

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

B013526966

FACILITY: Siemens Industries		SRN / ID: B0135
LOCATION: 470 N PAW PAW AVE, BENTON HARBOR		DISTRICT: Kalamazoo
CITY: BENTON HARBOR		COUNTY: BERRIEN
CONTACT: Jim Chevrette , Quality/EHS Manager		ACTIVITY DATE: 09/12/2014
STAFF: Matthew Deskins	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: Unannounced Scheduled Inspection.		
RESOLVED COMPLAINTS:		

On September 12, 2014 AQD Staff (Matt Deskins) went to conduct an unannounced scheduled inspection of the Siemens Industries facility located in Benton Harbor, Berrien County. According to AQD district file information, Siemens is a minor source and their main business is the electroplating of chrome, nickel, and copper. They have three active air permits issued by the AQD (PTI Nos. 413-85, 414-85, and 226-95) according to the file and the Permit Cards database related to a sandblasting operation, an acid scrubber, and a hard chrome plating line respectively. Because of the hard chrome plating line, the facility is also subject to the federal regulation 40 CFR Part 63 Subpart N (NESHAP for Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks (a.k.a. the Chrome NESHAP). They more recently became subject to 40 CFR Part 63 Subpart WWWW (NESHAP for Area Source Plating and Polishing Operations). The purpose of the inspection was to determine the facilities compliance status with the aforementioned permits and the Chrome NESHAP. Please note that the AQD is not delegated to enforce the NESHAP WWWW regulation at this time so no compliance determination was made in regards to that regulation. Staff departed for the facility at approximately 10:20 a.m.

Staff arrived at the facility at approximately 12:30 p.m. after travel and lunch. Prior to entering the facility, staff drove by it several times to see if any visible emissions could be seen or if any odors could be detected. Neither were noted. Staff then proceeded into the office area and introduced themself to Phil Schingel (Controller?) and stated the purpose of the visit. Staff then asked if Jim Chevrette (Quality / EHS Manager) was available. Phil said that he was still out to lunch but should be back at around 1:00 p.m. so staff was welcome to wait for him. Staff then signed in and waited for Jim to return. At approximately 1:00 p.m. Jim came back for lunch. Phil then proceeded to let Jim know that staff was present and Jim came out to greet staff. Jim then led staff to his office where staff gave him a copy of the DEQ's "Environmental Inspection Brochure" and a business card. Staff then sat down at a table with Jim to discuss the various permits, the Chrome NESHAP, and facility operations. The following is a summary of staff's discussions with Jim and also Kieth Rapp (title?) who came in later and assisted Jim with staff's inspection.

According to Jim, Siemens currently employs approximately 60 people with about 12 to 15 of those being office personnel. They are currently working 1 shift Monday through Friday but will work some weekends if maintenance or business requires it. He said that electroplating is still their main business and it is mainly for refurbishing equipment for steel mills such as U.S. Steel. He said that there are only two other companies along with Siemens that do this type of work for the steel industry. He went on to state that their work generally revolves around steel molds that they receive that are copper lined and nickel plated and they refurbish them. He said that they hardly do any chrome plating anymore and that they are hoping to phase it out since they only have two customers that require it. Staff then asked about the various plating tanks and if any have been added or removed. Jim said that nothing has changed and that they still have 14 tanks used for nickel plating, 1 for copper plating, and the one chrome plating tank (Tank #27). He said that the copper plating is only done on the edges of the mold dies (broad and narrow edges) when the steel gets worn down on them. He said that they still have the acid scrubber the controls the emissions from the tanks and that the chrome plating tank also has the composite mesh pads/mist eliminator for emissions control. He also said that the tanks are covered with either plastic or fiberglass slats. Staff then asked how business had been and this is where Keith replied that it has picked up again during the summer. He said that last winter when Lake Michigan froze over it prevented a lot of the mills around Chicago and Gary, Indiana from receiving steel which really slowed business down. Staff then asked Jim about any other equipment at the facility that is not permitted and the following is what was noted:

Emergency Generator: It is rated at 0.9 MMBtu/hr and is diesel fired. It was installed under the permit

exemption Rule 285(g). It is subject to the RICE MACT (40 CFR Part 63 Subpart ZZZZ) as an area source. The AQD is not delegated to enforce this regulation so a compliance determination wasn't made. Staff did follow up later by e-mailing Lee some summary information on the RICE MACT requirements. It appears that only an hour meter has to be installed (if it doesn't have one) and they have certain hour intervals when maintenance has to be conducted and documented. Jim also said that they've brought in portable generators when they've had extended power outages.

Water Boiler: It is rated at 7 MMBtu/hr and is natural gas fired. It was installed under the permit exemption Rule 282(b)(i). It is not subject to the new Boiler MACT (40 CFR Part 63 Subpart JJJJJJ) because it is fired by natural gas. The only requirement is that they maintain records of fuel design and usage.

Heat Treat Oven: It is rated at 5 MMBtu/hr and is natural gas fired. It was installed under the permit exemption Rule 282(a)(i). They only use it to warm up uncoated steel materials prior to welding different grades of stainless steel onto rollers (using submerged arc welders that don't create fumes).

Spray Painting: They used to do some spray painting (done under permit exemption Rule 287(c)) but they don't do that anymore. Any painting done now is with the use of aerosol spray cans which is exempt under Rule 287(b).

Masking Agent: They used to brush on a masking agent on the edges of the steel that was not to be plated with copper and it was exempt under Rule 287(c). They told staff they don't have to do this process anymore and now use a 3M tape instead.

Staff then went on a facility tour with Jim and Keith. The following is what staff noted/observed and will be followed by the various permit special conditions, the facilities compliance status with them, as well as compliance status with the Chrome NESHAP. On the way out staff asked Keith how many buildings they had on site. Keith said that they had 3 standalone buildings and they referred to them as the Office Building, Copper Production Building, and the Roll Shop. Staff then asked about any Parts/Cold Cleaners and Keith said that they have two of them and they're serviced by Crystal Kleen. Staff later noted during the walk through that they both had their lids closed and instructions on their use posted.

Staff's first stop with Jim and Keith was at the Chrome Plating Tank. It was not in use. The tank is filled with a chromic acid solution and staff noted it had fiberglass slats covering it. Staff also noted that the bath temperature was approximately 110 Degrees Fahrenheit (F). Keith mentioned that when in use the bath temperature is usually 120 Degrees F and usually around 100 Degrees F when in standby mode. The emissions from it are controlled by composite mesh pads and a mist eliminator. Preventative maintenance on the controls are kept in a binder and on computer. They just cleaned the composite pads and had all new ductwork installed a couple of weeks ago. They are also keeping a daily log on the differential pressures and wash downs as well as tracking maintenance which includes the date, time, employee, and component worked on. Staff noted the pressures for the three stages were 1.2, 1.8, and 1.3 for a total pressure of 4.3. Compliance with PTI No. 226-95 and the Chrome NESHAP will be mentioned later in this report.

Staff's next stop was at the copper and nickel plating area. The acid bath (nitric and/or hydrochloric) used in the process are controlled by an acid scrubber. At the beginning of the process, steel plates (molds) come into the pre-treatment area which is located right next to one of the tanks. Depending on the steel material, they have steps to follow for the pre-treatment process which consists of applying various acids to it. After this, they go into whatever plating bath is required. As mentioned earlier, the facility has 14 nickel and 1 copper plating tank. They were all covered plus they use a wetting agent in the bath. According to Keith, the steel molds/parts are in the baths 4 to 7 days before the plating process is done. He said that the process plates about 1000th of an inch of an hour.

The next stop was at the Sand Blast Unit. It was not in use during the inspection and Keith said they may use it for one 8 hour shift per week depending on the condition of the steel materials that are brought in. He said that they installed a new baghouse on the unit back in 2012. It is a larger unit than the previous one but the stack still exhausts out the side of the building like the last one did. Staff did not note any dust/sand around it on the inside nor anywhere on the ground outside of where the stack vents out.

Staff also observed a couple of booths equipped with HEPA filters that they use for finishing work. They

installed these do to them being subject to 40 CFR Part 63 Subpart WWWW - NESHP for Plating and Polishing Operations. The AQD is not delegated to enforce this regulation so a compliance determination wasn't made.

Staff's last stop was in the machining area (Roll Shop) that houses various welding machines, lathes, etc. and the heat treat furnace. The heat treat oven as mentioned previously is just used to pre-heat the steel rollers (usually 600 degrees F) prior to them getting a certain grade of stainless steel arc welded to them. All of this equipment is being operated under permit exemptions.

The following lists the permit special conditions of PTI No. 413-85 for the sandblasting unit. It was also issued for an aluminum metalizing operation but that equipment had been removed years ago.

S.C. 10: Visible emissions from the sandblasting operation shall not exceed 0% opacity.

AQD Comment: Appears to be in COMPLIANCE. The unit wasn't in use during staff's inspection and we haven't received any dust fall out complaints. Staff didn't note any accumulated sand inside or outside the building.

S.C. 11: the particulate emission from the sandblasting operation shall not exceed 0.01 pounds per 1,000 pounds of exhaust gases, calculated on a dry gas basis.

AQD Comment: Appears to be in COMPLIANCE. Staff has to assume this is being met by use and proper maintenance of the baghouse. Stack testing has not been requested by the AQD to date.

S.C. 12: Applicant shall not operate the sandblasting operation unless the bagfilter is installed and operating properly.

AQD Comment: Appears to be in COMPLIANCE. As mentioned earlier, the unit was not operating during staff's inspection but they do have a new baghouse and staff will assume that they operate it properly.

S.C. 13: The disposal of collected air contaminants shall be performed in a manner which minimizes the introduction of air contaminants to the outer air.

AQD Comment: Appears to be in COMPLIANCE. Staff will assume that they are doing this.

The following lists the permit special conditions of PTI No. 413-85 for the acid scrubber used on the copper and nickel plating lines.

S.C. 10: There shall be no visible emissions from the rinse tank.

AQD Comment: Appears to be in COMPLIANCE. Staff did not observe any VEs coming from them.

S.C. 11: The emissions form the rinse tank shall not exceed 0.07 milligrams per cubic meter, corrected to 70 degrees F and 29.92 inches of Mercury (Hg).

AQD Comment: Appears to be in COMPLIANCE. The AQD has not requested any stack testing to date.

S.C. 12: Applicant shall not operate the rinse tank unless the scrubber is installed and operating properly.

AQD Comment: Appears to be in COMPLIANCE. The scrubber is installed and staff will assume it is being operated properly.

S.C. 13: The exhaust gases from the rinse tank shall be discharged unobstructed vertically upwards to the ambient air from a stack with a maximum diameter of 14 inches at an exit point not less than 40 feet above ground level.

AQD Comment: Appears to be in COMPLIANCE. Staff did not observe this stack but will assume it meets these requirements.

The following lists the special conditions of PTI No. 226-95 for the Hard Chrome Plating Line.

13. The hexavalent chromium emission rate from the Hard Chrome Plating Line, hereinafter "process", with composite mesh pad mist eliminator, hereinafter "controls", shall not exceed 0.00015 pound per hour nor 0.001 ton per 12-month rolling period.

AQD Comment: Appears to be in COMPLIANCE. It appears the above limits were based off of their 1996 permit application. According to that, the facility had to stay below 20,000,000 ampere hours on the rectifiers to meet the limit. Records reviewed by staff indicates the facility doesn't come anywhere near this amount and appears to average between 2,000,000 and 5,000,000 ampere hours a year.

14. The total chromium emission from the process shall not exceed 0.015 milligrams per dry standard cubic meter, corrected to 70°F and 29.92 inches Hg.

AQD Comment: Appears to be in COMPLIANCE. This emission limit is from the Chrome NESHAP and is based off pressure drops that were determined during compliance testing. The testing averaged 5 inches of pressure drop across the three composite pads (stages) and the NESHAP allows for plus or minus two inches. Pressure drops recorded by the facility and reviewed by staff appear to indicate pressure drops within this range.

15. Visible emissions from the process shall not exceed 0% opacity.

AQD Comment: Appears to be in COMPLIANCE. No VEs were observed during staff's inspection.

16. Applicant shall not operate the process unless the controls are installed and operating properly.

AQD Comment: Appears to be in COMPLIANCE. The composite mesh pads are installed along with the mist eliminator. Staff assumes that they are being operated properly.

17. Applicant shall equip and maintain the controls with a pressure drop indicator for each stage.

AQD Comment: Appears to be in COMPLIANCE. Pressure drop indicators are installed.

18. The exhaust gases from the process shall be discharged unobstructed vertically upwards to the ambient air from a stack with a maximum diameter of 34 inches at an exit point not less than 34.8 feet above ground level.

AQD Comment: Appears to be in COMPLIANCE. The stack dimensions appear to meet the above requirements.

19. By October 25, 1996, applicant shall prepare and submit an operation and maintenance plan including the start-up, shutdown, and malfunction plan of the controls to the District Supervisor for approval. The plan shall also include a standardized checklist to document the operation and maintenance of the controls which addresses a systematic procedure for identifying malfunctions, reporting process to the supervisors and other actions to be followed to ensure that the controls or process malfunctions due to poor maintenance or other preventable conditions do not occur.

AQD Comment: Appears to be in COMPLIANCE. The facility submitted O&M Plan which included the items mentioned above.

20. Within 60 days after achieving the maximum production rate, but not later than 180 days after the commencement of trial operation, federal National Emission Standards for Hazardous Air Pollutants (NESHAPs) require verification of total chromium emission rates from the process by testing, at owner's expense, in accordance with 40 CFR, Part 63, Subparts A and N. Verification of emission rates includes the submittal of a complete report of the initial performance test results. Applicant shall notify the District Supervisor in writing within 60 days of the date of commencement of trial operation in accordance with 40 CFR, Part 63.347(d). Stack testing procedures and the location of site-specific performance testing ports shall be in accordance with the applicable federal Reference

Methods, 40 CFR, Part 63, Appendix A. No less than 60 days prior to testing, a complete stack testing plan must be submitted to the Air Quality Division. The final plan must be approved by the Air Quality Division prior to testing. Within 60 days following the completion of the performance test, applicant shall submit the results of the initial performance test as part of the compliance status notification.

AQD Comment: Appears to be in COMPLIANCE. The testing required above was done and the report and notification were submitted.

21. Applicant shall perform inspection as follows:

- a. Visually inspect the back portion of the mesh pad closet to the fan to ensure there is no breakthrough of chromic acid mist on a quarterly basis.
- b. Wash down the mesh pads following manufacturer's recommended procedures.
- c. Once per day, determine the pressure drop across the controls. If the pressure drop exceeds the value established during the initial testing, the exceedance shall be documented and the operation and maintenance procedures shall be reviewed. Any corrective action taken must be documented.

AQD Comment: Appears to be in COMPLIANCE. The facility appears to be doing the above and are documenting readings and any maintenance/corrective actions done.

22. On a quarterly basis, the applicant shall visually inspect the controls to ensure proper drainage, no chromic acid build-up on the mesh pads, and that structural integrity is sound.

AQD Comment: Appears to be in COMPLIANCE. The facility appears to be doing the above and are documenting it.

23. Applicant shall use fresh water for any make-up water, and shall supply this water to the unit at the top of the mesh pad mist eliminator.

AQD Comment: Appears to be in COMPLIANCE. Staff will assume that this is being done.

24. Applicant shall maintain records of inspections required to comply with applicable work practice standards of 40 CFR 63.342(f). Each inspection record shall identify the device inspected, the date, approximate time of inspection, duration of washdowns and a brief description of the working condition of the device during the inspection. Applicant shall also record any actions taken to correct deficiencies found during the inspection. All records shall be kept on file for a period of at least five years and made available to the Air Quality Division upon request.

AQD Comment: Appears to be in COMPLIANCE. The facility appears to be doing the above from records reviewed by staff. They keep records in a binder near the chrome plating process and also on computer.

25. Monitoring and recording of emissions, operating and maintenance information is required to comply with the National Emission Standards for Hazardous Air Pollutants as specified in 40 CFR, Part 63, Subparts A and N. All source emissions data, operating and maintenance data shall be kept on file for a period of at least five years and made available to the Air Quality Division upon request.

AQD Comment: Appears to be in COMPLIANCE. The facility is also maintaining On-Going Compliance Status Reports as required.

INSPECTION SUMMARY: The facility appears to be in COMPLIANCE with their various permits and the special conditions contained within them. They also appear to be in COMPLIANCE with the Chrome NESHAP. As mentioned previously, staff did not make a compliance determination pertaining to 40 CFR Part 63 Subparts ZZZZ and WWWW since the AQD is not delegated by the EPA to enforce those regulations. Staff thanked Keith and Jim for their time and departed the facility at approximately 2:45

p.m.

NAME Matt DeR

DATE 9-18-14

SUPERVISOR MA 9/19/2014