TITLE V PERMIT STATEMENT
Administrative Amendment 2

Facility Name: Heraeus Metal Processing. LLC (formerly Heraeus Precious Metals North America, LLC)
City: Wartburg
County: Morgan
Facility Number: 65-0049

Date Renewal Application Received: September 29, 2015
Date Application Deemed Complete: September 29, 2015

Emission Source Reference No.: 65-0049-00
Permit No.: 570857
Issued by: R. Benjamin

This narrative is being provided to assist the reader in understanding the content of the attached Title V operating permit. This Title V Permit Statement is written pursuant to Tennessee Air Pollution Control Rule 1200-03-09-.02(11)(f)1.(v). The primary purpose of the Title V operating permit is to consolidate and identify existing state and federal air requirements applicable to ***Heraeus Precious Metals North America, LLC,*** and to provide practical methods for determining compliance with these requirements. The following narrative is designed to accompany the Title V Operating Permit. It initially describes the facility receiving the permit, then the applicable requirements and their significance, and finally the compliance status with those applicable requirements. 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
NESHAP - National Emission Standards for Hazardous Air Pollutants
NSPS - New Source Performance Standards
MACT - Maximum Achievable Control Technology
NSR - New Source Review

I. Identification Information

A. Source Description

List and describe emission source(s): **65-0049 - Heraeus Precious Metals North America, *LLC***

Precious metal reclamation facility:

65-0049-01(MM4,AA1): Eight (8) roasting ovens, one (1) chamber furnace, and one burning chamber.
65-0049-04: Five (5) ball mills.
65-0049-06: Crucible Furnace and two (2) induction furnaces.
65-0049-09(MM4): Rotary Furnace.
65-0049-11: Emergency Generator.
65-0049-12(MM1): Six (6) electric melting furnaces, eight (8) cooling chambers, two (2) tray furnaces, three (3) auxiliary furnaces; and milling, polishing, and Kulzer operations.
65-0049-13(MM3): One (1) Rhodium-Oil Furnace with Baghouse Control.

Insignificant Activities

Insignificant activities are listed in the permit application and in Condition E3-7 of Title V Operating Permit number 570857.

B. Facility Classification

1. Attainment or Non-Attainment Area Location: *Area **is** designated as an **attainment** area for all criteria pollutants.*
2. Class I or Class II area: *Company **is** located in a **Class II** area.*

C. Regulatory Status

1. PSD/NSR: *This facility **is not** 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}	N/A	N/A	N/A
SO_2	Yes		X
VOC	Yes		X
NO_X	Yes		X
CO	Yes		X
Individual HAP	Yes		X
Total HAPs	Yes		X
CO_2e	Yes	N/A	X

3. MACT Standards: This facility **is not** a major source for HAPs. This facility **is** subject to a proposed or final MACT Standard. This has changed as a result of minor modification 1.
   List MACT Rule(s) if applicable: MACT Subpart ZZZZ

4. Program Applicability: Are the following programs applicable to the facility?
   PSD ***No***
   NESHAP ***Yes*** This has changed as a result of minor modification 1.
   NSPS ***Yes*** This has changed as a result of minor modification 1.

II. Compliance Information

A. Compliance Status:
Is the facility currently in compliance with all applicable requirements? ***yes***
If no, explain.

Are there any applicable requirements that will become effective during the permit term? ***no***
If yes, explain.

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 Applicable**
D. The facility is not subject to major source GHGs requirements.

IV. Public Participation Procedures

Notification of this draft permit will be emailed to the following environmental agencies:
A. EPA
B. North Carolina
C. Knoxville Environmental Field Office
D. Knoxville/Knox Co. Dept. of Air Quality Mgt.

V. Permit History

A. April 19, 2017, Minor Modification 1 to Title V 570857

65-0049-12(MM1): This source is similar to source -01, except that VOC emissions are controlled by a 400,000 BTU per hour afterburner and there is no scrubber control. One 43,000 CFM baghouse will control the building enclosure containing all the new operations. The CAM plan includes the VOC emissions from the afterburner, however, the baghouse is considered inherent to the process because the baghouse catch is recycled to the process to enable process cost recovery.

This source has a CAM plan. Permittee has proposed updated revisions to the current CAM Plan. The revised CAM Plan after approval by the TDEC Director will be incorporated into the T5 renewal Permit.

An internal audit by APC found several textural and formatting errors in the previously issued operating permit that have been corrected in this modification. Inaccurate information on AEAR reporting has been corrected under this modification. It has been determined that this AEAR correction in Section E1is a State requirement and not subject to EPA review.

B. November 14, 2017, Minor Modification 2 to Title V Permit 570857

65-0049-04, 06 and 09: The permittee states in a letter dated May 22, 2017 that the baghouses for these sources serve as process material collectors and are considered inherent process equipment. Therefore, these collectors are removed from the CAM plan.

C. February 22, 2019, Minor Modification 3 to Title V Permit 570857

Title V Shell Section D –Sections D11 to D14 have been included in this modification.

65-01149-12: One (1) auxiliary furnace was moved to source 65-0049-13. This furnace is to process rhodium, a precious metal from spent catalytic converters. This source's afterburner was tested and included the furnace that was moved to source 65-0049-13, a 0.15 mmBTU/hr furnace.

65-01149-13: One auxiliary furnace of 0.15 mmBTU/hr will "evaporate" and collect rhodium contained in a mixture of solvents consisting primarily of toluene. The facility operator assumes that all the HAPs emissions are toluene and that all the input material is VOC emissions. The SDS for the recovery of rhodium from the catalytic spent converters indicates that HAPs emissions are 80% of the VOC emissions. With these assumptions, this source will emit 12.25 tons VOC per year and 9.8 tons per year HAPs. The facility agrees to a limit of 9.9 and 24.9 tons HAPs per year for the facility.

D. January 16, 2020, Minor Modification 4 to Title V Permit 570857

65-0049-01:MM4. Source Identification: Eight Roasting Ovens – each are natural gas fired and rated at 1.5 MMBtu/hr. One chamber furnace and one burning chamber that are natural gas fired and rated at 1.5 MMBtu/hr controlled by two (2) afterburners (8.0 MMBtu/hr each), one quench tank, and one packed tower scrubber. Cooling Chambers and electric reburn furnace with 14,000 cfm baghouse for control.

65-0049-01: E4-1(MM4). The total stated heat input capacity for this source is 31.0 million British Thermal Units per hour (MMBtu/hr), which includes 8 ovens, chamber furnace, burning chamber, and 2 afterburners.

65-0049-01: E4-4(MM4.) Within thirty (30) days of issuance of this permit, the permittee shall begin measuring the pressure drop across the baghouse controlling emissions from cooling chambers and reburn furnace. The pressure drop across the baghouse shall be measured and recorded once daily while the associated equipment is in operation; days when the source is not in operation shall be noted. Thirty (30) days of pressure drop (inches of water column) readings for the baghouse shall be compiled and submitted to the Division, along with a proposed minimum pressure drop across the baghouse, no later than 15 days following the 30 days of readings. Any relevant baghouse conditions/problems/concerns shall be noted when recording the values. The minimum pressure drop value for compliance assurance will be incorporated into the operating permit.

After incorporation of the minimum pressure drop values into the operating permit, compliance with the respective particulate matter emission (PM) limit shall be assured by maintaining the required minimum pressure drop across the associated baghouse.

For lower pressure drop reading(s) resulting from replacement of bags, the permittee shall record the deviation(s) as such in their daily records. Due allowance will be made for lower pressure drop reading(s) which follow replacement of bags provided the permittee establishes to the satisfaction of the Technical Secretary that these lower readings resulted from the replacement of bags.

65-0049-01: E4-6(MM4). Sulfur dioxide (SO_2) emitted from this source shall not exceed 0.02 lb/hr, on a daily average basis.

65-0049-01: E4-9(MM4). Visible emissions from this source shall not exhibit greater than ten percent (10%) opacity, except for (1) six-minute period in any one (1) hour period, and for no more than four (4) six-minute periods in any twenty-four (24) hour period. Visible emissions from this source shall be determined by EPA Method 9, as published in the current 40 CFR 60, Appendix A (six-minute average).

65-0049-09: E7-4(MM4). Baghouse minimum pressure drop value will be 0.5 inches of water column

E. Administrative Amendment 1 to Title V Permit 570857 – Request Letter dated February 6, 2020

Updated Condition E1 and added Attachment 3 (Title V Fee Selection form APC 36)

65-0049-01: E4-4(MM4, AA1). Baghouse minimum pressure drop value will be 0.5 inches of water column.

F. Administrative Amendment 2 to Title V Permit 570857 – Request Letter dated November 24, 2020

The company stated that they were installing a Wet Scrubber following the existing Rhodium Recovery Furnace. This scrubber (which is actually a rhodium particulate recovery unit) would precede the existing cyclone and the existing baghouse, and would provide more efficient product recovery.

It was noted that the current permit, Administrative Amendment 1 to Permit 570857, issued April 9, 2020, states as follows:

E13-3(MM3). Raw Material Input Limit The total raw material input to this source shall not exceed 12.25 tons during any period of twelve (12) consecutive months. TAPCR 1200-03-07-.07(2) and 1200-03-10-.02(2)(a) and agreement letter dated October 29, 2018.

In the November 24, 2020 application and letter, the permittee requested that the 12.25 tons per 12-month process rate as stated above in AA1 for **570857** should be revised to read 12.5 tons per 12-month process rate. The November 24, 2020 application cited the letter/application dated October 28, 2018 which requested a 12.5 tons annual process limit for this process, The October 18, 2018 application contained the following text concerning the new Rhodium Oil Furnace: "The new source will be limited to 12.5 tons annual material processed." This annual process limit was mis-stated in Minor Modification #3 issued February 22, 2019 as 12.25 tons and was carried forward to Administrative Amendment #1 issued April 9, 2020 at condition E13-3(MM3). As 12.25 tph was not the value requested by the permittee, and compliance does not depend on this value, new condition E13-3(AA2) correctly states 12.5 tons per year as the limiting process rate for source 65-0049-13.

Also, Administrative Amendment 1 to Permit 570857, issued April 9, 2020, states as follows:

E13-5(MM3). Volatile Organic Compounds Emission Limit

Volatile organic compounds (VOC) emitted from the Rhodium-Oil Furnace shall not exceed 12.25 tons during any period of twelve consecutive months.

However, the application dated October 29, 2018 requested a VOC emission limit of 12.5 tons per 12 months.

Revised Condition E13-5(AA3) corrects the 12.25 ton VOC limit to read as 12.5 tons of VOC emissions per 12consecutive months.

The permittee had commented that the existing furnace would improve process capacity from 50 lb/hr to 125 lb/hr/ However, it is noted that the current permit does not have a short-term process limit, and the current agreed allowable PM emission rate of 0.3 lb/hr will not change.. The allowable PM emission rate would otherwise be calculated as

$3.59\ (125/2000)^{0.62} =$ 0.64 lb/hr
1539 dscfm (60 min./hr) (0.02 gr/dscf) (1 lb/7000 gr) = 0.26 lb/hr
1539 dscfm (60 min./hr) (0.25 gr/dscf) (1 lb/7000 gr) = 3.29 lb/hr

Therefore, the change in process rate does not affect the current allowable emission rate of 0.3 lb/hr and a process rate limit is not required besides the current value (which is being corrected from 12.25 to 12.5 tons/ 12 months with this amendment)

With regard to the addition of the new (product recovery) scrubber, the Compliance Validation section was asked about this situation and it was suggested that there was no need to require a determination of the liquid (GPM) flow rate for the new scrubber. However, because the scrubber precedes the baghouse in the processing of the exhaust flow from the furnace, it was suggested that there should be a new pressure drop study for the baghouse, which is being added in to this permit at condition E13-4(AA2) .

January 15, 2021 Issue date for Administrative Amendment 2