

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection

A549650624

FACILITY: Precision Coatings, Inc.		SRN / ID: A5496
LOCATION: 8120 Goldie St., WALLED LAKE		DISTRICT: Southeast Michigan
CITY: WALLED LAKE		COUNTY: OAKLAND
CONTACT: Jason Smith, Manufacturing Manager		ACTIVITY DATE: 08/07/2019
STAFF: Kerry Kelly	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Evaluate Precision Coating's compliance with PTI 154-18 and State and Federal air quality rules and regulations.		
RESOLVED COMPLAINTS:		

On August 7, 2019, I (Kerry Kelly, EGLE) conducted an inspection of Precision Coatings, Inc. located at 8120 Goldie Street, Commerce Township, MI 48390-0155. The purpose of the inspection was to determine compliance with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994, PA 451; Michigan Department of and Environmental Quality, Air Quality Division (MDEQ-AQD) Administrative Rules; and Permit to Install (PTI) number 154-18.

Mr. Jason Smith, Precision Coatings, Materials Manager, assisted me during the inspection by providing records, answering questions, and showing me equipment. Mr. Joe Olszewski, Precision Coatings, Supervisor, joined Mr. Smith and me during the facility walk-through. According to Mr. Smith, Mr. Olszewski will be available to conduct future site walk throughs if he (Mr. Smith) is not available.

FACILITY INFORMATION

At Precision Coatings, polyester films, purchased from a supplier, are coated to create ink jet films, printing plates, reflective safety vests, window films, and other products.

Precision Coatings is located in central Oakland County, Michigan. The properties immediately surrounding Precision Coatings are commercial/industrial. There is a residential subdivision approximately one-tenth of a mile east of Precision Coatings. Middle Straights Lake and Lower Straights Lake are both located within six-tenths of a mile north of Precision Coatings.

National Emission Standards for Hazardous Air Pollutant (NESHAP)/Maximum Achievable Control Technolog (MACT) and the Once In Always In Policy (OIAI)

On May 16, 1995, the USEPA released a memorandum titled: Potential to Emit for MACT Standards -- Guidance on Timing Issues. This memo, also known as the Seitz Memorandum, provides guidance on the OIAI policy. According to the Seitz Memorandum; "facilities that are major sources for HAPs on the "first compliance date" are required to comply permanently with the MACT standard to ensure that maximum achievable reductions in toxic emissions are achieved and maintained."

The USEPA promulgated the NESHAP for Paper and Other Web Coating (40 CFR Part 63, Subpart JJJJ) on Dec. 4, 2002. 40 CFR 63 Subpart JJJJ applies to each new and existing facility that is a major source of hazardous air pollutants (HAP) at which web coating lines are operated. At the time of the first compliance date for 40 CFR Part 63, Subpart JJJJ (December 5, 2005), Precision Coatings was an existing major source of HAP that operated web coating lines and was, therefore, permanently subject to 40 CFR 63 Subpart JJJJ according to EPA guidance in the Seitz Memorandum. As a major source subject to 40 CFR Part 63, Subpart JJJJ, Precision Coatings was required to obtain a Title V/Renewable Operating Permit (ROP). The initial ROP for Precision Coatings was issued November 26, 2002. Precision Coatings' ROP was last renewed September 2, 2014.

On January 25, 2018, a memorandum signed by EPA Assistant Administrator William L. Wehrum, titled "Reclassification of Major Sources as Area Sources Under Section 112 of the Clean Air Act" states "the OIAI policy stated in the May 1995 Seitz Memorandum is withdrawn, effective immediately." This memo also states "EPA has now determined that a major source which takes an enforceable limit on its PTE and takes measures to bring its HAP emissions below the applicable threshold and becomes an area source, no matter when the source may choose to take measures to limit its PTE. That source, now having area source status, will not be subject thereafter to those requirements applicable to the source as a major source under CAA section 112, including, in particular, major source MACT standards – so long as the source's PTE remains below the applicable HAP thresholds."

On September 14, 2018, the AQD Permit Section received a PTI application (PTI 154-18) from Precision

Coatings. This application included requests to limit the source's PTE below major source thresholds and to void the source's ROP (MI-ROP-A5496-2014) following issuance of PTI 154-18. PTI 154-18 was approved January 29, 2019. MI-ROP-A5496-2014 was voided thereafter and Precision Coatings was no longer required to comply with 40 CFR 63, Subpart JJJJ per the "Reclassification of Major Sources as Area Sources Under Section 112 of the Clean Air Act" memo.

PTI 154-18

PTI 154-18 includes the following flexible groups (FG): FG-WEBCOATING and FG-FACILITY.

FG-WEBCOATING

FG-WEBCOATING consists of four web coating lines used to apply specialty resins dissolved in organic or waterborne solvents to a polyester film substrate. Each line is equipped with a natural gas-fired oven to cure the coatings. Emission units in FG-WEBCOATING are: Web Coating Line # 1 (EU-LINE1), Web Coating Line # 4 (EU-LINE4), Web Coating Line # 6 (EU-LINE6), and Web Coating Line # 8 (EU-LINE8). VOC and HAP emissions from each coating head and oven are captured using a Permanent Total Enclosure (PTE) and controlled by three Regenerative Thermal Oxidizers (RTOs) (REECO1, REECO2, and J.Zink).

During the inspection I observed that Precision Coatings is maintaining clean room standards for Coating Lines # 1 and # 4. Each coating room for Line #1 and Line #4 was at a higher pressure than the surroundings such as office space, plant space, etc. Each coating line has two coating heads. Coating head enclosures for each line are located within the coating room and are maintained at lower pressures than the coating room. Air flow is drawn from coating rooms to coating head enclosures and ovens. Emissions from EU-LINE1 are directed to REECO2 and emissions from EU-LINE4 and EU-LINE8 are routed to REECO1.

Line #6 has two coating heads. Emissions from the coating heads are drawn to the coating ovens and then to the J.Zink RTO.

Line #8 is a small, pilot line (~2 feet wide). The intended use of Line #8 was for research and development purposes.

Volatile Organic Compound (VOC) emissions from FG-WEBCOATING are limited to 84.0 tons per year based on a twelve-month rolling time period. Compliance with this limit per the PTI is demonstrated through recordkeeping listed in FG-WEBCOATING Special Condition (SC) VI.3. SC VI.3 requires records of the hours of operation of each coating line and RTO, the amount, in pounds or kilograms, of paint, coating, reducer, purge and clean-up solvents, VOC content of each material applied, and VOC mass emission calculations on a monthly and 12-month rolling time period. Mr. Smith provided records required in SC VI.3 (Attachment 1). These records indicate Precision Coatings is using the overall control efficiency (OCE) determined during the most recent stack test to calculate emissions. According to Mr. Smith, the coating usage is determined by weighing the coating and container before and after each use. Mr. Smith provided a record of the most recent scale calibration conducted (Attachment 2).

Precision Coatings uses mass balance to determine the VOC content of the materials used. The VOC content of six coatings were verified using Method 24 in accordance with FG-WEBCOATING SC V.1. Mr. Smith provided the Method 24 test results from Trace Analytical Laboratories, Inc (Attachment 3). One of the coatings tested was not used during the reporting period. The VOC contents listed in the emission calculations spreadsheet for the other five tested products are higher than the VOC content determined using Method 24. For two of the tested coatings, product #301023 and product #300260, the company is using a much higher VOC content to calculate emissions than the amount measured using Method 24. The VOC content of product #301023 as determined by Method 24 is 1.1 lb/gallon and the facility is using 6.67 lbs/gallon and the Method 24 test results for product #300260 show a VOC content of 0.46 lb/gallon and the facility is using 7.78 lbs/gallon VOC for calculations. The records indicate the highest 12-month rolling VOC emissions for just coatings used in FG-WEBCOATING between January 2019 and June 2019 were 8.53 tons reported in January 2019. Included in the records are VOC emissions from purge and clean-up solvents based on one-hundred percent of the solvent distributed for purge/clean-up calculated as being emitted. When adding purge and clean-up solvent VOC emissions, the highest 12-month rolling is 9.49 tons reported in February 2019. The reported 12-month rolling VOC emissions are less than the limit in FG-WEBCOATING SC I.1.

PTI 154-18 requires Precision Coatings to handle all VOC and/or HAP containing materials in a manner to minimize emissions and to capture all waste coatings, reducers, purge solvents and clean-up solvents (materials) and to store them in closed containers. During the site walk through I observed that all VOC and HAP containing materials and waste coatings, reducers, and clean-up solvents were stored in closed containers.

The emissions from EU-LINE1, EU-LINE4, EU-LINE6, and EU-LINE8 shall not bypass the coating lines' associated RTO unless a fire and/or explosion hazard warrants it. According to Mr. Smith, there were no instances in the past year when emissions from any of the coating lines bypassed an RTO.

Precision Coatings is prohibited from operating any of the four web coating lines (including clean-up times using organic solvents) in FG-WEBCOATING unless emissions from the coating line/s are exhausted to the associated RTO which is installed and operating properly. Proper operation of each of the three RTOs includes maintaining a minimum temperature established during testing, a minimum retention time, and minimum overall VOC control efficiency (OCE). Each line is also required to be equipped with a permanent total enclosure (PTE). A visible and audible alarm system and an automatic coating process shut-off system must be installed, maintained and operated in a satisfactory manner. Proper operation includes the alarm and shut-off systems being activated if the solvent stream exceeds the maximum VOC loading or if the RTO temperature falls below the required minimum operating temperature threshold specified.

On February 24 and 25, 2015, Precision Coatings had the enclosers and RTOs associated with EU-LINE1, EU-LINE4, and EU-LINE6 tested for capture efficiency (CE), destruction efficiency (DE), and OCE. The summary of the test results and the operating temperatures of the RTOs during testing are on file at the EGLE Warren District office. The stack test report summary along with the Stack Test Field Observation Report written by Tom Gaslioli, EGLE, indicate the following:

- The minimum temperature recorded during testing for Reeco1, Reeco2, and J.Zink was 1600 degrees Fahrenheit, 1607 degrees Fahrenheit, and 1617 degrees Fahrenheit respectively.
- DEs for Reeco1, Reeco2, and J.Zink were 92.3%, 96.1%, and 96.2% respectively.
- The coating head enclosure for all lines are considered a PTE.

Based on the information in the stack test summary report and the Stack Test Field Observation Report the OCE for each RTO is greater than the minimum OCE required in the PTI.

Each coating line in FG-WEBCOATING is equipped with an automatic shut-off system that will shut the coating line down if the temperature of the respective RTO falls below the minimum temperature required. Precision Coatings tests the automatic shut-off system for each line once a month by switching each coating line to the on position when the associated RTO is below the minimum required temperature. Mr. Smith provided the completed work orders for these tests for January 2019 through July 2019 (Attachment 4). The work orders do not indicate whether the test was successful, only that any failures should be reported to the Maintenance Manager, Derek Knezevich. Mr. Knezevich indicated in an email dated September 5, 2019 that Precision Coatings did not have any failures in 2019 for any of the coating line interlocks (Attachment 5). Mr. Smith stated that he will update the work orders going forward to include information about whether the test demonstrated the interlock system was working.

Continuous monitoring and recording of the combustion zone temperature at equally spaced intervals, not to exceed 15 minutes, for each of the three regenerative thermal oxidizers (REECO1, REECO2, J. Zink) is required to ensure the minimum temperature established during testing is maintained. Each temperature measurement device is required to have an accuracy of greater of ± 1.0 percent of the temperature being measured expressed in degrees Celsius or ± 1.0 °C. Mr. Smith provided thermocouple and digital recorder calibration records for each monitoring system from January 2019 through July 2019 (Attachment 6). These records indicate that the accuracy of the thermocouple on each system is evaluated monthly and the digital recorder is calibrated quarterly and that the accuracy of each thermocouple and digital recorder is within ± 1.0 percent of the temperature being measured in degrees Celsius. All temperatures noted in the calibration records were within ± 0.32 percent of the temperature being measured in degrees Celsius.

Mr. Smith also provided records of the temperature readings every 10 minutes and three-hour rolling averages for each RTO for January 2019 through June 2019 (Saved as A5496 Jan - Jun 2019 Temp in S:\Air Quality Division\STAFF\Kerry Kelly\Temp Records). These records indicate the temperatures recorded every 10-minutes for each RTO were above the respective minimum temperature recorded during testing. Records of the monthly minimum temp, maximum temp, and temp average for each RTO for January 2019 through June 2019 were included in the temperature logs. The monthly summary indicates the minimum temperature each month was above the minimum temperature recorded during testing and there were no deviations during the reporting period.

Line #1 and Line #4 were the only coating lines running during the inspection. I inspected the RTO for Line #1 (Reeco 2) and Line #4 (Reeco 1) and noted the operating temperatures were 1680 degrees Fahrenheit and

1657 degrees Fahrenheit respectively. These temperatures are above the minimum temperature recorded during stack testing.

The PTI requires monthly recordings of the pressures at each coating head enclosure to ensure the enclosure is being maintained as a PTE (minimum of negative 0.007 inches or less of water pressure differential). Mr. Smith provided records of the weekly pressure readings for February 2019 through April 2019 (Attachment 7) and monthly pressure drop readings for January 2019 through August 2019 (Attachment 7). The weekly records indicate the pressure differential between each coating head enclosure and the surrounding area was at least negative 0.007 inches of water for 11 consecutive weeks. PTI 154-18 allows the pressure drop recordings to be reduced to monthly after 8 consecutive readings of negative 0.007 or less inches of water. The minimum monthly pressure differential recorded for all coating heads was negative 0.02 inches of water which is less than negative 0.007.

One head was running on Line #1 during the inspection. The pressure differential between the coating head enclosure and surrounding area was negative 0.03 inches water column during the inspection.

During the inspection, one of the two heads on Line #4 (Head 1) was in set-up mode and the other head was not running. The pressure differential between the coating head room and the surrounding area was negative 0.01 inches water column.

Line #6 has two coating heads, neither of which was running at the time of the inspection.

Line #8 was not running during the inspection. According to Mr. Smith, Precision Coatings has not used Line #8 in 2018 or 2019 (Attachment 8).

Mr. Smith provided a copy of the malfunction abatement plan (MAP) for FG-WEBCOATING as required in SC III.5 of PTI 154-18 (Attachment 9). Contents of the MAP includes inspection and replacement schedules for monitoring devices and operating variables monitored to ensure proper operation of each RTO and PTE. The MAP also states specific preventative maintenance tasks are incorporated into the facilities electronic preventative maintenance system which generates and stores maintenance and inspection task information. Mr. Smith provided a list of preventative maintenance activities for each RTO (Attachment 10) and RTO chamber inspections performed in 2019.

Performance tests (CE, DE, OCE) are required within 90 calendar days of any reconfiguration of the coating lines/RTOs. According to Mr. Smith, the configuration of the equipment has not changed since the 2015 performance test. During the inspection I did not see any indications that any of the coating lines or RTOs had been reconfigured.

FG-FACILITY

This flexible group includes all process equipment source-wide including equipment covered by other permits, grand-fathered equipment, and exempt equipment. Sources of HAP and VOC emissions at Precision Coatings include: the four coating lines in FG-WEBCOATING, mixing operations, methanol, ethyl acetate, and MEK storage tanks.

The following emission limits are set forth in PTI 154-18 for FGFACILITY:

Each Individual HAP: 8.9 tpy 12-month rolling time period as determined at the end of each calendar month
Aggregate HAPs: 22.4 tpy 12-month rolling time period as determined at the end of each calendar month
VOC: 89.9 tpy 12-month rolling time period as determined at the end of each calendar month

According to PTI 154-18, compliance with FG-FACILITY emission limits is demonstrated by FG-FACILITY SC VI. 2 and VI.3. SC VI. 2 and VI.3 require records be kept of the monthly and 12-month rolling VOC emissions calculations and individual and aggregate HAP emission calculations.

Monthly and 12-month rolling emission records provided by Mr. Smith indicate the highest 12-month rolling VOC emissions for coatings, purge and clean-up solvents and methanol tank emissions are 9.49 tons reported in February 2019. The reported 12-month rolling VOC emissions are less than the limit in FG-FACILITY.

Prior to approval of PTI 154-18 on January 31, 2019, Precision Coatings was not required to calculate monthly and 12-month rolling HAP emissions. As a result, records of HAP emissions provided by Mr. Smith (Attachment 12) do not include 12 months of HAP data. Mr. Smith did provide monthly and rolling total individual and aggregate HAP emissions records for January 2019 through June 2019 (Attachment 12). The highest five month

total individual HAP emissions were 1.61 tons of methanol. Aggregate HAP emissions for January 2019 through June 2019 were 2.2 tons.

EQUIPMENT EXEMPT FROM PERMIT TO INSTALL REQUIREMENTS

TANKS

During the inspection I noted there were six storage tanks outside at Precision Coatings. According to Mr. Smith, three of the tanks are not being used, one of which has never been used because it doesn't have proper retaining area. Labels on the tanks were: ethyl acetate, methanol, and methyl ethyl ketone (MEK).

The installation date for each tank is reported as August 30, 1998 and the sizes either 6,000 gallons (22.7 m³) or 4,170 gallons (15.8 m³).

Mr. Smith determined the vapor pressure of each material stored at actual storage conditions;

- methanol = 1.856 psia
- ethyl acetate = 1.41 psia
- MEK – 1.38 psia

The methanol tank, because the true vapor pressure of methanol is greater than 1.5 psia, does not meet the requirements in R 336.1284. The methanol tank appears to meet the Rule 290 exemption as stated below.

The New Source Performance Standards (NSPS) for Volatile Organic Liquid Storage Vessels (40 CFR, Part 60, Subparts Kb) applies to storage vessels with a capacity greater than or equal to 75 cubic meters (m³) that are used to store volatile organic liquids (VOL) for which construction, reconstruction, or modification is commenced after July 23, 1984. The tanks at Precision Coatings are 22.7 m³ and 15.8 m³, therefore the tanks do not appear to be subject to 40 CFR, Part 60, Subpart Kb.

EMERGENCY ENGINE

Precision Coatings has one 0.125 MM BTU per hour natural gas fired spark ignition (SI) reciprocating internal combustion engine (RICE) used for emergency power generation. This engine was installed February 1985 and is subject to 40 CFR 63 Subpart ZZZZ. EGLE has not accepted delegation for 40 CFR 63 Subpart ZZZZ at area sources of HAPs, therefore, compliance with 40 CFR Subpart ZZZZ was not evaluated.

METHANOL STORAGE TANK

The 6,000 gallon methanol storage tank appears to be exempt from the requirement to obtain a permit to install per Rule 290. Rule 290 limits the emissions of noncarcinogenic air contaminants with initial threshold screening levels (ITSL) greater than or equal to 2.0 micrograms per cubic meter to 1,000 pounds per month uncontrolled or 500 pounds per month controlled. Mr. Smith provided records of the VOC emissions from the methanol storage tank between January 2019 and June 2019 (Attachment 13). These records state methanol has an ITSL of 20,000 and does not have an initial risk screening level (IRSL). IRSL are calculated for possible, probable, or known human carcinogens. The reported monthly methanol emissions from the storage tank are 46.99 lbs/month. The reported emissions are less than the 1,000 pound limit in Rule 290.

MIXING ROOM

During the inspection I observed five mixers used for mixing coatings. Emissions from this process are included in the FG-WEBCOATING emissions according to Mr. Smith. These emission units appear to be exempt from the requirement to obtain a permit to install per Rule 287(2)(k).

CONCLUSION

Based on information collected and belief formed after reasonable inquiry during this inspection, Precision Coatings appears to be in compliance with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994, PA 451; Michigan Department of Environment, Great Lakes, and Energy, Air Quality Division (EGLE-AQD) administrative rules and PTI 154-18.

NAME

K. Kelly

DATE

9/27/19

SUPERVISOR

Joye B.