

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

B167736262

FACILITY: Allnex USA Inc.		SRN / ID: B1677
LOCATION: 2715 MILLER RD, KALAMAZOO		DISTRICT: Kalamazoo
CITY: KALAMAZOO		COUNTY: KALAMAZOO
CONTACT: Michael Szoke , Plant Manager		ACTIVITY DATE: 08/30/2016
STAFF: Monica Brothers	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Unannounced scheduled inspection		
RESOLVED COMPLAINTS:		

This was an unannounced scheduled inspection. Allnex is a chemical manufacturer that makes a wide variety of resins, additives, and crosslinkers for use on wood, metal, plastic, and other surfaces. The facility in Kalamazoo makes only one type of resin molecule, but can make different forms of the same resin. The PPE requirements here are steel-toed boots, safety glasses, hearing protection, hard hats, and no contacts. They are currently operating under PTI# 418-96F, and they were last inspected on March 13, 2012.

Staff (Monica Brothers) arrived at the facility at 9:30am, signed in with the security guard at the gate, and met with Michael Szoke, Plant Manager, and Val Vogan, SHE Manager. We first went into a conference room to discuss some initial questions. I gave Val and Michael my business card and an inspection brochure and briefly explained the inspection process and what kinds of records I would be looking for later after the facility tour. Michael said that this facility has about 42 full-time employees and 6 to 8 contractors. They began operations in 1925, and then eventually split the facility into Allnex and Cytec in 2013. Cytec was then recently bought by a company called Solvay. Allnex makes only one resin molecule, but can make it in various forms depending on customer needs. Some of their largest customers are PPG, Valspar, Goodyear, Pirelli, Bridgestone, and Axalta. I then asked Michael whether there had been any major changes in facility equipment or processes since the last inspection in 2012, and he said that other than the split with Cytec, the only thing he could think of was that they added a cooling tower, which is exempt under Rule 280(d).

FGMRPT: Methylated Resins Building

After our initial discussion, we took a tour of the facility. We began at FGMRPT, which is the methylated resins production building. This process was not operating on the day of inspection because routine maintenance and cleaning was being done, so I was unable to take down any real-time data from the equipment. However, I did later see the continuous records that they keep while the resin plant is running. The resin plant runs 24 hours per day, seven days a week when it is operating. Michael and Val explained the process as we went through the building.

We first saw the control room where they can continuously monitor all of the parameters associated with each piece of equipment, like the seal pot and methanol scrubber liquid levels, the condenser outlet temperature, the flows through the scrubbers, etc.

Then we walked up to the main reactor. This is where the initial reaction takes place by combining methanol, formaldehyde, and melamine and heating the mixture. This first reaction creates 75% of the final product molecule. The mixture then goes into holding tanks before entering a thin-film evaporator to get rid of extra water, formaldehyde, and methanol that were left over from the first reaction. Distillation columns are used to separate these materials from one another so that they can be reused in future reactions. After the thin-film evaporator, the resin then comes back into the building and into another tank where more methanol is added, along with nitric acid for pH balance. The next step is to remove the salts that have formed in the reactions in a solid bowl centrifuge (SBC). The now de-salted resin then gets pumped into a different building for a final filtration step in a candle filter. The finished product then gets pumped to two large outdoor tanks.

The vapors that are produced during these processes are controlled by various techniques. Concentrated vapors are routed to the seal pot, where most of them get liquefied. The vapors that still remain after this step then go to the methanol scrubber, which uses fresh methanol. Leftover vapors from the methanol scrubber then go to the vapor recovery unit and cryogenic condenser, and then finally exit the stack. Non-concentrated vapors from the resin-making processes go to the water scrubber.

We then went over to the area where the 2 final resin tanks were located. They have 7 other tanks, 2 of which being tanks for recycled materials (Formaldehyde with H₂O, and methanol). This area is also where the melamine gets transferred. They were not transferring any melamine at the time of inspection, but Michael and Val said that they do visible emissions checks for each railcar.

Records: The highest 12-month rolling value for VOC emissions was 29.66 TPY in August 2015, which is below their 55 TPY limit. The highest 12-month rolling value for lbs of resin produced was 47.66 million lbs, which is also below the 76.6 million lbs limit. They had liquid level indicators on the seal pot and methanol scrubber, pump operating indicators on the methanol scrubber, and a water flow rate indicator on the water scrubber. They continuously keep track of the flows, liquid levels, and condenser outlet temperatures in a computer program that alerts them to any numbers that go over the setpoints outlined in their Control Device Operating, Maintenance, and Monitoring Plan (CDOMMP). On average the condenser outlet temperature was -60C. They record this in their system every 15 minutes. Their CDOMMP states that they must be under -50C at all times, so they have an alarm setpoint for -55C. Val showed me a couple of calibration records for the cryogenic condenser. It is required that they calibrate it once per year, but they do it every 6 months. I reviewed the VE checks for the melamine transferring and saw that they were also keeping records of the magnahelic readings from the hopper.

FGCYREZ: Powder Plant

Next we went over to the powder plant building, which mixes the same resin made in the resin plant with different types of silica, depending on customer demands, to produce a powder product. The powder plant operates 5 days per week, Monday through Friday. This is a batch process. The resin gets pumped from the 2 large storage tanks to a small storage tank that sits right outside the powder plant building. From there the resin gets pumped into a mixing vessel inside the building and then large bags of silica get dropped in. The dust from this process is controlled by a single baghouse. It is a Donaldson Torit that was installed in April 2014 and replaced the two baghouses that were there before.

The baghouse is located inside where the powder was being made, and there was a significant amount of dust on the floor from the production processes. So in the event that the baghouse was not working properly and leaking dust, it would be difficult to tell where the dust on the floor originated. We then took a look at the stack outside. No visible emissions were seen coming from the stack at the time of inspection.

Records: They do daily pressure drop readings and visible emissions checks, which I reviewed. At the time of inspection the pressure drop reading was 2.1, which is compliant with the requirement that it needs to always be above 1. The daily VE readings indicated that no emissions have been seen coming out of the stack.

FGBoilers:

There are 2 boilers at the facility, Boiler 1 and Boiler 3. Boiler 1 is a Cleaver Brooks 29.29 MMBTU/hr boiler that was installed on January 15, 1971. It can produce 24,000lbs steam/hour at 150psi. Despite the resin plant shut down that day, Boiler 1 was still running. Michael told me that they still use the boilers to provide steam to Solvay even though the two companies have split. Boiler 3, which was not running at the time of inspection, is a 72 MMBTU/hr boiler that was installed on February 1, 1986. It can produce 60,000lbs steam/hour at 150psi.

Records: They are limited to 966 million cubic feet of natural gas burned per 12-month rolling, and the records showed that this number is around 340 million cubic feet, which is way under their permit limit. Their SO₂ emissions are limited to 87.7 TPY on a 12-month rolling timescale, and the records showed that they only emit 0.1 TPY. Their NO_x emissions are limited to 88.7 TPY on a 12-month rolling timescale, and the records show that they only emit about 17 TPY.

FGFacility:

They are keeping track of how much diesel fuel each generator uses per month (see attached sheet). They are limited to 9.9 TPY 12-month rolling for any individual HAP and 24.9 TPY 12-month rolling for combined HAPS, and they are way under both of these limits (see attached sheet). Their SO₂ emissions are limited to 99 TPY 12-month rolling, and their actual emissions are around 1.9 TPY. Their NO_x emissions are also limited to 99 TPY 12-month rolling, and their actual emissions are around 16 TPY.

Generators:

They have two emergency generators at Allnex. One is a Magna One AC generator that sits right outside the boiler house. It is a 288hp diesel unit that was installed before 1997, and the hour meter showed 735 hours and 10 minutes. Val said that they do weekly checks on each generator and run them for about 30 minutes. The second emergency generator is a diesel-fired 335hp fire pump that was installed in 1977 and rebuilt in 2002. It is a Cummins unit, and the hour meter showed 1332.94 hours.

Sandblaster:

In the maintenance building, there is a small sandblasting unit. It has a filter control unit attached to it that filters the air before it is vented outside. It can be considered exempt under Rule 285(I)(vi).

Parts Washer:

In the maintenance building, there is also a parts washer. It is a Recycle-Kleen unit with the lid closed and the rules posted. An MSDS was obtained, and it says that the solvent is 100% VOC, with a density of 6.4-6.7 lbs/US gallon. Val said that Recycle-Kleen comes to switch out the solvent when needed.

After the tour of the facility, Val took me to her office to look at records. When this was complete, we met Michael back in the conference room to summarize the inspection and answer any other questions. I thanked Michael and Val for their time and left the facility at 12:30pm. At the time of this inspection, the facility seemed to be in compliance with their permit requirements.

NAME *Marisa Burt*DATE 9/2/16SUPERVISOR MD 9/7/2016