OAR-2002-0058

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PPG Industries
Bringing innovation to the surface.™

February 21, 2012

FEB 28 2012

EPA Docket Center
U.S. Environmental Protection Agency
Mail Code 2822T
1200 Pennsylvania Avenue, NW
Washington, DC 20460

RE: Docket ID No. EPA–HQ–OAR–2002-0058, National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters (76 *Federal Register* 80598, December 23, 2011)

Dear Sirs or Madams:

PPG Industries, Inc. ("PPG") appreciates the opportunity to comment on the U.S. Environmental Protection Agency's (EPA) Proposed Rule – National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters (76 FR 80598, December 23, 2011).

PPG is a global manufacturer and supplier of chemicals, glass, fiber glass, and coatings and has thirteen large chemical, coatings, and glass manufacturing facilities in the US that will be impacted by the rulemaking. One facility operates three large coal-fired boilers to produce steam and electricity and two facilities use a clean-burning hydrogen process off-gas to produce steam.

PPG Industries, Inc., as an active member of the American Chemistry Council (ACC), joins in and supports the comments submitted by the ACC concerning the proposed NESHAP for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters. PPG provides the following comments to supplement and support the comments submitted by ACC.

If you would like to discuss any of the comments in more detail, please contact me at 412-492-5597 or emcmeekin@ppg.com

Very truly yours,

Elizabeth McMeekin

FEB 22 2012

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1. **PPG Supports EPA's Proposal to Establish Work Practice Standards for Natural Gas, Refinery Gas, and Other Gas 1 Fired Boilers and Process Heaters**

PPG strongly supports the use of work practices as MACT for gas-fired boilers for the following reasons:

- HAP emissions from gas-fired boilers and process heaters are extremely low and cannot be reliably measured at these low levels due to deficiencies in both laboratory analysis methods and stack sampling methods.
- Detection limits reported in the test reports received by EPA during the boiler MACT data collection efforts varied greatly, pointing to the lack of repeatability of measurements at these very low levels.
- As the majority of source emissions are below the reference method quantitation limits, the standard is appropriately set as a work practice standard and not an emission standard, since sources would not be able to accurately measure emissions against any numerical standard
- A correlation between a reduction in CO concentration and a corresponding reduction in organic HAP emissions below a CO concentration of approximately 100 ppmv for Gas 2 fueled sources has not been definitively established. Thus, setting a very low standard for CO does not ensure a proportional reduction in the organic HAP emissions, and may have the unintended consequence of increasing emissions of other pollutants such as nitrogen oxides due to the combustion of additional fuel and suboptimal operating conditions.
- Good combustion practices and periodic tune-ups as work practices will ensure proper operation of gas-fired units and continuous minimization of emissions. In fact, for gas-fired sources, these types of practices serve as MACT currently for minimizing organic HAP emissions.
- Many gas-fired boilers and process heaters do not have vents or stacks to which EPA measurement methods can be applied, and to significantly modify the stacks would be technically infeasible in some applications and would be economically infeasible in many others.
- Measurement infeasibility and control cost issues serve to justify the technical and economic feasibility criteria under §112(h) for requiring work practices in lieu of numeric emission standards.

In addition, work practices are appropriate for units burning other process gases meeting the definition of "Other Gas 1 fuel" for the same reasons.

- Many petrochemical and chemical process gases have HAP emissions at the ultra-low levels of natural gas. Measuring these ultra-low levels of HAP emissions is not feasible using existing methods.

PPG, like many integrated chemical plants, uses process gases from processing areas as fuels in boilers and process heaters. PPG's process gas is a clean-burning hydrogen. The use of this hydrogen is critical to maintaining energy efficiency and cost efficiencies at our sites. Based on the extremely low numeric standards proposed for Gas 2 units and the uncertainty surrounding the efficacy of expensive add-on controls, PPG would

likely be forced to burn these process gases in an non-optimal manner, such as routing this fuel to flares or other combustion sources at the site, and replacing the lost fuel value by burning more natural gas. Forcing this switch is contrary to the nation's goal of reducing fossil fuel use and encouraging use of alternate energy sources.

2. PPG supports EPA's Revised Definition of Other Gas 1 Fuel

PPG supports EPA's proposed revised definition of "Other gas 1 fuel" and the Gas 1 opt-in provision for gases other than natural gas and refinery gas proposed by EPA. We agree with EPA's proposed mercury content criteria, and we believe that additional criteria such as Btu content and organic HAP content are not appropriate. Some process gases, such as hydrogen, may have lower Btu content than natural gas, or higher organic HAP than natural gas, but are still as clean burning as natural gas.

3. PPG Supports, and Believes EPA is Justified in Setting a Work Practice Standard for Dioxin/Furan

PPG supports a work practice approach for dioxin/furan emissions from industrial boilers. Dioxin/Furan emissions cannot be reliably measured and there is no technically feasible means of ensuring continuous control of these emissions.

EPA has very little data on dioxin/furan emissions from industrial boilers and process heaters. In addition to the lack of actual data, the science is uncertain on how dioxin/furan emissions are formed and could be controlled from industrial boilers and process heaters. (Docket item EPA-HQ-OAR-2002-0058-0287[1] contains an extensive discussion on this subject.) While industry has experience controlling dioxin/furan emissions from sources such as municipal waste combustors where dioxin/furan emissions occur at much higher levels, there is no data showing that dioxin/furan emissions can be controlled using add-on control technology at the ultra low levels reported by boiler/process heater sources in the industrial boiler MACT ICR testing program.

Quantifying the actual, extremely low or non-existent dioxin emission levels for the Industrial Boiler MACT floor units is technologically impracticable and thus, it is not feasible to prescribe or enforce an emission standard for dioxin/furan emissions for these units. Therefore, EPA has ample authority and justification under Clean Air Act Section 112(h)(1) to establish a work practice standard for dioxin/furan in the Boiler MACT, as was done in the recently finalized Mercury and Air Toxics Standard (MATS, or EGU MACT). The required tune-ups and other emissions reductions in the Industrial Boiler MACT will result in improved combustion and minimize dioxin/furan formation without establishing a numerical emission standard.

[1] Chlorinated Dioxin and Furan Formation, Control, and Monitoring, Presented at an ICCR Meeting, September 17, 1997.

4. PPG believes that EPA should establish separate subcategories for Hg and HCl for Coal and Biomass Boilers

PPG believes that EPA has the authority to, and should, define separate subcategories for coal and biomass boilers for setting emissions limits for Hg and HCl. PPG refers EPA to ACC's extensive comment discussion (filed Feb. 21, 2012) on this topic and reiterates specific points herein:

- EPA In the preamble to the December 2011 proposed rule (76 Fed. Reg. 80607), EPA solicits comments on its decision in the March 2011 final rule to combine biomass and coal-fired units into one subcategory for the fuel-based HAPs (PM (as a surrogate for non-Hg metals), HCl, and Hg). EPA had proposed separate standards for biomass and coal-fired units in the June 2010 proposed rule. To establish CO standards, EPA further subdivided coal into stoker, pulverized coal, and fluidized bed, and subdivided biomass into stokers, fluidized beds, suspension burners/Dutch ovens, and fuel cells. The June 2010 proposed rule placed certain combination-type units designed to burn both biomass and coal in the coal subcategory if they burned at least 10 percent coal on a heat input basis as an annual average. In justifying these subcategories, EPA recognized the differences between biomass and coal-fired units.
- In the March 2011 final rule, EPA grouped coal fired boilers with biomass fired boilers for fuel based pollutants (Hg, HCl and PM) into a single solid fuel subcategory. See 76 Fed. Reg. 15612, Table 1. EPA has no discussion either in the March 2011 final rule MACT Floor memo or the March 2011 final rule preamble explaining its rationale for selecting the recommended approach (one solid fuel subcategory) over the alternative approach (to subcategorize coal and biomass) for fuel based pollutants. Finally, no mention is made of this alternative in the December 2011 Proposal. The solid fuel grouping is ripe for reconsideration because it appeared for the first time in the March 2011 final rule, and hence the public did not have an opportunity to comment on it. EPA has offered no further explanation of its decision in the record to the reconsideration proposal.
- EPA has acknowledged boiler design considerations driven by fuel type in a similar source category MACT standard – the MATS Rule (February 16, 2012). In the May 3, 2011 Utility MACT proposed rule (see page 25037), EPA observed significant differences in mercury emissions between boilers burning high-rank and low-rank coals and concluded that the different mercury emission standards were appropriate for these two different fuel types.
- Boilers designed to fire coal are fundamentally different than biomass units. A boiler designed to burn coal as its primary fuel cannot burn biomass without experiencing unacceptable performance degradation, and vice-versa, due to the differing chemical constituents of the ash, and the significantly higher moisture in biomass versus coal.
- Defining the emissions limits for Hg and HCl based on a combined coal/biomass subcategory results in artificially low Hg and HCl emissions standards for coal-fired boilers. The consistent achievability of these low emissions limits for most coal-fired boilers is very uncertain. Weighing the high cost of

installing controls on these coal-fired boilers and the uncertainty of achieving consistent compliance even with the controls, many facilities, such as PPG's, may be forced to shut down their coal-fired boilers.

5. **PPG agrees that Defining Work Practices for Periods of Startup And Shutdown is Appropriate**

EPA has proposed to expand upon the work practice requirements in the March 2011 rule by adding specific requirements to employ good combustion practices, train operators on proper startup and shutdown procedures, and maintain records (see Table 3 item 5 of the proposed rule). We agree that these are appropriate requirements. We also agree with the clarification EPA has made to Table 2 to indicate that emission limits do not apply during periods of startup and shutdown, as work practices and not numeric emission standards apply during these times as provided in 63.7540(d).

EPA requests comment on whether a maximum time should be included in the startup and shutdown definitions. We believe that this is not necessary, as safety and proper operation of the boiler and associated equipment dictate the amount of time that is needed for startup and shutdown and vary from unit to unit and site to site. Overly prescriptive and non-facility-specific requirements can actually be counterproductive, restricting the operators' flexibility in a way that hampers their ability to troubleshoot or respond to an event, or that compromises safety.

EPA has included a threshold of 25 percent load in its definition of startup and shutdown. Some units have a minimum stable operating load that is higher than 25 percent (e.g., stable operation for a stoker boiler may not be reached until 60 percent load). Therefore, EPA should revise the startup definition to allow facilities to determine the minimum stable operating load on a unit-specific basis and include the minimum stable operating load that defines startup and shutdown and the proper procedures to follow during startup and shutdown in a site-specific plan.

We believe the following types of concepts could be used as being indicative of a boiler or process heater reaching the end of a startup period (the beginning of a startup would occur with first introduction of fuel with combustion in the furnace):

- Boiler or process heater firing its primary fuel for a period of time adequate to provide stable and non-interrupted fuel flow, stable and controlled air flows, and adequate operating temperatures to allow proper fuel drying and air preheat as applicable.
- Emissions controls in service with operating parameters such as flow rates and temperatures being controlled and stable.
- Boiler or process heater supplying steam or energy output to a common header system or energy user(s) at normal operating conditions including pressure, temperature, and above minimum operational output flow rate, as applicable to the unit.

Similarly, we believe the following types of concepts could be used as being indicative of a boiler or process heater beginning a shutdown period (the end of a shutdown would occur with the cessation of combustion of any fuel in the furnace):

- Cessation of introduction of the last remaining primary fuel to the furnace, whether or not a supplemental support fuel is being used.

- Cessation of emissions control system sorbent or other reagent injection.
- Lowering the fuel firing rate to the point that automatic control is no longer effective or possible.
- Lowering of operating rates to the point that emissions control systems no longer can be controlled or be effective due to low flow rates, low temperatures, or other issues.
- Lowering boiler or process heater output to the point that steam or energy output no longer meets operational required conditions of pressure, temperature, or flow.

Boiler and process heater owners/operators should establish specific operating conditions and parameters defining startup and shutdown in standard operating procedures for each affected unit so that it is clear when each unit is in either startup or shutdown mode. Procedures should also be used to guide operations purposely through startup or shutdown periods so that protracted periods in startup or shutdown mode beyond that envisioned in the procedures are avoided. Each startup and shutdown should be documented relative to elapsed time and timing of actions prescribed in the procedure so that problems are effectively identified and corrected in a timely manner.

However, we do believe if the startup and shutdown definitions are finalized with a load threshold, EPA should provide clarity for what requirements units operating in standby mode at loads less than that threshold (e.g., 25 percent) must meet. We believe that work practices are appropriate for units operating in standby mode at very low load. Boilers or process heaters operating in a standby mode would typically be combusting clean burning liquid or gaseous fuels during those periods.