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## Why EPA's Work Practices for Dioxin/Furan in the Industrial Boiler MACT Are Scientifically Justified

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In December 2011, EPA proposed dioxin/furan (D/F) work practices for all subcategories of industrial boilers and process heaters. Previously, in the March 2011 rule, most of the limits were lower than any other D/F standards EPA has set in the past for various waste combustion source categories. EPA should retain the work practice standards for D/F standards in the final re-proposed rule given measurement uncertainty and the other reasons outlined below.

- **D/F levels are too low to reliably be measured:** The majority of the data collected in order to set the D/F standards for industrial boilers are at levels below the capability of the analytical laboratories to detect the emissions of these compounds (all but one of the test runs used to set the Boiler MACT limits are marked as “detection level limited”). Most of the test data are labeled as being below the method detection limit and the remainder are often flagged as being below the level the laboratories felt could be reported with confidence.
- **With D/F levels so low, measurement errors are likely to dominate:** All stack emission measurements have errors associated with sampling, sample handling, and sample analysis. When emissions are much higher than the potential for errors, there is a high degree of confidence in the measured value obtained from such test. However, as the measured value decreases, the potential contribution of error to the measured value increases, thus decreasing the confidence level in the measured value until the point where the measured value cannot be distinguished from the random error. This is the case with the boiler D/F data and much of the CISWI D/F data which are mostly detection limit limited.
- **D/F test results cannot be used to set numeric limits:** It is not appropriate to use detection level limited data for the purposes of establishing regulatory limits because the detection limit of an analytical method is the lowest concentration that can be distinguished from a blank and has high uncertainty. To set emission standards observed data must be above the test method quantitation limit which is defined as the smallest concentration of the substance which can be measured with a known accuracy.
- **EPA should stick with the longstanding rules:** Quantitation limits of test methods have great significance when measuring very low concentrations of pollutants. In practice, no reported value below a method's quantitation limit should be treated as a real value; it should only be treated as a measurement below the method quantitation limit. This supports EPA's conclusion that a work practice is justified.

- **A work practice standard is justified for industrial boilers:** The current D/F test methods were developed over 30 years ago to measure D/F at concentrations then found in some types of waste incinerator exhaust (levels orders of magnitude higher than those found in exhaust from industrial boilers and CISWI energy recovery units). Using these methods, quantifying actual dioxin emission levels for the Boiler MACT floor units is technologically impracticable. Thus, EPA’s decision to establish a work practice standard for D/F in the boiler MACT rule is consistent with Clean Air Act Section 112(h)(1) and is similar to the recently proposed Utility MACT. The required tune-ups and other emissions reductions in the Boiler MACT will result in improved combustion and reductions in already low D/F emissions without establishing a numerical emission standard.
- **EPA got it right in Utility MACT as well:** In EPA’s recently finalized Utility MACT (77 FR 9304), there are no dioxin/furan standards for coal and oil-fired EGUs because the majority of the data were non-detect (ND). The levels of D/F reported by industrial boilers are very low, similar to utility boilers. EPA stated in the Utility MACT proposal preamble, “Overall, the available test methods are technically challenged, to the point of providing results that are questionable for all of the organic HAP.”<sup>1</sup> As a result, work practice standards are justified because “EPA considers it impracticable to reliably measure [D/F] from these units.”<sup>2</sup> Work practice standards for industrial boilers are justified for the very same reason.
- **Industrial boilers are like utility boilers when it comes to D/F:** The Utility MACT preamble indicates that EPA believes D/F formation is limited by the lack of available chlorine or by a high sulfur to chlorine ratio<sup>3</sup>. The same principles apply for some industrial boilers and process heaters. For example, coal and residual oil-fired boilers will have high sulfur to chlorine ratios and some types of biomass boilers will have low available chlorine.
- **There are inadequate industrial boiler data to set a standard:** If EPA were to ignore the limitations of the available data, one-time stack test data from only 1 or 2 units would be used to set D/F limits for each subcategory. Such an approach would not provide representative emissions data to determine the performance of the top 12 percent of units for setting the standards.
- **The record contains detailed supporting information:** Several sets of comments have been submitted that provide more detail on the points including:
  - AF&PA et al Comments on the proposals at EPA-HQ-OAR-2002-0058-3373
  - AF&PA Comments on the June 2010 proposal at EPA-HQ-OAR-2002-0058-3213 and reconsideration petition (see in particular Appendix A) at EPA-HQ-OAR-2002-0058-3293
  - NCASI Comments at EPA-HQ-OAR-2002-0058-2804

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<sup>1</sup>76 FR 25040

<sup>2</sup> *Id.*

<sup>3</sup>76 FR 25023