B-1.

TAPCR 1200-03-09-.01(5)(b)(10)(iii) requires calculation of baseline actual emissions. The time period chosen for the baseline Actual Emissions (BAE) was December 2014 through November 2016. The average VOC emissions rate for this period was 341.16 tons per year. This value is found at Attachment C “Baseline Actual Emissions” of the April 27, 2023, PAL application.

TAPCR 1200-03-09-.01(5)(b)(10)(iii) requires calculation procedures that would be used to convert monitoring system data to monthly and annual emissions based on a 12-month rolling total for each month as required by TAPCR 1200-03-09-.01(5)(b)(10)(vii)(VI). These procedures are found at Attachment E, Rationale and Supporting Calculations for Setting the PAL VOC Level in the April 27, 2023, Application and Table E.2: Source Throughputs and Emission Calculations for PAL VOC level at Attachment 3 of the September 14, 2023, Revised application, with a minor change in test reference from January 18, 2024.

Based on changes in the type of production, control for particulate matter that also reduces VOC, and anticipated customer demand, the company has calculated the total annual emissions – potential to emit from this source as 1,496.17 tons per year. This value was obtained from Table B-1: Potential to Emit, PAL source Classification and Applicable Requirements as submitted September 14, 2023. This table is seen below as Table B-1.

However, the permittee has calculated a maximum VOC annual emissions level based on anticipated maximum operating levels. This value is calculated at 516.64 tons, Total Annual Emissions. When 40.0 tons per year (VOC Significance Threshold) is added, the PAL VOC Emission Limit is 556.64 tons per year. This calculation is from Table E-2: Source Throughputs and Emission Calculations for PAL VOC level from the September 14, 2023, PAL application updated submittal. This table is seen below as Table E-2.

Below is the Table B-1: Potential to Emit, PAL Source Classification and Applicable Requirements from the September 14, 2023, revised application with modification of January 18, 2024, requested by permittee for Delac #2

Area	Source	Emission Factor	Emission Factor Basis	Emission Factor Reference	Potential Throughput	Potential VOC ¹ (ton/yr)	PAL Emission Unit Classification	Applicable Requirement(s)	Comments
Can Rec	Delac #2	0.001 lb/ton	Aluminum Throughput	2023 Stack Test Data	245,280 ton/yr	0.12	Small	0.2 lb/ton of feedcharge (40 CFR 63.1505-3)(1)(i))	Delac #2 throughput based on Melting Furnaces No. 1 and No. 2 throughput minus Delac #3 maximum.
	Delac #3	0.007 lb/ton	Aluminum Throughput	2021 Stack Test Data	175,200 ton/yr	0.61	Small	0.2 lb/ton of feedcharge (40 CFR 63.1505-3)(1)(i))	
	Melting Furnace No. 1	0.04 lb/ton	Aluminum Throughput	1995 Stack Test	210,240 ton/yr	4.20	Small	TAPCR 1200-03-07-07	
	Melting Furnace No. 2	0.04 lb/ton	Aluminum Throughput	1995 Stack Test	210,240 ton/yr	4.20	Small	TAPCR 1200-03-07-07	
	Melting Furnace No. 3	0.05 lb/ton	Aluminum Throughput	2006 Stack Test	153,300 ton/yr	3.83	Small	TAPCR 1200-03-07-07	
	Melting Furnace No. 4 (mainbay)	0.004 lb/ton	Aluminum Throughput	1995 Stack Test	153,300 ton/yr	0.31	Small	TAPCR 1200-03-07-07	
South Ingot	Melting Furnace No. 4 (sidebay)	0.001 lb/ton	Aluminum Throughput	1995 Stack Test	153,300 ton/yr	0.08	Small	TAPCR 1200-03-07-07	
	Tilting Rotary Furnace	0.012 lb/ton	Aluminum Throughput	2002 Stack Test	105,120 ton/yr	0.63	Small	TAPCR 1200-03-07-07	
	Holding Furnace No. 5	5.5 lb/MMscf	Natural Gas Combusted	AP-42	343.53 MMscf/yr	0.94	Small	TAPCR 1200-03-07-07	
	Holding Furnace No. 6	5.5 lb/MMscf	Natural Gas Combusted	AP-42	343.53 MMscf/yr	0.94	Small	TAPCR 1200-03-07-07	
	Holding Furnace No. 7	5.5 lb/MMscf	Natural Gas Combusted	AP-42	343.53 MMscf/yr	0.94	Small	TAPCR 1200-03-07-07	
	Melting Furnace No. 9	0.032 lb/ton	Aluminum Throughput	2002 Stack Test	350,400 ton/yr	5.61	Small	TAPCR 1200-03-07-07	
	Holding Furnace No. 10	0.04 lb/ton	Aluminum Throughput	1994 Stack Test	350,400 ton/yr	7.01	Small	TAPCR 1200-03-07-07	
	Melting Furnace No. 11	0.032 lb/ton	Aluminum Throughput	2002 Stack Test	350,400 ton/yr	5.61	Small	TAPCR 1200-03-07-07	
	Holding Furnace No. 12	0.04 lb/ton	Aluminum Throughput	1994 Stack Test	350,400 ton/yr	7.01	Small	TAPCR 1200-03-07-07	
	North Ingot	Melting Furnace No. 23	0.05 lb/ton	Aluminum Throughput	2006 Stack Test	109,500 ton/yr	2.74	Small	TAPCR 1200-03-07-07
Melting Furnace No. 24		0.05 lb/ton	Aluminum Throughput	2006 Stack Test	109,500 ton/yr	2.74	Small	TAPCR 1200-03-07-07	
Melting Furnace No. 25		5.5 lb/MMscf	Natural Gas Combusted	AP-42	425.41 MMscf/yr	1.18	Small	TAPCR 1200-03-07-07	
Melting Furnace No. 26		0.05 lb/ton	Aluminum Throughput	2006 Stack Test	109,500 ton/yr	2.74	Small	TAPCR 1200-03-07-07	
4 North Holding Furnace		5.5 lb/MMscf	Natural Gas Combusted	AP-42	283.41 MMscf/yr	0.78	Small	TAPCR 1200-03-07-07	
Hot Line	4 South Holding Furnace	5.5 lb/MMscf	Natural Gas Combusted	AP-42	283.41 MMscf/yr	0.78	Small	TAPCR 1200-03-07-07	
	Preheat Furnaces	5.5 lb/MMscf	Natural Gas Combusted	AP-42	2,536.02 MMscf/yr	6.97	Small	TAPCR 1200-03-06-03 and 1200-03-09-01(4)	Requested natural gas limit 120", 96", and 80" mills throughput limit based on the combined CCM and Cold Mill No. 2 potential throughput.
	120" Mill	0.066 lb/ton	Aluminum Throughput	2023 Stack Test Data	1,755,000.0 ton/yr	49.14	Significant	TAPCR 1200-03-07-07	
	120" Oil House	0.03 lb/ton	Aluminum Throughput	Material Balance	1,755,000.0 ton/yr	25.33	Small	TAPCR 1200-03-07-07	
	96" Mill	0.108 lb/ton	Aluminum Throughput	2023 Stack Test Data	1,755,000.0 ton/yr	94.77	Significant	TAPCR 1200-03-07-07	
	96" Oil House	0.04 lb/ton	Aluminum Throughput	Material Balance	1,755,000.0 ton/yr	35.10	Small	TAPCR 1200-03-07-07	
	80" Mill	0.680 lb/ton	Aluminum Throughput	2023 Stack Test Data	1,755,000.0 ton/yr	596.70	Major	TAPCR 1200-03-07-07	
	80" Oil House	0.04 lb/ton	Aluminum Throughput	Material Balance	1,755,000.0 ton/yr	35.10	Small	TAPCR 1200-03-07-07	
	120" Mill Process Heater	5.5 lb/MMscf	Natural Gas Combusted	AP-42	100.91 MMscf/yr	0.28	Small	TAPCR 1200-03-06-03	
	96" Mill Process Heater	5.5 lb/MMscf	Natural Gas Combusted	AP-42	100.91 MMscf/yr	0.28	Small	TAPCR 1200-03-06-03	
	80" Mill Process Heater	5.5 lb/MMscf	Natural Gas Combusted	AP-42	146.00 MMscf/yr	0.40	Small	TAPCR 1200-03-06-03	
	Annealing Furnaces	5.5 lb/MMscf	Natural Gas Combusted	AP-42	1,580.24 MMscf/yr	4.35	Small	TAPCR 1200-03-06-03	
	CCM	0.41 lb/ton	Aluminum Throughput	2013 Stack Test	1,314,000 ton/yr	289.37	Major	TAPCR 1200-03-07-07	
	CCM Oil House	0.027 lb/bbl oil	Adjusted Make-up Oil	Material Balance	1,868,508 bbl/yr	25.22	Small	TAPCR 1200-03-07-07	
	CCM Welder	0.01 lb/weld	No. of Welds	1994 Stack Test	722,700 welds/yr	3.61	Small	TAPCR 1200-03-07-07	
CCM Process Heater	5.5 lb/MMscf	Natural Gas Combusted	AP-42	100.91 MMscf/yr	0.28	Small	TAPCR 1200-03-06-03		
Continuous Cold Mill (CCM)	Tandem Cold Mill	0.138 lb/ton	Aluminum Throughput	2015 Stack Test	441,000 ton/yr	30.43	Small	TAPCR 1200-03-07-07	
	Continuous Heat Treat Furnace	5.5 lb/MMscf	Natural Gas Combusted	AP-42	269.57 MMscf/yr	0.74	Small	TAPCR 1200-03-06-03	
	Trim Line #1 Lubricant Sprayer	2.67 lb/gal	Lubricant Applied	Material Balance	67,106 gal/yr	89.59	Significant	TAPCR 1200-03-07-07	
Automotive	Trim Line #2 Lubricant Sprayer	2.67 lb/gal	Lubricant Applied	Material Balance	67,106 gal/yr	89.59	Significant	TAPCR 1200-03-07-07	
	Wastewater Treatment Plant (WWTP)	5.5 lb/MMscf	Natural Gas Combusted	AP-42	17.18 MMscf/yr	0.05	Small	TAPCR 1200-03-06-03	
Varies	Insignificant Emission Units (IEU)					84.88	Small	TAPCR 1200-03-06-03 and 1200-03-07-07	
					Potential to Emit =	1,486.17	ton/yr		

¹ Regarding VOC emissions from startups, shutdowns, and malfunctions, Arconic does not anticipate any increased or excess VOC emissions from the emission units listed during these periods given the nature of the associated production activities. All of the VOC emission units in question operate in essentially an "on/off" mode meaning the emissions do not fluctuate significantly during periods of startup, shutdown, or malfunction.

Below is Table E-2: Source Throughputs and Emission Calculations for PAL from Attachment 3, September 14, 2023, Revised Submittal (this is not the Potential to Emit) with modification of January 18, 2024, requested by permittee for Delac #2.

Area	Source	Emission Factor	Emission Factor Basis	Emission Factor Reference	Potential Throughput	Potential VOC ¹ (ton/yr)	Comments
Can Rec	Delac #2	0.001 lb/ton	Aluminum Throughput	2023 Stack Test Data	0 ton/yr	0.00	
	Delac #3	0.007 lb/ton	Aluminum Throughput	2021 Stack Test Data	0 ton/yr	0.00	
	Melting Furnace No. 1	0.04 lb/ton	Aluminum Throughput	1995 Stack Test	0 ton/yr	0.00	
	Melting Furnace No. 2	0.04 lb/ton	Aluminum Throughput	1995 Stack Test	0 ton/yr	0.00	
	Melting Furnace No. 3	0.05 lb/ton	Aluminum Throughput	2006 Stack Test	0 ton/yr	0.00	
	Melting Furnace No. 4 (mainbay)	0.004 lb/ton	Aluminum Throughput	1995 Stack Test	34,500 ton/yr	0.07	Based on historical Hot Line scrap rate of 6% and remelting the scrap in Melting Furnace No. 4
	Melting Furnace No. 4 (sidebay)	0.001 lb/ton	Aluminum Throughput	1995 Stack Test	34,500 ton/yr	0.02	
South Ingot	Tilting Rotary Furnace	0.012 lb/ton	Aluminum Throughput	2002 Stack Test	66,700 ton/yr	0.40	Based on historical hot dross generation rate of 10% of the melting furnaces throughput and processing the hot dross in the Tilting Rotary Furnace (TRF)
	Holding Furnace No. 5	5.5 lb/MMscf	Natural Gas Combusted	AP-42	0.00 MMscf/yr	0.00	
	Holding Furnace No. 6	5.5 lb/MMscf	Natural Gas Combusted	AP-42	0.00 MMscf/yr	0.00	
	Holding Furnace No. 7	5.5 lb/MMscf	Natural Gas Combusted	AP-42	0.00 MMscf/yr	0.00	
	Melting Furnace No. 9	0.032 lb/ton	Aluminum Throughput	2002 Stack Test	318,250 ton/yr	5.06	Based on historical input of 1.1 lbs of aluminum charged to furnaces per pound of aluminum processed by the Hot Line and distributed evenly between the melting/holding furnaces.
	Holding Furnace No. 10	0.04 lb/ton	Aluminum Throughput	2002 Stack Test	348,968 ton/yr	6.98	
	Melting Furnace No. 11	0.032 lb/ton	Aluminum Throughput	2002 Stack Test	318,250 ton/yr	5.06	Added molten aluminum input from Melting Furnace #4 and TRF (93% and 52% historical recovery, respectively) evenly between the Holding Furnaces.
	Holding Furnace No. 12	0.04 lb/ton	Aluminum Throughput	2002 Stack Test	348,968 ton/yr	6.98	
	Melting Furnace No. 23	0.05 lb/ton	Aluminum Throughput	2006 Stack Test	0 ton/yr	0.00	
	Melting Furnace No. 24	0.05 lb/ton	Aluminum Throughput	2006 Stack Test	0 ton/yr	0.00	
North Ingot	Melting Furnace No. 25	5.5 lb/MMscf	Natural Gas Combusted	AP-42	0.00 MMscf/yr	0.00	
	Melting Furnace No. 26	0.05 lb/ton	Aluminum Throughput	2006 Stack Test	0 ton/yr	0.00	
	4 North Holding Furnace	5.5 lb/MMscf	Natural Gas Combusted	AP-42	0.00 MMscf/yr	0.00	
	4 South Holding Furnace	5.5 lb/MMscf	Natural Gas Combusted	AP-42	0.00 MMscf/yr	0.00	
Hot Line	Preheat Furnaces	5.5 lb/MMscf	Natural Gas Combusted	AP-42	431.25 MMscf/yr	1.19	Based on historical consumption of 0.00075 MMscf/ton aluminum processed through the Hot Line
	120" Mill	0.056 lb/ton	Aluminum Throughput	2023 Stack Test Data ²	575,000 ton/yr	16.10	
	120" Oil House	0.03 lb/ton	Aluminum Throughput	Material Balance	575,000 ton/yr	8.63	
	96" Mill	0.108 lb/ton	Aluminum Throughput	2023 Stack Test Data ²	575,000 ton/yr	31.05	
	96" Oil House	0.04 lb/ton	Aluminum Throughput	Material Balance	575,000 ton/yr	11.50	
	80" Mill	0.680 lb/ton	Aluminum Throughput	2023 Stack Test Data ²	575,000 ton/yr	195.50	
	80" Oil House	0.04 lb/ton	Aluminum Throughput	Material Balance	575,000 ton/yr	11.50	
	120" Mill Process Heater	5.5 lb/MMscf	Natural Gas Combusted	AP-42	32.20 MMscf/yr	0.09	Based on historical natural gas consumption of 0.000056 MMscf/ton aluminum processed through the Hot Line
	96" Mill Process Heater	5.5 lb/MMscf	Natural Gas Combusted	AP-42	34.50 MMscf/yr	0.09	Based on historical consumption of 0.000060 MMscf/ton aluminum processed through the Hot Line
	80" Mill Process Heater	5.5 lb/MMscf	Natural Gas Combusted	AP-42	63.25 MMscf/yr	0.17	Based on historical consumption of 0.00011 MMscf/ton aluminum processed through the Hot Line
	Annealing Furnaces	5.5 lb/MMscf	Natural Gas Combusted	AP-42	253.00 MMscf/yr	0.70	Based on historical consumption of 0.00044 MMscf/ton aluminum processed through the Hot Line
	Continuous Cold Mill (CCM)	CCM	0.41 lb/ton	Aluminum Throughput	2013 Stack Test	575,000 ton/yr	117.88
CCM Oil House		0.027 lb/lb oil	Adjusted Make-up Oil	Material Balance	817,650 lb/yr	11.04	Based on historical adjusted make-up oil rate of 1.422 lb/ton aluminum processed through the CCM
CCM Welder		0.01 lb/weld	No. of Welds	1994 Stack Test	316,250 welds/yr	1.58	Based on historical welding rate of 0.55 welds/ton aluminum processed through the CCM
CCM Process Heater		5.5 lb/MMscf	Natural Gas Combusted	AP-42	52.90 MMscf/yr	0.15	Based on historical natural gas consumption of 0.000092 MMscf/ton aluminum processed through the CCM
Automotive	Tandem Cold Mill	0.138 lb/ton	Aluminum Throughput	2015 Stack Test	0 ton/yr	0.00	
	Continuous Heat Treat Furnace	5.5 lb/MMscf	Natural Gas Combusted	AP-42	0.00 MMscf/yr	0.00	
	Trim Line #1 Lubricant Sprayer	2.67 lb/gal	Lubricant Applied	Material Balance	0 gal/yr	0.00	
Wastewater Treatment Plant (WWTP)	Trim Line #2 Lubricant Sprayer	2.67 lb/gal	Lubricant Applied	Material Balance	0 gal/yr	0.00	
	WWTP Boiler	5.5 lb/MMscf	Natural Gas Combusted	AP-42	17.18 MMscf/yr	0.05	
Varies	Insignificant Emission Units (IEU)					84.88	
Total Annual Emissions =						516.64	ton/yr
VOC Significance Threshold =						40.00	ton/yr
PAL VOC Emission Limit =						556.64	ton/yr

¹ Regarding VOC emissions from startups, shutdowns, and malfunctions, Arconic does not anticipate any increased or excess VOC emissions from the emission units listed during these periods given the nature of the associated production activities. All of the VOC emission units in question operate in essentially an "on/off" mode meaning the emissions do not fluctuate significantly during periods of startup, shutdown, or malfunction.

The VOC limit for previous PAL permit 967460 was 1,715.92 tons during all intervals of 12 consecutive months. However, based on a change in operations (additional controls for PM resulted in a decrease in VOC emissions) that value is being significantly reduced. The current Potential-to-Emit for VOC sources is 1496.17 tons VOC per year. This value is $(1496.17/1,715.92) = 87.2\%$ of the current PAL level. The new proposed PAL level is 556.54 tons per year.

Under the terms of TAPCR 1200-03-09-.01(5)(b)(10)(x) Renewal of a PAL and 1200-03-09-.01(5)(b)(10)(x) (IV), the following requirements are specified:

PAL adjustment. In determining whether and how to adjust the PAL, the Technical Secretary shall consider the options outlined in subitems 10.(x)(IV)I. and II. of this subparagraph. However, in no case may any such adjustment fail to comply with subitem 10.(x)(IV)III. of this subparagraph.

- I. If the emissions level calculated in accordance with subpart 10.(vi) of this subparagraph is equal to or greater than 80 percent of the PAL level, the Technical Secretary may renew the PAL at the same level without considering the factors set forth in subitem 10.(x)(IV)II. of this subparagraph; or

(APC comment- The Baseline Actual Emissions value for the period December 2014 through November 2016 found at Attachment C of the application dated April 27, 2023, was 341.16 tons per year. The PAL level for permit 967460 is 1715.92 tons per year.)

- II. The Technical Secretary may set the PAL at a level that it determines to be more representative of the source's baseline actual emissions, or that it determines to be appropriate considering air quality needs, advances in control technology, anticipated economic growth in the area, desire to reward or encourage the source's voluntary emissions reductions, or other factors as specifically identified by the Technical Secretary in its written rationale.

(APC comment- The permittee has calculated 556.64 tons VOC per year as the PAL VOC emission limit. The calculation for this value is found at Table E.2 : Source Throughputs and Emission Calculations for PAL VOC level from the September 14, 2023 revised PAL application.)

- III. Notwithstanding subitems 10.(x)(IV)I. and II. of this subparagraph,

- A. If the potential to emit of the major stationary source is less than the PAL, the Technical Secretary shall adjust the PAL to a level no greater than the potential to emit of the source; and

(APC Comment-the permittee has calculated the potential to emit at 1,496 tons per year VOC. This calculation is found at Table B-1: Potential to Emit, PAL Source Classification, and Applicable Requirements at Attachment 3 to the December 14, 2023 PAL application update.)

- B. The Technical Secretary shall not approve a renewed PAL level higher than the current PAL, unless the major stationary source has complied with the provisions of subpart 10.(xi) of this subparagraph (increasing a PAL).

(APC Comment-the PAL level for permit for permit 967460 is 1715.92 tons per year. The proposed PAL level is 556.64 tons per year VOC, well below the level in permit 967460)

Rationale for Inputs for Setting the PAL VOC Level

Due to market demand, the amount and type (can sheet, automotive, or industrial) of aluminum produced by the facility varies each year. To allow the facility to respond to market demand, the PAL VOC level was based on the facility processing 1.15 billion pounds of aluminum on the Hot Line during a 12-month period. The facility has historically processed about 1 billion pounds of aluminum on the Hot Line during a 12-month period. See Table E.1 below (from Attachment E Rationale and Supporting Calculations for Setting the PAL VOC Level from the April 27, 2023, application) for the historical annual amount of aluminum processed on the Hot Line at the facility from CY2013 to CY2022.

Table E.1: Annual Amount of Aluminum Processed on the Hot Line

Year	Hot Line Throughput (Billion Lbs/Year)	Year	Hot Line Throughput (Billion Lbs/Year)
2013	1.13	2018	0.94
2014	1.02	2019	0.70
2015	1.03	2020	0.57
2016	1.15	2021	0.84
2017	0.99	2022	0.93

To produce the worst-case VOC emission level for the facility, the aluminum ingots rolled on the Hot Line are produced by the melting/holding furnaces of Pit 3 (Melting/Holding Furnaces No. 9 through 12) and finished

through the Continuous Cold Mill (CCM). Also, the Hot Line scrap is processed through Melting Furnace No. 4 and hot dross from the furnaces is processed by the Tilting Rotary Furnace (TRF). The molten aluminum produced by Melting Furnace No. 4 and TRF is then transferred to either Holding Furnace No. 10 or 12 and casted into aluminum ingots in Pit 3. See revised Table E.2: Source Throughputs and Emissions calculations for PAL VOC level (above), which was obtained from the September 14, 2023, application, for the detailed source throughputs and VOC emission calculations for setting the new PAL VOC Level.

2. PAL COMPLIANCE DEMONSTRATION METHODOLOGY

Pursuant to TAPCR 1200-03-09-.01(5)(b)10(iii), the owner or operator of a major facility submitting a PAL permit application shall include the calculation procedures that will be used to convert the monitoring system data to monthly and annual mass emissions based on 12-month rolling total emissions recorded during each month. Inherent in this requirement is knowledge of the monitoring and recordkeeping methods that will be used to track emissions of each PAL pollutant from each emissions unit for purposes of calculating rolling 12-month total emissions each month. The Arconic US LLC facility will be required to comply with the monitoring, recordkeeping, and reporting requirements listed in TAPCR 1200-03-09-.01(5)(b)10(xii) through (xiv). The data to be monitored for each emissions unit and the method by which the data will be recorded for each emissions unit and PAL pollutant are briefly discussed in the following paragraphs.

The monthly mass emissions of VOC (the only PAL pollutant) will be summed for each emissions unit and on a plant-wide basis. The monthly totals (ton/month) will be summed with the monthly totals from the previous 11 months for each emissions unit and facility-wide to determine the actual 12-month rolling total mass emissions rates in TPY. The following paragraphs identify how VOC emissions will be calculated for each type of emissions unit at the facility and how the emissions will be converted to a monthly mass emissions rate. Arconic US LLC proposes to use the emission factors found at Table E-2 (seen above from the from the September 14, 2023, update) and the methods specified in Condition 2 of Permit 981350 to calculate mass emissions of VOC from each emissions unit and facility-wide in accordance with TAPCR 1200-03-09-.01(5)(b)10(xii)(II)I. through IV.

Per TAPCR 1200-03-09-.01(5)(b)10(xii)(VI)III, if technically practicable, the permittee of a significant emissions unit that relies on an emission factor to calculate PAL pollutant emissions shall conduct validation testing to determine a site-specific emission factor within six months of PAL permit issuance, unless the Technical Secretary determines that emissions testing is not required. TDEC has identified below those emissions units that will be subject to validation testing six months after the PAL permit is issued. The following narrative addresses validation and revalidation testing for the identified units.

Testing is addressed below.

Condition 9 of the permit (and also the previous permit) states:

All data used to establish the PAL pollutant must be revalidated through performance testing or other scientifically valid means approved by the Technical Secretary. Such testing must occur at least once every 5 years after issuance of the PAL.

The Division is requiring that the following individual sources that are classified as Major or Significant PAL Emission Units would need to be tested under the specified 5-year schedule:

Source Description	Source ID 05-0008	PAL Category
Hot Line: 120" Mill	106	Significant
Hot Line: 96" Mill	106	Significant
Hot Line: 80" Mill	106	Major
Continuous Cold Mill (CCM)	105	Major

The #1 and #2 Trim Line Lubricant Sprayers are both classified as Significant PAL sources, but testing will not be required because emissions are determined for these units by material balance.

Under the provisions of 40 CFR § 63.1511(e), a performance test must be conducted every 5 years following the initial performance test for the Delacquering Furnaces #2 and #3 (Source 05-0008-27). This Subpart RRR-required test will fulfill the requirements of the PAL test requirement for these units.

The 5-year testing requirement will be waived for all other units that are using AP-42 emission factors, Material balance emission factors from engineering calculations and /or similar equipment emissions data.

The 5-year testing requirement will be waived for units classified as Insignificant Activities under TAPCR 1200-02-09-.04.

Some units have been equipped with devices to control PM-10 emissions since the previous PAL permit was issued. The primary purpose of the horizontal cyclonic separators and SMS Airwash control devices is to capture PM-10 emissions which consist of oil-based particulate matter droplets. These control devices also have the additional effect of reducing VOC emissions due to the removal of the oil-based droplets. Therefore, the Division agrees with the Arconic request to utilize the Compliance Assurance Monitoring (CAM) plan in Title V Operating Permit No. 576488 to verify the validity of the controlled VOC emission factors for the Hot Line 120" Mill , Hot Line 96" Mill, Hot Line 80" Mill , Continuous Cold Mill, and Tandem Cold Mill that are based on performance testing. Revised and newly applicable Title V Application forms along with the CAM Plan in Title V Operating Permit No. 576488 are included as Attachment 2 to the September 14, 2023, revised PAL application.

The three Hot Line Mills (120", 96" and 80") were tested in 2023. Note that the requirement for testing (or other means approved by the Division) is stated at TAPCR 1200-03-09-.01(5)(b)10(xii)(IX) , as follows: Re-validation. All data used to establish the PAL pollutant must be revalidated through performance testing or other scientifically valid means approved by the Technical Secretary. Such testing must occur at least once every 5 years after issuance of the PAL permit.

The following units have previously been tested:

Source	Category of Source (either Significant or Major PAL Emission Unit Classification) with potential to emit	VOC Emission Factor	PM ₁₀ Control	Basis for Factor
Hot Line 120" Mill	Significant (Potential 49.14 TPY VOC)	0.056 lb/ton Aluminum Throughput	Horizontal Cyclonic Separators (2)	2023 Stack test data
Hot Line 96" Mill	Major (Potential 94.77 TPY VOC)	0.108 lb/ton Aluminum Throughput	Horizontal Cyclonic Separators (2)	2023 Stack test data

Hot Line 80" Mill	Major (Potential 595.82 TPY VOC)	0.679 lb/ton Aluminum Throughput	Horizontal Cyclonic Separators (2)	2023 Stack test data
Continuous Cold Mill (CCM)	Major (Potential 269.37 TPY VOC)	0.41 lb/ton Aluminum Throughput	Horizontal Cyclonic Separators (2)	2013 Stack Test
Tandem Cold Mill	Small (Potential 30.43 TPY VOC)	0.138 lb/ton Aluminum Throughput	Airwash Oil Separator	2015 Stack Test

All of the above units are required to comply with Compliance Assurance Monitoring (CAM) requirements under 40 CFR Part 64 for PM10. These requirements are found at Attachment 2 of Permit 576488 for North Plant Fabrication, expiring October 24, 2025.

3. LIMITS REQUESTED FOR ELIMINATION IN THE PAL PERMIT

No limits for VOC in current permits that are requested for elimination.

VII. Permitting Activities

The only changes to the facility (related to the PAL) of the permit that occurred after the receipt of the April 27, 2023, application were as follows:

Amendment #18: June 1, 2023, notification of a change in the maximum VOC content in lubricant from 0.5 lb/gallon to 2.67 pounds of VOC per gallon.

Amendment #19: A letter dated June 13, 2023, specified VOC factors for the 120" mill, the 96" mill and the 80" mill based on April, 2023, testing.

VII. Dates of Permitting Actions

Action	Date
Federal land Manager Notification of availability of PAL application	August 28, 2023
Submittal of draft PAL permit to EPA Region 4	On or about February 27, 2024
Notification of draft PAL permit to Federal Land Managers	On or about February 27, 2024
Comments	
Response to Comments	
Issuance of PAL Permit	

**TENNESSEE AIR POLLUTION CONTROL BOARD
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
NASHVILLE, TENNESSEE 37243**



PLANTWIDE APPLICABILITY LIMITATION (PAL) PERMIT For Volatile Organic Compounds (VOC)

Issued Pursuant to Tennessee Air Quality Act

This permit fulfills the requirements of the federal regulations promulgated thereunder at 40 CFR §51.166(w). This permit is issued in accordance with the provisions of paragraph 1200-03-09-.01(4)(s) of the Tennessee Air Pollution Control Regulations. The permittee has been granted permission to operate an air contaminant source in accordance with emissions limitations and monitoring requirements set forth herein.

Effective Date: ***, 2023

Permit Number
981350

Expiration Date : ***, 2033

Issued To:

Arconic US LLC

Installation Address:

2300 North Wright Road and
300 North Hall Road

Installation Description:

Secondary Aluminum Processing Facility:

- See next page for individual source descriptions

Facility ID: 05-0008

Renewal Application Due Date:

SIC: 33

Between ***, 2032 and ***, 2033

Information Relied Upon:

Renewal Application dated April 27, 2023

Letter dated May 24, 2023

Letter dated June 13, 2023

Application dated September 14, 2023

(Continued on the next page)

TECHNICAL SECRETARY

No Authority is Granted by this Permit to Operate, Construct, or Maintain any Installation in Violation of any Law, Statute, Code, Ordinance, Rule, or Regulation of the State of Tennessee or any of its Political Subdivisions.

POST AT INSTALLATION ADDRESS

Source Descriptions for Listed Units Subject to Permitting

Emission Unit	Ref. No. 05-0008-
Delacquering Furnace #2	27
Delacquering Furnace #3	27
No. 1 Melting Furnace	27
No. 2 Melting Furnace	27
No. 3 Melting Furnace	27
No. 4 Melting Furnace (mainbay)	27
No. 4 Melting Furnace (sidebay)	27
Tilting Rotary Furnace	27
Holding Furnace No. 5	21
Holding Furnace No. 6	21
Holding Furnace No. 7	21
Melting Furnace No. 9	57
Holding Furnace No. 10	57
Melting Furnace No. 11	57
Holding Furnace No. 12	57
120" Mill	106
120" Oil House	106
96" Mill	106
96" Oil House	106
80" Mill	106
80" Oil House	106
120" Mill Process Heater (Hot Line)	106
96" Mill Process Heater (Hot Line)	106
80" Mill Process Heater (Hot Line)	106
Preheat Furnaces	108
Annealing Furnaces No. 4-9	109
Continuous Cold Mill Process Heater	105
Continuous Cold Mill	105

Continuous Cold Mill Oil House	105
Continuous Cold Mill Welder	105
Melting Furnace No. 23	112
Melting Furnace No. 24	112
Melting Furnace No. 25	112
Melting Furnace No. 26	112
4 North Holding Furnace	112
4 South Holding Furnace	112
Continuous Heat Treat Furnace #1	100
Trim Line No. 1 Electrostatic Lube Sprayer (Lube Sprayer)	100
WWTP Hot Water Boiler	125
Annealing Furnace 0	126
Annealing Furnace 1	126
Annealing Furnace 2	126
Annealing Furnace 3	126
Trim Line No. 2 Electrostatic Lube Sprayer	127
Tandem Cold Mill	100
Insignificant Emission Units	No point # assigned

The permittee shall include 84.88 tons of VOC emissions to the 12-month summary to account for the “Insignificant Sources” at this facility. This value is based on the revised application of September 14, 2023.

Limitations

1. Volatile organic compounds (VOC) emitted from this facility shall not exceed 556.64 tons during all intervals of 12 consecutive months. The permittee shall add 84.88 tons of VOC emissions to each 12-month summary to account for the insignificant sources at this facility. This is equivalent to 7.07 tons of VOC emissions from Insignificant Activities per month. This value is based on the application of April 27, 2023, and additional information dated September 14, 2023.

For each month during the PAL effective period after the first 12 months of establishing a PAL, the major stationary source owner or operator shall show that the sum of the monthly emissions from each emissions unit under the PAL for the previous 12 consecutive months is less than the PAL (a 12-month rolling total). For each month during the first 11 months from the PAL effective date, the major stationary source owner or operator shall show that the sum

of the preceding monthly emissions from the PAL effective date for each emissions unit under the PAL is less than the PAL.

TAPCR 1200-03-09-.01(5)(b)10 and 1200-03-09-.01(5)(b)10(iv)(I)

2. The calculation procedures that the permittee shall use to convert monitoring system data (emission factors, material VOC content, etc.) to monthly emissions and annual emissions based on a 12-month rolling total for each month are listed in this condition.

TAPCR -03-09-.01(5)(b)10(vii)(VI)

Listed Units and Associated Emission Factors with Monitoring Data

Compliance with this emission limitation shall be demonstrated by calculating the emissions of VOC from the following sources on a monthly basis from all units at the facility, using the associated emission factors as indicated below:

Source Emission Calculations for PAL VOC Level from September 14, 2023, Arconic Submittal Table B-1

Area	Source	Source ID 05-0008	Emission Factor	Emission Factor Basis	Emission Factor Reference
Can Rec	Delac #2	27	0.001 lb/ton	Aluminum Throughput	2023 Stack Test Data
	Delac #3	27	0.007 lb/ton	Aluminum Throughput	2021 Stack Test Data
	Melting Furnace No. 1	27	0.04 lb/ton	Aluminum Throughput	1995 Stack Test
	Melting Furnace No. 2	27	0.04 lb/ton	Aluminum Throughput	1995 Stack Test
	Melting Furnace No. 3	27	0.05 lb/ton	Aluminum Throughput	2006 Stack Test
	Melting Furnace No. 4 (mainbay)	27	0.004 lb/ton	Aluminum Throughput	1995 Stack Test
	Melting Furnace No. 4 (sidebay)	27	0.001 lb/ton	Aluminum Throughput	1995 Stack Test
	Tilting Rotary Furnace	27	0.012 lb/ton	Aluminum Throughput	2002 Stack Test
South Ingot	Holding Furnace No. 5	21	5.5 lb/MMscf	Natural Gas Combusted	AP-42
	Holding Furnace No. 6	21	5.5 lb/MMscf	Natural Gas Combusted	AP-42
	Holding Furnace No. 7	21	5.5 lb/MMscf	Natural Gas Combusted	AP-42
	Melting Furnace No. 9	57	0.032 lb/ton	Aluminum Throughput	2002 Stack Test
	Holding Furnace No. 10	57	0.04 lb/ton	Aluminum Throughput	2002 Stack Test
	Melting Furnace No. 11	57	0.032 lb/ton	Aluminum Throughput	2002 Stack Test
	Holding Furnace No. 12	57	0.04 lb/ton	Aluminum Throughput	2002 Stack Test
North Ingot	Melting Furnace No. 23	112	0.05 lb/ton	Aluminum Throughput	2006 Stack Test
	Melting Furnace No. 24	112	0.05 lb/ton	Aluminum Throughput	2006 Stack Test
	Melting Furnace No. 25	112	5.5 lb/MMscf	Natural Gas Combusted	AP-42
	Melting Furnace No. 26	112	0.05 lb/ton	Aluminum Throughput	2006 Stack Test
	4 North Holding Furnace	112	5.5 lb/MMscf	Natural Gas Combusted	AP-42
	4 South Holding Furnace	112	5.5 lb/MMscf	Natural Gas Combusted	AP-42
Hot Line	Preheat Furnaces	108	5.5 lb/MMscf	Natural Gas Combusted	AP-42
	120" Mill	106	0.056 lb/ton	Aluminum Throughput	2023 Stack Test Data ¹
	120" Oil House	106	0.03 lb/ton	Aluminum Throughput	Material Balance
	96" Mill	106	0.108 lb/ton	Aluminum Throughput	2023 Stack Test Data ¹
	96" Oil House	106	0.04 lb/ton	Aluminum Throughput	Material Balance
	80" Mill	106	0.680 lb/ton	Aluminum Throughput	2023 Stack Test Data ¹
	80" Oil House	106	0.04 lb/ton	Aluminum Throughput	Material Balance
	120" Mill Process Heater	106	5.5 lb/MMscf	Natural Gas Combusted	AP-42
	96" Mill Process Heater	106	5.5 lb/MMscf	Natural Gas Combusted	AP-42
	80" Mill Process Heater	106	5.5 lb/MMscf	Natural Gas Combusted	AP-42
	Annealing Furnaces	109	5.5 lb/MMscf	Natural Gas Combusted	AP-42
Continuous Cold Mill (CCM)	CCM	105	0.41 lb/ton	Aluminum Throughput	2013 Stack Test
	CCM Oil House	105	0.027 lb/lb oil	Adjusted Make-up Oil	Material Balance
	CCM Welder	105	0.01 lb/weld	No. of Welds	1994 Stack Test
	CCM Process Heater	105	5.5 lb/MMscf	Natural Gas Combusted	AP-42
Automotive	Tandem Cold Mill	100	0.138 lb/ton	Aluminum Throughput	2015 Stack Test
	Continuous Heat Treat Furnace	100	5.5 lb/MMscf	Natural Gas Combusted	AP-42
	Trim Line #1 Lubricant Sprayer	100	Material VOC content lb/gal	Lubricant Applied	Material Balance, with current maximum VOC content for lubricant at 2.67 lb/gal

	Trim Line #2 Lubricant Sprayer	127 - ok August 30, 2023	Material VOC content	lb/gal	Lubricant Applied	Material Balance, with current maximum VOC content for lubricant at 2.67 lb/gal
Wastewater Treatment Plant (WWTP)	WWTP Boiler	125	5.5	lb/MMscf	Natural Gas Combusted	AP-42
Insignificant Activities			84.88	TPY		

¹ Emission factors are based on results from performance testing of April 10-18, 2023, acknowledged in APC October 3, 2023, letter

Regarding VOC emissions from startups, shutdowns, and malfunctions, Arconic does not anticipate any increased or excess VOC emissions from the emission units listed during these periods given the nature of the associated production activities. All of the VOC emission units in question operate essentially in an on/off mode meaning the emissions do not fluctuate significantly during periods of startup, shutdown, or malfunction.

Monthly VOC Emissions from Facility Emission Units

The permittee shall calculate the monthly VOC emissions from each emission unit from the table above using the emission factor and associated monitoring data as the example below shows:

Month / Year	Emission Unit	Monitoring Data	Value	Emission Factor	VOC Emitted (tons)
11/20XX	Delac #3	Aluminum Throughput	9000 tons	0.007 lb VOC / ton	0.0315
11/20XX	Holding Furnace #5	Natural Gas Combusted	4.8 MM scf	5.5 lb VOC / MM scf	0.0132
11/20XX	Etc.				
11/20XX				Total	

At Attachment 2 of this permit, Compliance Assurance Monitoring (CAM) Plan addresses emission factors for 80” Hot Mill, 96” Hot Mill, and 120” Hot Mill, Continuous Cold Mill and Tandem Cold Mill.

Twelve Month Summary of Facility VOC Emissions

The permittee shall use calculated monthly VOC emissions from the table above in the following table to calculate the 12-month summary of VOC emissions:

Month / Year	Total VOCs from Emission Units (table above)	Monthly VOC emissions from Insignificant Sources	Facility Monthly VOC Emissions (including Insignificant Source Emissions)	12-Month Summary of VOC Emissions (current month plus the previous 11 months)
11/20XX		7.07		
12/20XX		7.07		
01/20XX		7.07		

3. Emission calculations for compliance purposes must include emissions from start-ups, shutdowns, and malfunctions.

TAPCR 1200-03-09-.01(5)(b)10(vii)(IV)

Arconic has stated that they do not anticipate any increased or excess VOC emissions from the emission units listed during these periods given the nature of the associated production activities. All of the VOC emission units in question operate in essentially an “on/off” mode meaning the emissions do not fluctuate significantly during periods of startup, shutdown, or malfunction.

- 4. Reserved

Modifications or Changes

- 5. Any physical change in or change in the method of operation of a major stationary source that maintains its plant-wide emissions below the PAL level, meets the requirements in TAPCR 1200-03-09-.01(5)(b)10(i) through (xv), and complies with this permit:
 - (a) Is not a major modification, as defined in TAPCR 1200-03-09-.01(5)(b)1(v) for the PAL pollutant
 - (b) Does not have to be approved through the major NSR program; and
 - (c) Is not subject to the provisions in TAPCR 1200-03-09-.01(5)(b)2(ix) (restrictions on relaxing enforceable emission limitations that the major stationary source used to avoid applicability of the major NSR program).
- 6. The permittee shall process all Title V changes according to the requirements of Section C in all active Title V permits. The Technical Secretary shall be notified within 14 days of a change not requiring a Title V notification but that is a change that may affect the PAL permit. The notification shall be submitted to the Technical Secretary at the address below.

Tennessee Dept. of Environment & Conservation
 Division of Air Pollution Control
 Permitting Program
 William R. Snodgrass TN Tower, 15th Floor
 312 Rosa L. Parks Avenue
 Nashville, TN 37243

Adobe Portable Document Format (PDF)
 or Copy to: Air.Pollution.Control@TN.gov

Monitoring Requirements

- 7. The permittee (major stationary source owner or operator) shall monitor all emissions units in accordance with the following:

The monitoring systems employ the use of mass balance and emission factors. The mass balance is based on the VOC concentration as published in the current MSDS or the manufacturer’s product formulation sheet.

The permittee shall monitor:

The amount of aluminum produced, the amount of natural gas consumed, CAM requirements specified at Attachment 2 and any other parameters needed to determine VOC emissions during each month as required by condition 2.

Administrative Amendment #2 to Permit 576488 includes PM10 Compliance Assurance Monitoring (CAM) Requirements for the following sources at North Plant Fabrication, Support, & Remediation Facility:

Description	Control (VOC/PM)	Source 05-0008
Continuous Cold Mill	Horizontal Separators Cyclonic	105
Hot Line 80", 96" and 120" Mills	Horizontal Separators Cyclonic	106
Tandem Cold Mill/ Automotive Sheet	Airwash Oil Separator	100

The primary purpose of the horizontal cyclonic separators and SMS airwash control devices is to capture PM-10 emissions which consist of oil-based particulate matter droplets. These control devices have the additional effect of reducing VOC emissions due to the removal of oil-based droplets. Therefore, in the September 14, 2023, submittal of additional information for the PAL Permit Application, Arconic has requested the utilization of the Compliance Assurance Monitoring (CAM) Plan as found in Title V Operating Permit 576488 to verify the validity of the controlled VOC emissions factors for the Hot Line 120" Mill, Hot Line 120" Mill, Hot Line 120" Mill, Continuous Cold Mill, and Tandem Cold Mill that are based on performance testing. The Appendix C CAM plan from Administrative Amendment #2 to Permit 576488 is therefore included as Attachment #2 to this PAL permit.

Monitoring shall be conducted in accordance with:

TAPCR 1200-03-09-.01(5)(b)10(vii)(VII) and TAPCR 1200-03-09-.01(5)(b)10(xii)

- 8. The permittee (source owner or operator) must record and report maximum potential emissions without considering enforceable emission limitations or operational restrictions for an emissions unit during any period of time that there is no monitoring data, unless another method for determining emissions during such periods is specified in this permit.

TAPCR 1200-03-09-.01(5)(b)10(xii)(VII)

- 9. All data used to establish the PAL pollutant must be revalidated through performance testing or other scientifically valid means approved by the Technical Secretary. Such testing must occur at least once every 5 years after issuance of the PAL.

The Division has determined that the following units must be tested for VOC emissions at least once every 5 years after issuance of the PAL permit. The test report must be submitted to the Division within 60 days of the test date:

Source Description	Source ID 05-0008
Hot Line: 120" Mill	106
Hot Line: 96" Mill	106

Hot Line: 80" Mill	106
Continuous Cold Mill	105

Under the provisions of 40 CFR § 63.1511(e), a performance test must be conducted every 5 years following the initial performance test the Delacquering Furnaces #2 and #3 (Source 05-0008-27). This Subpart RRR-required test will fulfill the requirements of the PAL test requirement for these units.

The 5-year testing requirement will be waived for all other units that are using AP-42 emission factors, material balance emission factors from engineering calculations, and /or similar equipment emissions data.

The 5-year testing requirement will be waived for units classified as insignificant activities under TAPCR 1200-02-09-.04.

The Division reserves the right to require testing for any source as deemed necessary.

TAPCR 1200-03-09-.01(5)(b)10(xii)(IX)

Recordkeeping Requirements

- 10. The permittee must retain the records as identified below. Such records may be retained in an electronic format.
 - (a) The permittee (source owner or operator) must retain a copy of all records necessary to determine compliance with any requirement in TAPCR 1200-03-09-.01(5)(b)10 of this permit, including a determination of each emission unit's 12-month rolling total emissions, for 5 years from the date of such record.
 - (b) The permittee (source owner or operator) must retain a copy of the following records for the duration of the PAL effective period plus 5 years:
 - (i) A copy of the PAL permit application and any application for revisions to the PAL; and
 - (ii) Each annual certification of compliance pursuant to Title V and the data relied on in certifying the compliance.

TAPCR 1200-03-09-.01(5)(b)10(xiii) and 1200-03-09-.01(5)(b)10(vii)(VIII)

- 11. Record keeping requirements for this permit, including all data and calculations, must be updated and maintained based on the following schedule:

<u>Record Keeping Type</u>	<u>Update Requirement</u>
Monthly Log	Recorded within 30 days after the end of the month
Weekly Log	Recorded within 7 days after the end of the week

Daily Log

Recorded within 7 days after the end of the day

TAPCR 1200-03-09-.03(8)

Reporting and Notification Requirements

12. The permittee (source owner or operator) shall submit the reports as identified below by the required deadlines. The permittee (source owner or operator) shall submit semiannual monitoring reports and prompt deviation reports to the Technical Secretary in accordance with the applicable title V operating permit program. The reports shall meet the following requirements:

- (a) Semi-Annual Report The semi-annual report shall be submitted to the Technical Secretary within 30 days of the end of each reporting period. The reporting periods are December through May and June through November. This report shall contain the following information:
- (i) The identification of the permittee (owner and operator) and the permit number.
 - (ii) Total annual emissions (tons/year) based on a 12-month rolling total for each month in the reporting period recorded pursuant to condition 10.
 - (iii) All data relied upon, including, but not limited to, any Quality Assurance or Quality Control data, in calculating the monthly and annual PAL pollutant emissions.
 - (iv) A list of any emissions units modified or added to the major stationary source during the preceding 6-month period.
 - (v) The number, duration, and cause of any deviations or monitoring malfunctions (other than the time associated with zero and span calibration checks), and any corrective actions taken.
 - (vi) A notification of a shutdown of any monitoring system, whether the shutdown was permanent or temporary, the reason for the shutdown, the anticipated date that the monitoring system will be fully operational or replaced with another monitoring system, and whether the emissions unit monitored by the monitoring system continued to operate, and the calculation of the emissions of the pollutant or the number determined by the method included in this permit, as provided by condition 8
 - (vii) A signed statement by the responsible official (as defined by the applicable title V operating permit program) certifying the truth, accuracy, and completeness of the information provided in the report.
- (b) Deviation Report The permittee (major stationary owner or operator) shall promptly submit reports of any deviation or exceedance of the PAL requirements, including periods where no monitoring is available. A report submitted pursuant to TAPCR 1200-03-09-.02(11)(e)1(iii)(III) shall satisfy this reporting requirement. The deviation reports shall be submitted within the time limits prescribed in TAPCR 1200-03-09-.02(11)(e)1(iii)(III). The reports shall contain the following information:
- (i) The identification of the permittee (source owner and operator) and the permit number;
 - (ii) The PAL requirement that experienced the deviation or that was exceeded;
 - (iii) Emissions resulting from the deviation or the exceedance; and

- (iv) A signed statement by the responsible official (as defined by the applicable title V operating permit program) certifying the truth, accuracy, and completeness of the information provided in the report.
- (c) Re-validation Results The permittee (source owner or operator) shall submit to the Technical Secretary the results of any re-validation test or method within 3 months after completion of such test or method.

TAPCR 1200-03-09-.01(5)(b)10(vii)(IX) and TAPCR 1200-03-09-.01(5)(b)10(xiv)

13. PAL Permit Effective Period

This PAL permit is effective as of ***, 2024 and expires on ***, 2034.

TAPCR 1200-03-09-.01(5)(b)10(vii)(II)

PAL Renewal

- 14. If the permittee applies to renew a PAL in accordance with 1200-03-09-.01(5)(b)10(x) before the end of the PAL effective period, then the PAL shall not expire at the end of the PAL effective period. It shall remain in effect until a revised PAL permit is issued by the Technical Secretary.

TAPCR 1200-03-09-.01(5)(b)10(vii)(III)

Expiration of PAL

- 15. If the PAL is not renewed in accordance with the procedures in TAPCR 1200-03-09-.01(5)(b)10(x), it shall expire at the end of the PAL effective period and the permittee (major stationary source) is subject to the following requirements:

- (a) Each emissions unit (or each group of emissions units) that existed under the PAL shall comply with an allowable emission limitation under a revised permit established according to the procedures in (i) and (ii) below.
 - (i) The permittee (major stationary source) shall submit no earlier than 18 months or at least 6 months prior to the expiration date of this permit a proposed allowable emission limitation for each emissions unit (or each group of emissions units, if such a distribution is more appropriate as decided by the Technical Secretary) by distributing the PAL allowable emissions for the major stationary source among each of the emissions units that existed under the PAL. If the PAL had not yet been adjusted for an applicable requirement that become effective during the PAL effective period, as required under subpart 1200-03-09-.01(5)(b)10(x), such distribution shall be made as if the PAL had been adjusted.

- (ii) The Technical Secretary shall decide whether and how the PAL allowable emissions will be distributed and issue a revised permit incorporating allowable limits for each emission unit, or each group of emission units, as the Technical Secretary determines is appropriate.
- (b) Each emission unit(s) shall comply with the allowable emission limitation on a 12-month rolling basis. The Technical Secretary may approve the use of monitoring systems (source testing, emission factors, etc.) other than CEMS, CERMS, PEMS or CPMS to demonstrate compliance with the allowable emission limitation.
- (c) Until the Technical Secretary issues the revised permit incorporating allowable limits for each emission unit, or each group of emissions units, as required in TAPCR 1200-03-09-.01(5)(b)10(ix)(I)I, the source shall continue to comply with a source-wide, multi-unit emissions cap equivalent to the level of the PAL emission limitation.
- (d) Any physical change or change in the method of operation at the major stationary source will be subject to the major source NSR requirements if such change meets the definition of major modification in TAPCR 1200-03-09-.01(5)(b)1(v).
- (e) The permittee (major stationary source owner or operator) shall continue to comply with any State or Federal applicable requirements (BACT, RACT, NSPS, etc.) that may have applied either during the PAL effective period or prior to the PAL effective period except for those emission limitations that had been established pursuant to TAPCR 1200-03-09-.01(5)(b)2(ix), but were eliminated by the PAL in accordance with the provisions in 1200-03-09-.01(5)(b)10(i)(III)III.

TAPCR 1200-03-09-.01(5)(b)10(vii) and (ix)

Additional Requirements for PAL Permit

- 16.** The permittee shall comply with any other requirements the Technical Secretary deems necessary to implement and enforce the PAL permit.

TAPCR 1200-03-09-.01(5)(b)10(vii)

- 17.** VOC and NO_x Reporting

The owner or operator of any facility in Davidson, Rutherford, Shelby, Sumner, Knox, Blount, Anderson, Williamson, or Wilson County which has potential emissions from stationary sources of 25 tons or more of volatile organic compounds (VOCs) and/or nitrogen oxides (NO_x) during a calendar year shall report to the Technical Secretary the information and data concerning these emissions.

The data in Attachment 3 of this permit shall be submitted before March 31 of the year following the calendar year for which the information and data is reported. The first report after issuance of this modification permit shall be for the 2024 calendar year and shall be submitted before March 31, 2025. If emissions of either or both pollutants are less than 25 tons, this shall be noted on the form.

The report shall be submitted to the Division at the address found at condition 6 of this permit.

TAPCR 1200-03-18-.02(8), 1200-03-27-.02(6), and 1200-03-09-.03(8)

END OF PERMIT 981350 CONDITIONS

ATTACHMENT 1
INSIGNIFICANT EMISSION UNITS
From Application dated September 14, 2023

Source	VOC (TPY)	Emissions Calculation Basis	Applicable Regulation
801 Nalco 23262 Tank	0.02	EPA Tanks	TAPCR 1200-03-09-.04(4)(a)
801 Nalco 7751 tank	0.02	EPA Tanks	TAPCR 1200-03-09-.04(4)(a)
806 Nalco 1802 Tank	0.02	EPA Tanks	TAPCR 1200-03-09-.04(4)(a)
806 Nalco 7200 Tank	0.02	EPA Tanks	TAPCR 1200-03-09-.04(4)(a)
810 Ingot Mold Lube Tank	0.20	Material Balance	TAPCR 1200-03-09-.04(4)(a)
814T Gearbox Lube Tank	0.58	Material Balance	TAPCR 1200-03-09-.04(4)(a)
828 Hydraulic Fluid Tank	0.02	Material Balance	TAPCR 1200-03-09-.04(4)(a)
828 Oil Tank	0.02	EPA Tanks	TAPCR 1200-03-09-.04(4)(a)
828 Oil Tank	0.02	EPA Tanks	TAPCR 1200-03-09-.04(4)(a)
841 Waste Oil Tank (3)	0.20	EPA Tanks	TAPCR 1200-03-09-.04(4)(a)
852 Hydraulic Oil Tank (3)	0.95	EPA Tanks	TAPCR 1200-03-09-.04(4)(a)
Aeresol Cans	1.93	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Bldg 807 Bench-Top Drill	0.03	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Bldg 807 Metal Band Saw	0.03	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Bldg 811 Neat Oil Tank (2)	0.46	EPA Tanks	TAPCR 1200-03-09-.04(4)(a)
Bldg 814b Metal Drill Press	0.03	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Bldg 817 Metal Band Saw	0.03	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Bldg 817B Metal Drill Press	0.11	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Bldg 821 Dirty Oil Tank	2.08	EPA Tanks	TAPCR 1200-03-09-.04(4)(a)
Bldg 821 New Base Oil	0.46	EPA Tanks	TAPCR 1200-03-09-.04(4)(a)
Bldg 821 Reprocessed Oil	1.89	EPA Tanks	TAPCR 1200-03-09-.04(4)(a)
Bldg 824 Diesel Tank	0.17	EPA Tanks	TAPCR 1200-03-09-.04(4)(a)
Bldg 841 Batch Tanks (WWTF) (5)	0.33	EPA Tanks	TAPCR 1200-03-09-.04(4)(a)
Bldg 841 Cooker Tanks (2)	0.13	EPA Tanks	TAPCR 1200-03-09-.04(4)(a)
Bldg 841 Sludge Tanks (WWTF)(2)	0.13	EPA Tanks	TAPCR 1200-03-09-.04(4)(a)
Bldg 850 Metal Drill Press	0.03	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Bldg 850a Metal Band Saw	0.03	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Bldg 850a Metal Drill Press	0.03	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Bldg 852a Metal Bandsaw	0.03	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Bldg 852a Metal Drill Press	0.03	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Bldg 852D Rolling Oil Tank (2)	0.91	EPA Tanks	TAPCR 1200-03-09-.04(4)(a)
Bldg 853C Kerosene	0.22	EPA Tanks	TAPCR 1200-03-09-.04(4)(a)
Bldg 853C Neat Oil	0.69	EPA Tanks	TAPCR 1200-03-09-.04(4)(a)

Bldg 854 Drill Press	0.03	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Bldg 854 Kalamzoo Bandsaw	0.03	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Bldg 854 Rockwell Metal Drill Press	0.03	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Bldg 855 3Metal Drill Presses	0.08	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Bldg 858 Diesel	0.04	EPA Tanks	TAPCR 1200-03-09-.04(4)(a)
Bldg 858 Gasoline	0.69	EPA Tanks	TAPCR 1200-03-09-.04(4)(a)
Bldg 858 Kerosene	0.04	EPA Tanks	TAPCR 1200-03-09-.04(4)(a)
Bldg 858 Metal Drill Press	0.03	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Bldg 870 Metal Drill Press	0.03	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Cast Aluminum Cooling Water Steam Vent	1.15	Material Balance	TAPCR 1200-03-09-.04(4)(a)
CCM Vacuum Distillation Unit	0.06	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Combustion Units (Comfort Heating)	3.45	BTU Rating	TAPCR 1200-03-09-.04(4)(a)
Hotsy Pressure Washer, 814j	0.01	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Hotsy Pressure Washer, 817a	1.41	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Hotsy Pressure Washer, 853	0.01	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Hotsy Pressure Washer, 854	0.01	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Hotsy Pressure Washer, 858	0.01	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Hydraulic Shop Honing Machine	0.74	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Janitorial Supplies	3.00	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Metal Lathe (5)	0.14	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Mobile Sources (vehicles)	3.33	Material Balance	TAPCR 1200-03-09-.04(4)(a)
NDT Laboratory	0.27	Material Balance	TAPCR 1200-03-09-.04(4)(a)
NP Combined Remediation	0.01	Material Balance	TAPCR 1200-03-09-.04(4)(a)
NP Herbicide/Pesticide Application	0.52	Material Balance	TAPCR 1200-03-09-.04(4)(a)
NP Impoundments & Outfalls	0.003	Material Balance	TAPCR 1200-03-09-.04(4)(a)
NP Landfills	0.03	Material Balance	TAPCR 1200-03-09-.04(4)(a)
NP Project Coating	0.35	Material Balance	TAPCR 1200-03-09-.04(4)(a)
NP Skim Pan Lube	1.15	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Office Supplies	0.34	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Outfall 007 Skimmed Oil	0.21	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Parts Washers (22)	1.69	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Plastic Envelope - Ingot Identification	0.19	Material Balance	TAPCR 1200-03-09-.04(4)(a)

Refrigerent	1.10	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Reprographics	0.62	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Restroom Supplies	0.63	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Roll Grinder	2.49	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Siegen Roll Grinder (3)	7.48	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Truck Shop	1.63	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Waste Vehicle Fluid Tank	0.02	EPA Tanks	TAPCR 1200-03-09-.04(4)(a)
WWTF Sump	0.16	EPA Tanks	TAPCR 1200-03-09-.04(4)(a)
WWTP Equalization Tank	0.07	EPA Tanks	TAPCR 1200-03-09-.04(4)(a)
Shoe Lubricant - Pusher Preheat	0.72	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Biopit CHT	3.05	Material Balance	TAPCR 1200-03-09-.04(4)(a)
New Coolant House Rolling Oil Blowdown Tank	0.19	Material Balance	TAPCR 1200-03-09-.04(4)(a)
TCM Emergency Fire Pump Engine ¹	0.32	Engine hp and 500 hr/year	TAPCR 1200-03-09-.04(4)(a)
Slitter 051	1.32	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Trim Line Leveler No. 1	3.32	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Trim Line Leveler No. 2	3.32	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Trim Line Solvent Distillation Skid	0.04	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Motor Vehicles	0.22	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Comfort Heating	0.003	Burner Rating	TAPCR 1200-03-09-.04(4)(a)
84 Diesel	0.11	EPA Tanks	TAPCR 1200-03-09-.04(4)(a)
84 Diesel	0.11	EPA Tanks	TAPCR 1200-03-09-.04(4)(a)
84 Gasoline	0.72	EPA Tanks	TAPCR 1200-03-09-.04(4)(a)
SP NDT Lab	0.27	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Project Coating	0.35	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Herbicide/ Pesticide Application	0.82	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Janitorial	2.46	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Restroom	0.76	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Truck Shop	1.63	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Drill Press	0.03	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Bandsaw	0.03	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Lathe (7)	2.25	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Precision Grinder	0.32	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Drill Press	0.03	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Bandsaw	0.03	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Magnum 443 Steam Cleaner (2)	0.03	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Hotsy Steam Cleaner (2)	0.33	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Diesel Arc Welder	0.32	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Aerosol Cans & Misc. Chemicals	1.93	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Parts Washers (6)	2.31	Material Balance	TAPCR 1200-03-09-.04(4)(a)

Office Equipment	0.34	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Impoundments & Outfalls	0.001	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Landfills	0.00011	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Refrigerant	1.10	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Cast Aluminum Steam Vent (2)	0.85	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Crucible Preheater	0.04	Burner Rating	TAPCR 1200-03-09-.04(4)(a)
Boiler	0.12	Material Balance	TAPCR 1200-03-09-.04(4)(a)
SP Bath House Boiler #1	0.01	Material Balance	TAPCR 1200-03-09-.04(4)(a)
SP Bath House Boiler #2	0.01	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Mold Line Lube	0.81	Material Balance	TAPCR 1200-03-09-.04(4)(a)
CR Skim Pan Lube	4.05	Material Balance	TAPCR 1200-03-09-.04(4)(a)
Tapoco Transformers (2)	0.59	Material Balance	TAPCR 1200-03-09-.04(4)(a)
88 Misc Burners	0.15	Burner Rating	TAPCR 1200-03-09-.04(4)(a)
31 Waste Oil (3)	0.41	EPA Tanks	TAPCR 1200-03-09-.04(4)(a)
31 Waste Oil (poly) (2)	0.06	EPA Tanks	TAPCR 1200-03-09-.04(4)(a)
86 Nalco Chemicals	3.91	EPA Tanks	TAPCR 1200-03-09-.04(4)(a)
14 Basement Sump	0.02	EPA Tanks	TAPCR 1200-03-09-.04(4)(a)
Total:	84.88		

¹ Requesting the TCM Emergency Fire Pump Engine be listed as an Insignificant Emission Unit

ATTACHMENT 2

**COMPLIANCE ASSURANCE MONITORING PLAN FOR
PARTICULATE MATTER (PM) 10 EMISSIONS FROM
FABRICATION ADAPTED FOR VOC EMISSIONS**

DATE: August 26, 2020

From Administrative Amendment #3 to Permit 576488

References to PM-10 Emissions are considered to be valid for VOC

Compliance Assurance Monitoring Plan for PM-10 Emissions from Fabrication



ARCONIC

Tennessee Operations

Fabrication

ENV-223

Document Manager: C. Newman

Prepared By:

**Arconic Tennessee LLC
2300 North Wright Rd.
Alcoa, Tennessee 37701**

August 26, 2020

Note: This is considered an uncontrolled document unless it is being viewed on-line from the Tennessee Operations Environmental Homepage.

Arconic Tennessee LLC
Compliance Assurance Monitoring Plan
Area: Fabrication

Original Issue Date: 3/31/08
Revision Date: 8/26/2020
Controlled Document

CAM Plan Revision History

Plan Description	Prepared By	Date	Approved By	Date
Original Plan	Chris Moore	3/31/08	Malcolm Murphy	3/31/08
Revision 1	Chris Moore	4/18/08	Chris Jackson	4/18/08
Revision 2	Chris Moore	9/3/09	Chris Jackson	9/3/09
Revision 3	Chris Moore	9/20/11	Chris Jackson	10/10/11
Revision 4	Alisa Hatmaker	2/8/16	Ken A. McMillen	2/8/16
Revision 5	Alisa Hatmaker	11/16/16	Jeffrey C. Weida	11/16/16
Revision 6	Alisa Hatmaker	2/3/17	Jeffrey C. Weida	2/3/17
Revision 7	Caitlin Newman	8/26/20	Jeffrey C. Weida	8/26/20

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 - 1.1 Plant Description and Operation
 - 1.2 Applicable Requirements
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 - 2.4 Rationale for Performance Criteria
 - 2.4.1 Performance Indicators
 - 2.4.2 Performance indicator Ranges

1.0 INTRODUCTION

Compliance assurance monitoring (CAM) as codified in 40 CFR Part 64 is intended to provide a reasonable assurance of compliance with applicable requirements under the Clean Air Act (CAA) for large emission units that rely on pollution control device equipment to achieve compliance. Monitoring is conducted to determine that control measures, once installed or otherwise employed, are properly operated and maintained so that they continue to achieve a level of control that complies with applicable requirements. The CAM approach establishes monitoring for the purpose of:

1. Documenting continued operation of the control measures with ranges of specified indicators of performance that are designed to provide a reasonable assurance of compliance with applicable requirements;
2. Indicating any excursions from these ranges; and,
3. Responding to the data so that the cause or causes of the excursions are corrected.

The following sections of this CAM Plan address each of the above elements.

1.1 Plant Description and Operation

Fabrication includes the Hot Line, Continuous Cold Mill (CCM), Finishing, and Automotive Sheet production areas in the North Plant. In the Hot Line, aluminum ingots are prepared for rolling by scalping and preheating and then rolled in two hot reversing and one hot continuous mill. The CCM receives cooled coils from the hotline and consists of a Miebach welder that has a cyclone/wet collector for particulate control; an accumulator; and the CCM that consists of the cold mill, a coolant system, and horizontal cyclonic separators (2). Following the CCM, coils are trimmed and re-oiled in the Finishing area.

The automotive sheet production area receives cooled coils from the hotline and consists of three annealing furnaces, one continuous heat treat furnace (CHT), and one tandem cold mill (TCM). The TCM has an airwash oil separation (scrubber) for particulate control.

Affected emission units covered by this CAM plan are summarized in Table 1:

Table 1. Emission Units Subject to CAM Requirements

Emission Unit	Control Device Description	Source ID	Pollutant
Hot Line 120" Mill	120" Mill horizontal cyclonic separators (2)	05-0090-43	PM-10
Hot Line 96" Mill	120" Mill horizontal cyclonic separators (2)	05-0090-43	PM-10
Hot Line 80" Mill	80" Mill horizontal cyclonic separators (2)	05-0090-43	PM-10
CCM	Cold mill horizontal cyclonic separators (2)	05-0090-42	PM-10
TCM	Airwash oil separator (1)	05-0008-100	PM-10

1.2 Applicable Requirements

Applicable requirements that result in applicability of CAM are summarized in Table 2 below:

Table 2. Applicable Requirements Resulting in CAM Applicability

Emission Unit	Requirement	Basis	Compliance Methodology
Hot Line 80", 96", and 120" Mills	PM shall not exceed 61 pounds per hour	TAPCR 1200-3-7-.02(4)	1) Semi-annual maintenance inspections 2) Daily throughputs and established PM emission factors
CCM	PM shall not exceed 19.57 pounds per hour	TAPCR 1200-3-9-.01(4); Permit 742926P Condition 2	1)Semi-annual maintenance inspections 2)Daily fan pressure readings
TCM	PM shall not exceed 9.29 tons per 12-consecutive months	TAPCR 1200-3-9-.01(5); Permit 967461P Condition 2	1)Semi-annual maintenance inspections 2)Daily airwash coolant flow rate and established PM emission factors

1.3 Control Technology

The control technology utilized for the 96" Mill, 120" Mill, 80" Mill and the CCM is a high velocity, in-line oil mist eliminator specifically designed for rolling mills. The system separates liquid particles from the air stream and then removes the particles before re-entrainment. The stack configuration is designed to enable continued oil removal including a specially designed liquid skimmer at the stack exit prior to discharge.

The control technology utilized for the TCM is an oil scrubbing system. Exhaust from the mill is routed through a scrubber where coolant is utilized to remove organics and particulate matter from the exhaust stream. The collected material is reprocessed and reused in the system.

2.0 CAM PLAN ELEMENTS

2.1 Indicators to be Monitored (64.3(a)(1))

Indicators of emission control performance of the control device must be monitored to assure compliance with emission limitations or standards. The following indicators are to be monitored:

Emission Unit	Parameter
120" Mill	Cyclonic separator fan amperage
	Routine inspection and maintenance
96" Mill	Cyclonic separator fan amperage
	Routine inspection and maintenance
80" Mill	Cyclonic separator fan amperage
	Routine inspection and maintenance
CCM	Cyclonic separator fan pressure
	Routine inspection and maintenance
TCM	Airwash coolant flow rate
	Routine inspection and maintenance

2.2 Indicator Range (64.3(a)(2))

The indicator range for the emission unit will be as follows:

Emission Unit	Parameter	Indicator Range	Excursion Trigger
120" Mill	Fan Amperage	Alarm set point at 192 amps (65% of the nominal design flow) except during periods of mill start-up and shutdown	Failure to respond to amperage alarms
	Inspection/Maintenance Activities	Perform routine maintenance/inspections	Failure to perform routine preventative maintenance/inspections
96" Mill	Fan Amperage	Alarm set point at 192 amps (65% of the nominal design flow) except during periods of mill start-up and shutdown	Failure to respond to amperage alarms
	Inspection/Maintenance Activities	Perform routine maintenance/inspections	Failure to perform routine preventative maintenance/inspections
80" Mill	Fan Amperage	Alarm set point at 360 amps (65% of the nominal design flow) except during periods of mill start-up and shutdown	Failure to respond to amperage alarms
	Inspection/Maintenance Activities	Perform routine maintenance/inspections	Failure to perform routine preventative maintenance/inspections

Emission Unit	Parameter	Indicator Range	Excursion Trigger
CCM	Fan Pressure Drop	Alarm set point between 3 and 8 inches of water across the cyclone except during periods of mill start-up and shutdown	Failure to respond to alarms
	Inspection/Maintenance Activities	Perform routine maintenance/inspections	Failure to perform routine preventative maintenance/inspections
TCM	Airwash coolant flow rate	Alarm set point at 180 l/min (90% of the nominal design flow) except during periods of mill start-up and shutdown.	Failure to respond to coolant flow alarms
	Inspection/Maintenance Activities	Perform routine maintenance/inspections	Failure to perform routine preventative maintenance/inspections

2.3 Performance Criteria (64.3(b))

Performance criteria for each emission unit are summarized in Tables 1 and 2 below:

Table 1. Performance Criteria for the 80", 96", and 120" Mill Control Systems

Criteria	Parameter	Monitoring Requirement
Data Representativeness	Fan Amperage	Monitor average fan amperage during ingot or coil runs. When the alarm is triggered, action will be taken at the next available maintenance period to restore nominal flow. The alarms will appear on the 80", 96", and 120" Mill operator's screen. The alarms will only trigger if the mill is running to avoid false alarms during down periods.
	Inspection and maintenance	Proper operation of the cyclone system is verified visually by trained personnel using documented inspection and maintenance procedures. Repairs of deficiencies noted during the inspection process are made in a timely manner and documented.
QA/QC Practices	Fan amperage	Continuous recording of the fan amperage. Annual calibration is performed on the amperage meter per manufacturer recommendations. Calibration records shall be maintained for a period not less than 5 years.

Table 1. Performance Criteria for the 80", 96", and 120" Mill Control Systems

Criteria	Parameter	Monitoring Requirement
	Inspection and maintenance	Personnel are trained on inspection and maintenance procedures. Maintenance records are maintained on file.
Monitoring Frequency	Fan amperage	Continuous (when operating); alarm is based on average value during ingot or coil run
	Inspection and maintenance	s required

Table 2. Performance Criteria for the CCM Control System

Criteria	Parameter	Monitoring Requirement
Data Representativeness	Fan Pressure Drop	Monitor fan pressure drops during coil runs. When the alarm is triggered, action will be taken at the next available maintenance period to restore nominal flow. The alarms will appear on the mill operator's screen. The alarms will only trigger if the mill is running to avoid false alarms during down periods.
	Inspection and maintenance	Proper operation of the cyclone system is verified visually by trained personnel using documented inspection and maintenance procedures. Repairs of deficiencies noted during the inspection process are made in a timely manner and documented.
QA/QC Practices	Fan Pressure Drop	Continuous recording of the fan pressure drop. Annual calibration is performed on the pressure drop monitor in order to determine if adjustments are needed. Calibration records shall be maintained for a period not less than 5 years.
	Inspection and maintenance	Personnel are trained on inspection and maintenance procedures. Maintenance records are maintained on file.
Monitoring Frequency	Fan Pressure Drop	Continuous (when operating)
	Inspection and maintenance	As required

Table 3. Performance Criteria for the TCM Control System

Criteria	Parameter	Monitoring Requirement
Data Representativeness	Coolant Flow Rate	Monitor flow rate during coil runs. When the alarm is triggered, action will be taken at the next available maintenance period to restore nominal flow. The alarms will appear on the TCM Mill operator's screen.
	Inspection and maintenance	Proper operation of the airwash system is verified visually by trained personnel using documented inspection and maintenance procedures. Repairs of deficiencies noted during the preventative maintenance (PM) inspection process are made in a timely manner and documented. Records shall be maintained for a period not less than 5 years.
QA/QC Practices	Coolant Flow Rate	Continuous recording of the coolant flow rate. A PM inspection is performed on the coolant flow pump. Repairs of deficiencies noted during the PM inspection process are made in a timely manner and documented records shall be maintained for a period not less than 5 years.
	Inspection and maintenance	Personnel are trained on inspection and maintenance procedures. Maintenance records are maintained on file.
Monitoring Frequency	Coolant Flow Rate	Continuous (when operating); Instantaneous value during coil run.
	Inspection and maintenance	As required.

2.4 Rationale for Performance Criteria (64.4(b))

2.4.1 Performance Indicators

80", 96" and 120" Mills

Proper operation of the cyclonic separator systems is directly related to the volumetric flow rate produced by the exhaust fans. If the separators in the system accumulate debris, fire dampeners are closed, or flow is otherwise restricted, the volume moved by the fans will decrease. The resulting decrease in flow is detected as a drop in horsepower at the fan motors.

Documented inspections are used to identify potential leaks and equipment problems that may affect the system's capture efficiency. A documented maintenance program ensures that any deficiencies noted during the inspection process are repaired in a timely fashion.

CCM

Although the 80" Mill, 96" Mill, 120" Mill and CCM cyclonic separator systems are similar in operations, the nature of the rolling activities are significantly different from an emissions standpoint. Coolant usage is much lower in the CCM and buildup on exhaust fans for the CCM is much less of an issue. In that regard, an alternative methodology for the CCM is necessary. Indicators of problems with the CCM is insufficient fan circulation and buildup of oil inside the stack. Low pressure readings indicate there are problems with the fan's circulation equipment allowing for improper exhaust emissions removal. High pressure readings indicate the exhaust stack may be plugged allowing for improper fan circulation and exhaust emissions removal.

Documented inspections are used to identify potential leaks and equipment problems that may affect the system's capture efficiency. A documented maintenance program ensures that any deficiencies noted during the inspection process are repaired in a timely fashion.

TCM

The nature of the rolling activities for the TCM are significantly different from an emissions standpoint than the 80" Mill, 96" Mill, 120" Mill and CCM cyclonic separator systems. Buildup on exhaust ductwork and fans for the TCM is much less of an issue than the 80" Mill, 96" Mill, 120" Mill, and CCM. In that regard, an alternative methodology for the TCM was necessary. A primary indicator of problems with the TCM is significantly lower coolant flow through the airwash system. The coolant is designed to remove the particulate matter and organics from the exhaust stream. A primary indicator of a problem with the airwash control system is low coolant flow. Some lower levels are normal, however, significantly lower flow below the nominal design indicates additional actions may be required.

Documented inspections are used to identify potential leaks and equipment problems that may affect the system's capture efficiency and the coolant flow pump. A documented maintenance program ensures that any deficiencies noted during the inspection process are repaired in a timely fashion.

2.4.2 Performance Indicator Ranges

80", 96", and 120" Mills

Using an amperage reading and the fan curve for the separator fans, horsepower will be calculated and utilized to determine the volumetric flow rate through the system. Each fan will have an alarm point set at 360 amps (80" Mill) and 192 amps (96" Mill and 120" Mill). Amperage readings below the alarm value indicate the potential presence of a problem or upset condition that requires investigation and are treated as potential excursions. Upon completion of investigation, verified excursions will be reported to the TDAPC in required semi-annual reports and annual compliance certifications.

CCM

Using a standard pressure drop gauge, pressure drops will be recorded and utilized to indicate the presence of a potential problem with the control system or upset condition that requires investigation. Pressure drop readings below or above the alarm set points of 3 and 8 inches indicate the potential presence of a problem or upset condition that requires investigation and are treated as potential excursions. Upon completion of investigation, verified excursions will be reported to the TDAPC in required semi-annual reports and annual compliance certifications.

TCM

The coolant flow pump will be used to determine flow rate through the system by calculating flow based on pump speed. The meter will have an alarm point set at 180 l/min. Readings below the alarm value indicate the potential presence of a problem or upset condition that requires investigation and are treated as potential excursions. Upon completion of investigation, verified excursions will be reported to the TDAPC in required semi-annual reports and annual compliance certifications.

ATTACHMENT 3
Emission Statement for VOC and NOX

Emission Statement for VOC and NO_x

Facility (Permittee): Arconic Tennessee LLC

Facility ID: 05-0008

Calendar Year: _____

TOTAL CALENDAR YEAR ACTUAL EMISSIONS:

- a) If either amount is 25 tons or greater, enter the amounts of both pollutants; or
- b) If the amount of each pollutant is less than 25 tons, please enter 'L. T. 25'.

VOC _____ Tons

NO_x _____ Tons

As the Responsible Person of the above mentioned facility (permittee), I certify that the above information concerning VOC and NO_x emissions to be accurate and true to the best of my knowledge. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Signature		Date
Signer's name (print)	Title	Phone (with area code)