

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

N1336.

FY2016 Insp

N133632662

FACILITY: BASF CORPORATION		SRN / ID: N1336
LOCATION: 26701 Telegraph Road, SOUTHFIELD		DISTRICT: Southeast Michigan
CITY: SOUTHFIELD		COUNTY: OAKLAND
CONTACT:		ACTIVITY DATE: 12/15/2015
STAFF: Iranna Konanahalli	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: FY 2016 level-2 scheduled annual inspection of BASF Corporation		
RESOLVED COMPLAINTS:		

N1336 - SAR - 2015 12 15

BASF Corporation (N1336)
26701 Telegraph Road
Southfield, Michigan 48034-2442

ROP No.: MI-ROP-N1336-2015 dated August 26, 2015 (2015 revision incorporated natural gas only Boiler MACT 5D and CI RICE MACT 4Z)

Subject to: New Source Performance Standards (NSPS), 40 CFR, Part 60, Subparts Dc and A.

Subject to (initial notification only, originally [2004] promulgated MACT): 40 CFR Part 63, Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters (Federal Register / Vol. 69, No. 176 / Monday, September 13, 2004 / Page 55218 / Rules and Regulations). Federal Appeals Court has vacated this rule resulting in 112(j) MACT. See reconsideration NESHAP / MACT 5D Rule of January 31, 2013.

Subject to (reconsidered [2011] MACT: Annual Tune-up, one time Energy Assessment (EA) or ISO 50001): Major Source Boiler NESHAP / MACT 5D, 40 CFR Part 63, Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters, Page 7138, Federal Register / Vol. 78, No. 21 / Thursday, January 31, 2013 / Rules and Regulations / Final rule; notice of final action on reconsideration. The December 23, 2011 proposed rule addressed specific issues and provisions the EPA identified for reconsideration. This summary of the final rule reflects the changes to 40 CFR, Part 63, subpart DDDDD (March 21, 2011 final rule) in regards to those provisions identified for reconsideration and on other discrete matters identified in response to comments or data received during the comment period. Neither boiler (2) is equipped with Oxygen Trim System. BASF does not follow ISO 50001, Energy Management System for continuous improvement of energy performance, energy efficiency, energy consumption and for reduction of energy use, energy costs, greenhouse gas emissions (GHG), etc.

Subject to: Major Source NESHAP / RICE MACT 4Z, 40 CFR Parts 60 and 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines; New Source Performance Standards for Stationary Internal Combustion Engines (ICE);, Page 6674 Federal Register / Vol. 78, No. 20 / Wednesday, January 30, 2013 / Rules and Regulations / Final Rule. This final rule is effective on April 1, 2013. BASF's Emergency CI (Diesel) RICE is not subject to NSPS 4I because it was installed / manufactured before April 2006.

On December 09 & 15 (with new AQD EQA Tyler Salamasick), 2015, I conducted a level-2 **scheduled** annual inspection of BASF Corporation ("BASF"), an OEM automotive paint and paint application research center,

located at 26701 Telegraph Road, Southfield, Michigan 48034-2442. The inspection was conducted to determine compliance with federal Clean Air Act (CAA); Article II, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 (PA 451); Michigan Department of Environmental Quality, Air Quality Division (MDEQ-AQD) administrative rules; and the RO permit No. MI-ROP-N1336-2015 conditions.

During the inspection, Ms. Amanda Taylor (Phone: 248-948-2391; Fax: 248-948-2091; Mobile: 732-642-1379; E-mail: Amanda.Taylor@basf.com), EHS Specialist Ohio-Michigan-Canada Hub, and Mr. Howard D. Stephan (Ph: 248-948-2437; Fax: 248-948-2092; Mobile: 248-943-2470; E-mail: Howard.Stephan@basf.com), Shipping and Material Services, assisted me.

Mr. Kelvin Manni (Phone: 248-948-2408; E-mail: Kelvin.Manni@basf.com), Site Engineering Manager, was not present. Mr. Manni keeps records pertaining to the boilers (2) and an emergency generator.

Mr. Bryan Hughes (Phone: 734 324-6523; Mobile: 734-559-3940 Fax: 734 324-6401 E-Mail: Bryan.Hughes@basf.com) EHS Team Leader, Ohio-Michigan-Canada Hub, BASF Corporation, Wyandotte, 48192 Wyandotte, Michigan, was also present during the FY 2016 inspection.

Mr. David W. Sheaves (Ph: 734-324-6836; Mobile: 734-476-7608; E-mail: david.sheaves@basf.com), Environmental Health and Safety Team Leader, separated from the group (still part of BASF) and he is replaced by Mr. Bryan Hughes.

About 2015 Ms. Amanda Taylor replaced Ms. Karen Kellam (Ph: 248-948-2023; Fax: 248-948-2091; Mobile: 734-365-1455; E-mail: Karen.Kellam@basf.com), who moved to BASF, Ohio. In CY 2011, Ms. Kellam replaced Mr. Jason M. Therrien (Ph: 248-948-2023; Fax: 248-948-2091; Mobile: 734-624-9817; E-mail: Jason.therrien@basf.com), Environmental Health and Safety Compliance Specialist, who moved to a BASF facility at Erie, Pennsylvania. About 2008, Mr. Jason Therrien (248-948-2023) replaced Tom Ozimek as the site EHS contact. Ozimek transferred to Wyandotte facilities. Mr. Charlie Anderson (734-324-5131), Environmental Health and Safety Team Leader, separated from the company in CY 2009. About 2003, Mr. Anderson and Mr. Ozimek replaced Mr. Marc Lillemoen (248-948-2006), industrial hygienist.

The company's Southfield facility is a research and development facility. At this facility, R&D work for automotive body e-coat, basecoat and topcoat is conducted. There was also an application research center (ARC) where paint application problems of an automotive assembly plant are studied. ARC building was mostly idle since 2011. Other business units are moving into the Southfield buildings. At ARC, all booths and equipment will be removed and labs for EDN (Inks and resins, etc.) will be installed. Catalyst business will also be moved to Southfield. Application research can now be performed using small scale pilot paint facilities.

Per FY 2016 inspection, the BASF Southfield building names have changed:

1. Coating Research Center (CRC) building, 2671 Telegraph Road
2. Pigments and Coatings Excellence (PACE) Group building, 24600 West 11 Mile Road
3. CATALYST building, 24700 West 11 Mile Road
4. ED building, 24710 West 11 Mile Road

At the site, there is no manufacturing activity.

Custom software for spray logs is used for tracking paint & solvent usage and VOC emissions. Although exempt from Part 6 and 7 Rules, VOC emissions from R&D coating operations are reported via MAERS.

EG-PAINTLINE (Removed from ROP: R&D EU) - Idled

According to Ms. Karen Kellam, Application Research Center is idled since July 2011; ARC will be closed. Many long-term R & D positions are outsourced to Mangalore, India. Indian workers already obtained necessary training in CY 2011 at Southfield facility. Other business units of BASF such as EDN and Catalysts are moving into this building.

EU-PIGMENT

The pigment staging and storage room houses various pigments (powders) in five-gallon pails prior to their use

in paint formulations. Particulate emissions are controlled using a HEPA filter particulate control system. The process was not operating during the inspection; this is an intermittent operation; a couple of hours per month. Production and emission records are kept. The emissions from this source are about one-tenth of a pound of particulate matter per year due to HEPA control. Photohelic pressure drop readings are taken and recorded to ensure proper operation of HEPA filter system. SAP software keeps track of maintenance. A notice has been posted on the pigment room to advise employees to log pressure drop readings each time; ROP requires at least once per week.

Filter pressure drop logs are kept each time pigment transfer occurs. Based upon pressure drop, filters are cleaned using pulse air. The pigment transfer rates have come down due to bad economy. During the inspection (FY 2014: May 07, 2014 with Sam Liveson), I asked Mr. Howard to start the fan and I checked the air flow being drawn and the suction; I confirmed that there was sufficient suction. During the FY 2016 inspection, I did not verify air flow.

It has been decided (CY 2012) to keep HEPA filter system on site operational since occasional pigment transfer may occur after most work is transferred to India. This unit is mostly idled (sparingly used) although capable of being operated.

EG-SOLVSTORE (Removed from ROP: R&D EU)

The solvent storage room houses the solvents, the paint resins in 55-gallon drums and 5-gallon pails. The equipment consists of drum valves for raw material transfer and a fugitive exhaust system for room ventilation. The material withdrawal was not done during the inspection. This is a small source and the ventilation is for industrial hygiene.

Bond and ground principles are practiced rigorously to prevent fire and explosion during solvent transfers from one container to the other due to static electricity. Also, structurally weak areas are provided in the storage room to direct exploding gases and save most of the building from collapse.

EG-WASTEHANDL (Removed from ROP: R&D EU)

The waste handling room temporarily houses paint related wastes in storage totes, drums and 5-gallon pails. The waste collection system is present in the room. The drum crusher (aka compactor) is located in this room. The drum crushed located in the waste room. The materials are stored and labeled as hazardous waste.

US EPA and MDEQ-HWMD conducted a joint Resource Conservation and Recover Act (RCRA) inspection in March 2007.

FG-R&DPAINTBOOTHS (Removed from ROP: R&D EU)

There were approximately 43 R & D paint spray booths at the facility; few booths of 43 were removed recently during a consolidation. The booths are intermittently used to paint small test panels on a nonproduction basis for R & D purposes. The panels are cured in natural gas fired curing / bake ovens. Electrodeposition (E-coat) dip coating processes do not require a particulate control system and E-coat VOC emissions are not controlled.

Each spray booth has a spray log. I asked Ms. Taylor to install filters snug and tight. Custom software for spray logs is used for tracking paint & solvent usage and VOC emissions.

Per Rule 336.1601(a), the process is not subject to Rule 336.1621.

FG-BOILERS.

Two identical natural gas fired (fired tube: flame inside tubes) boilers (Cleaver Brooks CB Package Boilers, Model CS-700-600) of design capacity 25 million BTU per hour (5.8 MW) each. The boilers were installed in CY 1990 (after June 9, 1989). Therefore, the boilers are subject to New Source Performance Standards (NSPS), 40 CFR, Part 60, Subparts Dc and A. The boilers supply hot water and heat to the buildings. Natural gas usage, hours of operation, records are available. During CY 2014, 50.645 million scf of natural gas was used in CRC building and 41.778 million scf of natural gas was used in the two boilers. (FG-BOILERS, SC VI) Fuel oil capability does not exist and, therefore, has not been used. Natural gas usage records are kept based upon hours of operation. Steam production metering device (Venturi meter) is present but not working. A data acquisition system (DAS) has steam temperature and pressure. The boiler produces 70 psi (high pressure)

saturated steam. The steam pressure is reduced to 13 psi and delivered.

83 percent of the building total natural gas usage is expected to go through the boiler. 83% may be an updated fudge factor or boiler utilization factor used by BASF; it is based upon a historical data using boiler steam production. Kitchen and roof-top natural gas heaters account for the rest of natural gas usage. Hours of on/off are tracked and natural gas is prorated. This is not an accurate method but may be accepted at this time.

Neither boiler is equipped with Oxygen Trim System. Only pipeline quality natural gas is used in the boilers (FG-BOILERS, SC III.1)

Natural gas is used in several buildings, MM SCF:

1. Coating Research Center (CRC) building = 50.645
2. Pigments and Coatings Excellence (PACE) Group building = 2.744
3. CATALYST building = 1.402
4. ED building = 1.222

Total for all buildings = 56.013 MM SCF

Two natural gas boilers (FG-BOILERS) =41.778 MM SCF

NSPS Dc Revisions:

1. 72 FR 32759 = Page 32759 Federal Register / Vol. 72, No. 113 / Wednesday, June 13, 2007 / Rules and Regulations / Final Rule – to add compliance alternatives and to revise certain recordkeeping and reporting requirements.
2. 74 FR 5091 = Page 5091 Federal Register / Vol. 74, No. 17 / Wednesday, January 28, 2009 / Rules and Regulations / Final Rule - to correct technical and editorial errors.

The NSPS revisions simplified the natural gas usage recordkeeping. RO permit renewal MI-ROP-N1336-2010 & 2015 incorporate these changes. In addition, the ROP (2010 onwards) removes diesel / fuel oil requirements.

BOILER MACT 5D: FG-NG-BOILER-MACT-5D-MJRSOURCE-EXISTING

BASF was subject to 40 CFR Part 63, Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters (Federal Register / Vol. 69, No. 176 / Monday, September 13, 2004 / Page 55218 / Rules and Regulations). However, on June 8, 2007, US Court of Appeals had mandated that EPA vacate the Boiler MACT Rule in its entirety; in the interim period, 112(j) MACT permit was required. US EPA re-promulgated the Area Source Boiler MACT as NESHAP / MACT 6J

01/09/12 - The U.S. District Court for the DC Circuit vacated the EPA's May 18, 2011, notice that delayed the effective dates of the Major Source Boiler MACT rule. The effective dates of the final rules published in the Federal Register on March 21, 2011 (76 FR 15608 and 76 FR 15704), are delayed until such time as judicial review is no longer pending or until the EPA completes its reconsideration of the rules, whichever is earlier.

12/23/11 - The EPA published the Major Source Boiler MACT reconsideration proposal (40 CFR 63, subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters, Page 80598 Federal Register / Vol. 76, No. 247 / Friday, December 23, 2011 / Proposed Rules). The EPA will accept comment on the reconsideration proposal until February 21, 2012.

The boilers are subject to: Major Source Boiler NESHAP / MACT 5D, 40 CFR Part 63, Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters, Page 7138, Federal Register / Vol. 78, No. 21 / Thursday, January 31, 2013 / Rules and Regulations / Final rule; notice of final action on reconsideration. The December 23,

2011, proposed rule addressed specific issues and provisions the EPA identified for reconsideration. This summary of the final rule reflects the changes to 40 CFR, Part 63, subpart DDDDD (March 21, 2011 final rule) in regards to those provisions identified for reconsideration and on other discrete matters identified in response to comments or data received during the comment period.

The boilers (2) are **existing units** as they commenced construction before **June 4, 2010** (installed in 1990). The boilers do NOT burn any fuel other than pipeline quality sweet natural gas (NG); they do not burn solid fossil fuel, biomass, liquid fuel, etc. There is no emission limit for Gas1 that includes natural gas. For boilers over 10 million BTU per hour heat input, annual tune-up is required (no more than 13 months between tune-ups). Initial tune-up is due by January 31, 2016. Only boilers with emission limits are required to conduct performance tests (within 180 days of compliance date (January 31, 2016), July 29, 2016. BASF's boilers are not subject to emission limits as they fire only NG.

Boiler MACT **Initial Notification** is due by May 31, 2013. AQD received on May 31, 2013, Major Source Boiler MACT Initial Notification dated May 29, 2013. The notification is signed by Mr. David Sheaves (734-324-6836), Michigan-Canada EHS Hub Environmental Team Leader. The notification covers two boilers. BASF also mailed a copy of the notification to Mr. George Czerniak (AE-17J), US EPA Region V, 77 W. Jackson Blvd., Chicago, IL 60604-3507.

The MACT 5D boilers are:

Two identical natural gas fired (fired tube: flame inside tubes) boilers (Cleaver Brooks CB Package Boilers, Model CS-700-600) of design capacity 25 million BTU per hour (5.8 MW) each.

BASF must submit an Initial **Compliance Status Report** on or before January 31, 2016 (§ 63.9(h)). I reminded BASF to submit this CSR before January 16, 2016.

In addition, BASF mailed the initial notification letter dated March 2, 2005 to both US EPA and DEQ-AQD. The **Boiler NESHAP / MACT initial notification** was due March 12, 2005. The boilers were not subject to emission limits. However, on June 8, 2007, US Court of Appeals has mandated that EPA vacate the Boiler MACT Rule in its entirety. MDEQ-AQD never decided what to about possible 112(j) case-by-case MACT determination.

BASF burns only pipeline quality natural gas (FG-NG-BOILER-MACT-5D-MJRSOURCE-EXISTING, SC III.1); the boilers are NOT equipped to burn fuel oil. I reminded BASF officials initial tune-up must be performed by January 31, 2016 (FG-NG-BOILER-MACT-5D-MJRSOURCE-EXISTING, SC III.1). Also, one-time energy assessment (EA) must be performed by January 31, 2016 (FG-NG-BOILER-MACT-5D-MJRSOURCE-EXISTING, SC III.4); BASF does not operate under **ISO 50001** Energy Management System for continuous improvement of energy performance, energy efficiency, energy consumption and for reduction of energy use, energy costs, greenhouse gas emissions (GHG), etc..

Neither boiler is equipped with oxygen trim system (FG-NG-BOILER-MACT-5D-MJRSOURCE-EXISTING, SC III.1: annual tune-up).

Oxygen trim system means a system of monitors that is used to maintain excess air at the desired level in a combustion device over its operating load range. A typical system consists of a flue gas oxygen and/or CO monitor that automatically provides a feedback signal to the combustion air controller or draft controller.

FG-COLDCLEANERS (13)

BASF has 13 cold-cleaners using organic solvents; none use halogenated solvents. Therefore, the cold cleaners are **not subject** to NESHAP for Halogenated Solvent Cleaning (40 CFR, Part 63, Subpart T; Federal Register / Vol. 59, No. 231 / Friday, December 2, 1994).

Two (one dirty for first stage and other relatively clean for second stage cleaning) 5-gallon buckets are placed in a closed container with a lid. Each 5-gallon container has a lid as well. In addition, there is one Safety-Kleen cold-cleaner with a lid, which is pneumatically powered, to keep it closed when not in operation (it was closed during FY 2012 inspection). Operating instructions are posted. Safety Kleen does not service the unit. BASF

uses its own proprietary degreasing solvents and manages waste according to applicable hazardous waste laws and regulations. I observed the machine while the lid was operating.

A cold-cleaner is exempt from Rule 336.1201 pursuant to Rule 281(h) or Rule 285(r)(iv). Existing cold cleaners were placed into operation prior to July 1, 1979. New cold cleaners were placed into operation on or after July 1, 1979. I asked BASF officials to ensure that a cold-cleaner is kept closed at all times when idled. I gave to Mr. Ozimek copies of DEQ's "cold-cleaner operating procedures". During FY 2016 inspection, the procedures were posted. During the FY 2016 inspection, I gave additional decals to Mr. Howard Stephan.

Power assisted lid cold-cleaner is located in Red Label Solvent Storage Room. Only BASF proprietary solvents are used. The power-assisted unit is mostly used for cleaning dampers.

50-75 gallons per month solvents are used.

Emergency Generator: FG-CI-RICE-MACT4Z

One 275-kilowatt emergency diesel generator (Onan 275 Genset Model No. 275 DFM L33477N Onan Serial No. C890214181 and Engine Model No. NTA 855G1 & Serial No. 30314399) is present.

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1,000 kW (1 MW) generator is equivalent to 8.2 million BTU per hour heat input based upon 60 gallons per hour fuel (diesel) consumption at peak load and 137,000 BTU per gallon of diesel. Therefore, the generator (<10 million BTU per hour heat input internal combustion engines) is exempt from Rule 336.1201 (Permit-to-Install) pursuant to Rule 285(g).

NESHAP / RICE MACT 4Z, 40 CFR Parts 60 and 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines; New Source Performance Standards for Stationary Internal Combustion Engines (ICE);, Page 6674 Federal Register / Vol. 78, No. 20 / Wednesday, January 30, 2013 / Rules and Regulations / Final Rule. This final rule is effective on April 1, 2013. BASF's Emergency CI (Diesel) RICE is not subject to NSPS 4I.

FG-CI-RICE-MACT4Z, SC III.1

Change oil/filter & inspect hoses/belts every 500 hours or annually; inspect air cleaner (CI) or spark plugs (SI) every 1,000 hours or annually. No emission standards.

Oil and filter were changed on 12/06/2015.
Hoses and beltlers were inspected on 04/24/2015

FG-CI-RICE-MACT4Z, SC IV.1

Non-resettable hours meter is present:

December 15, 2015 reading: 726 hours. 29.7 hours used in CY2015-YTD-DEC2015. 3.3 hours of 29.7 hours was for emergency.

Conclusion:

I did not find any compliance problem with permit conditions at the time of the inspection. This is a small source of VOC and HAP. Boiler MACT 5D and CI RICE MAC 4Z sources are present.

NAME J. Hennehall DATE 12/21/2015 SUPERVISOR CJE