



August 16, 2002

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Attn: Docket number RCRA-2002-0019

The Coalition for Responsible Waste Incineration (CRWI) is pleased to submit comments on the proposed database noticed in NESHAP: Standards for Hazardous Air Pollutants for Hazardous Waste Combustors (Final Replacement Standards and Phase II) – Notice of Data Availability (67 FR 44452, July 2, 2002). CRWI represents 27 companies with hazardous and solid waste combustion interests. These companies account for a significant portion of the U.S. capacity for hazardous waste combustion. In addition, CRWI is advised by a number of academic members with research interests in hazardous waste combustion. Since its inception, CRWI has encouraged its members to reduce the generation of hazardous waste. However, for certain hazardous waste streams, CRWI believes that combustion is a safe and effective method of treatment, reducing both the volume and toxicity of the waste treated. CRWI seeks to help its member companies both to improve their operations and to provide lawmakers and regulators helpful data and comments.

CRWI has several general concerns about the database. While not being able to fully examine the database, several potential discrepancies have been observed. There may be explanations but the short comment period will preclude pursuing answers. We are also concerned about commenting on the database without knowing the method used to analyze the data that is included. However, we will continue to work with the Agency to get to a database that can be used to develop the permanent replacement standards.



Some of the confusions have been cleared up after consultation with Agency staff. For example, an incinerator operated by Lilly was deleted in the current database because staff understood that it had stopped burning hazardous waste. That is not the case and Lilly personnel will respond appropriately. However, the concern is that Agency staff used circumstantial evidence rather than confirming the information with facility staff. CRWI suggests that the reason for removing any facility from the database be re-examined and documented to ensure that the logic for the action is based on fact. There are other confusing issues in the database. One example is why certain facilities have multiple data (old and new) while others have only the newest test results. There may well be a logical explanation for this but the NODA, the database, and other support documents do not address why individual actions were taken. Another point of confusion is why does the Safety-Kleen Deer Park facility have four Phase I ID numbers (221, 488, 489, and 609) when they have two trains using a common stack. Does this mean that EPA considers them four different units at the same location? Other locations have found multiple errors in their individual data sheets. While these will be reported by those facilities, we suggest that EPA re-check all data not confirmed or corrected by individual facilities. We realize that EPA has time constraints to develop the permanent replacement standards. However, the Agency has to develop a correct, consistent database from which to develop these new standards. Failure to achieve this will put the Agency right back in its current situation some time in the future.

CRWI is also concerned that the current database contains data from facilities that have already upgraded to meet the interim standards. This is effectively MACT of MACT. We do not believe that this is what Congress intended when the 1990 amendments were passed. It also punishes facilities that are complying early while rewarding the facilities that wait. Early compliance is beneficial for the environment by reducing emissions before they are required. That behavior should be rewarded instead of being punished. CRWI does not believe that EPA should follow such policies.

In an effort to address these issues, CRWI suggests that EPA develop one database that has all data in it. This would include old, new, before and after configuration changes, etc. However, not all this data is appropriate for use in developing individual standards. EPA needs to develop a consistent method of choosing the data to be used to determine the standards for each individual pollutant (see our specific comments on



suggested criteria). A full explanation of the process is necessary. Currently, for many facilities, the database only includes recent (year 2000 and/or 2001) test burn results.

In addition, we suggest that all possible subcategories be developed and included. Until the exact method of analysis is decided, it can not be know exactly how the data will be re-arranged. Eliminating or not including subcategories could result in improper analysis of the data. Because the contents of the database and the method of analysis are so linked, we believe that it is not appropriate to eliminate data until the method of analysis is defined.

Thank you for considering these comments. If you have additional questions, please contact us at 202-452-1241 or [crwi@erols.com](mailto:crwi@erols.com).

Sincerely yours,

Melvin Keener, Ph.D.  
Executive Director

cc: CRWI Board  
Jim Berlow, EPA  
Frank Behan, EPA  
Mike Galbraith, EPA



## Specific Comments

CRWI's specific comments are based on the questions asked in the NODA.

### 1. Are all sources included?

CRWI is concerned that certain sources from the 1996 data base were deleted for no stated reason (e.g., a rotary kiln incinerator at Lilly-Clinton and a liquid incinerator at Lilly-Lafayette). Upon further discussions with the agency, it was determined that EPA thought these units would be closed and as such did not include them in the revised data base. However, section VI. A. of the federal register notice states that "the data bases do not include information from sources no longer burning hazardous waste" and .... we conclude that data from currently operating combustors are adequate." The *Federal Register* criterion is distinctly different than what EPA apparently practiced in developing the database. In addition to apparent inconsistent criteria being applied, CRWI is not sure how EPA gathered the information used to base its decisions on which sources should be included in the data base. We suggest that EPA re-examine the reasons for removing any facility from the database to make sure the reason is documented and in accordance with established criteria. Relying on a rumor that the facility is closing should not be sufficient to remove that data from the database. If there is any doubt, EPA should call the facility and verify the information. This should not be difficult. To assist in this endeavor, CRWI will help determine appropriate contacts at facilities wherever possible.

### 2. Are there sources that should be deleted?

#### a. Generic Concerns on Analytical Methods.

CRWI finds it difficult to determine what data should be included and what data should be excluded until the analysis method is known. CRWI believes that the elimination of data prior to establishing the analysis method may lead to a biased data set, something everyone is trying to avoid. After going around in circles several times on what data to include, finding it depended upon the analysis method, we decided that the most logical method would be to include all data for all sources. This would include multiple data runs for each facility, regardless of when the data was taken. When an analysis method is chosen, then each data line can be examined to determine if should be



used in that analysis (e.g., if the means for “normal” conditions are used, all other data should be excluded). Thus, we would advocate that all data be included and care be taken in creating potential subcategories for each line of data. This would allow easy sorting of the data so the analysis step would not become awkward.

b. Specific Concerns Regarding Chemical Weapon Demilitarization Facilities

Beyond the above generic concerns, CRWI does believe there is one group of incinerators that should have its own subcategory – Chemical Weapon Demilitarization Facilities (CWDFs) – i.e., incinerators specifically designed to handle stockpiled chemical agents coupled with propellants and/or energetics (explosives). Congress has mandated that this unusually dangerous feedstream should be disposed of only at stockpile sites under conditions more stringent than imposed by the Clean Air Act. For instance, in contrast to the MACT “cost-sensitive” equation aimed at measuring the performance of an industrial source category (see Senate Report 101-228 at 168-169), CWDFs are designed and operated to meet the more stringent Congressional mandate of 50 U.S.C. §1521(c)(1), which provides that in carrying out the Chemical and Biological Weapon Program, the Secretary of Defense “shall provide for:

- (A) maximum protection for the environment, the general public, and the personnel who are involved in the destruction of the lethal chemical agents and munitions ...; and
- (B) adequate and safe facilities designed solely for the destruction of lethal chemical agents and munitions.”

For the CWDFs, not only is cost consideration absent from their statutory mandate, but Congress has also specifically directed that these facilities cannot be turned to more traditional hazardous waste combustion once the demilitarization mission is completed. In other words, this explicit Congressional prohibition segregates CWDFs from the rest of the hazardous waste combustion universe, a distinction that should be reflected in the final hazardous waste combustion MACT standards.

Beyond these legal distinctions, it is noteworthy that air emissions from all CWDF incineration facilities are subject to site-specific risk



assessments through their State RCRA permits, a distinction that is generally recognized by EPA as placing a facility outside of MACT jurisdiction. *See NESHAPS: Final Standards for Hazardous Air Pollutants for Hazardous Waste Combustors; Final Rule*, 64 Federal Register 52827, 52840-52843 (Sept. 30, 1999). Also, demilitarization of the United States' chemical weapon stockpile is driven by international treaty obligations, making this subcategory of the combustion universe uniquely temporal and more reflective of international security and local safety concerns than "achievable" performance standards set by other long-term hazardous waste combustors.

Even as early as its 1994 Combustion Strategy, EPA recognized that chemical weapon demilitarization is a unique activity not typical of the hazardous waste combustion universe. *See Strategy for Hazardous Waste Minimization and Combustion*, at §V(A)(2). EPA was correct then, and should carry its first impression of CWDFs into action now. Since September 11, 2001, the demilitarization of chemical weapons has taken on a new urgency. CRWI believes that development of realistic hazardous waste combustion MACT standards includes recognition that chemical weapon demilitarization is not a typical activity of the hazardous waste combustion source category. This distinction would remove legally inapplicable data from the overall MACT pool, and focus EPA's attention on reconciling its MACT expectations with the international resolve to rid the world of chemical weapons.

Based on the above premises, CRWI believes that CWDFs are a separate class of incinerators that should not be included in the same category as other hazardous waste incinerators.

3. Is the data for each source accurate and complete?

CRWI believes that the individual facilities are much better equipped to examine the data and report potential errors in the database and as such will leave it to the individual facilities to develop responses to this question.

4. Do we have comments on EPA's data handling procedures?

a. Non-detects?



As a part of their comments submitted on the Phase II database, Eastman Chemical Company pointed out that EPA was not properly handling data that was reported as "less than." In their response to comments document, EPA dismissed these comments stating that this was not the normal and would not impact the resulting standards. The concern that Eastman pointed out was that a certain method of reporting would lead to substantial underestimation of test results. To illustrate this point, please consider the following example. The front half of a train detected 100 ppm of pollutant X but that pollutant was not detected in the back half of the train. For this example, consider that the detection limit is 5 ppm. This data would be reported as "less than 105 ppm." If the entire 105 value is taken as the non-detect level and  $\frac{1}{2}$  is used, the results in the database would be 52.5 ppm, which is not accurate. A more accurate method would be to take half the detection limit from the back half of the train (2.5 ppm) and add the two giving a value of 102.5 ppm. This is a significant departure from taking half of the entire sum and could result in significantly different standards. CRWI suggests that this concern is not isolated but is the normal way data of this type is reported. In fact, what Eastman pointed out is exactly what EPA recommended in their risk burn guidance document (*Risk Burn Guidance for Hazardous Waste Combustion Facilities* EPA 530-R-01-001, July 2001). The following is taken from pages 168-9 of this guidance document.

"For data reporting to support site-specific risk assessments at combustion facilities, the following reporting convention is recommended when the results from each sampling train have to be summed to arrive at a total train mass:

- If results for all fractions are non-detect, then the full RDLs (or EDLs) should be summed and the results reported with a 'less than' sign;
- If a constituent is detected in some of the train fractions but not in others, then the data should be reported as a range (i.e., 'greater than' the total amount, but 'less than' the total detected amount plus the full RDLs or EDLs for the non-detects). ..."

To get a better idea of common practice in this matter, CRWI asked members how this is handled in the field. We consistently received the answer that the recommendations in the trial burn guidance are followed. Thus, we do not believe that this is an isolated incident but is pervasive



throughout the database. CRWI suggests that it is necessary for EPA to re-examine each value reported as a "less than" number and revise the value in the database to properly reflect what the test actually showed.

This guidance also points out that detection limits are defined a number of different ways and are not always consistently reported (see page 168). Given that non-detects are often defined differently and reported differently, CRWI also suggests that EPA examine the database to make sure the same definition of non-detect is used in every instance. If non-detects are used in the database, all values must be included using a consistent definition for non-detects.

In addition, we believe that the Agency should carefully examine the data to determine what role non-detects will play in the development of the permanent replacement standards. CRWI does not believe non-detects in the database should drive the standards. If they do so, it would make it very difficult to ever show compliance with a standard that is based on a detection limit or  $\frac{1}{2}$  the detection limit. Finally, we would like to point out that the method of developing the standard should be consistent with the test methods for complying with the standard and that no standard should be driven by non-detects.

5. Can we fill in data gaps?

a. Fill in missing source description information

CRWI believes that individual facilities are better equipped to address this question.

b. Is the data from worst-case or normal operations?

CRWI believes that individual facilities are better equipped to address this question.

c. Whether metals data were extrapolated or interpolated?

CRWI believes that individual facilities are better equipped to address this question.

d. Were metals surrogates used?





CRWI believes that individual facilities are better equipped to address this question.

e. Are EPA's new data fields accurate?

1) Classification of the design and operation of the source

After much discussion, CRWI decided that all possible sub-categories should be included in the database. This was based on the concept that once added, the sub-categories do not have to be used but if they are not added during the comment period for the NODA, it may not be possible to add them later. In addition, until the analysis method is chosen, it is impossible to determine what potential subcategories should be included. Thus, CRWI would like the Agency to consider the following possible subcategories for each of the pollutants for incinerators.

PM

- Liquid v. solid
- Wet v. dry
- Chem demil v. all others
- Waste heat boilers (WHB) v. non-WHB
- Ash feed rate

Mercury

- Carbon v. non-carbon
- Chlorine feed rate
- Chem demil v. all others
- Mercury feed rate
- Sulfur feed rate

SVM

- Liquid v. solid
- Wet v. dry
- Feed rate
- Chlorine feed rate
- Physical form of the feed
- Chem demil v. all others

LVM

- Liquid v. solid
- Wet v. dry



- Feed rate
- Chlorine feed rate
- Physical form of the feed
- Chem demil v. all others

- Chlorine
  - Wet v. dry
  - Feed rate
  - Total v. HCl (oxidizing v. reducing environment)
  - Chem demil v. all others

- D/F
  - WHB v. non-WHB
  - Wet v. dry
  - Carbon v. non-carbon
  - MACT of MACT
  - Liquid v. solid
  - Chem demil v. all others

Some of these subcategories overlap with the potential subcategories that EPA proposed in Table 1. We agree with all the potential subcategories in Table 1 and suggest that the possible subcategories above be considered in addition to the potential subcategories in Table 1.

2) Classification of emissions as representative of highest or normal

While the Agency said that it would ignore comments on how the data should be used to set standards, it is virtually impossible to discuss how to define worst case or normal data without some discussion of how that data is to be used. EPA used three criteria for determining whether data was in one of several categories. CRWI agrees that if spiking is used, those test results might be worst case. However, this is not always correct. Consider the following scenario. Facility X enters into an agreement with their permitting agency to spike lead and cadmium at 1.5 times normal feed rates (but at a level below current permit limits) during the trial burn. This rate was chosen to reduce the amount of lead and cadmium that would be emitted during the trial burn and to reduce the chemical costs. After the results of the trial burn are received, the facility is allowed to upwardly extrapolate their feed rates to



their individual permit limits. This facility did spike but the resulting emissions were not as high as if the facility would have fully spiked these two metals. Should that facility be allowed to extrapolate the emissions to their permit limits for the purposes of this database? That could be considered fair since they could have spiked to that level when running the tests but chose not to based on minimizing impacts on the environment. In addition, since SREs increase with increased feed rates (based on EPA's own research), how should including extrapolated results impact the use of SREs?

The second criterion used is a Tier III assumption under BIF. CRWI agrees that a Tier III assumption can be considered worst case.

The third criterion was high emissions. CRWI is not sure why this is included.

After much discussion, CRWI members suggested that a different (or perhaps additional) criterion may be more appropriate. This criterion is simple in concept but will take some work to apply. The concept is based on the purpose of each test. If a facility uses a test to establish permit conditions for a certain pollutant, it should be designated as such in the database and could potentially be designated as worst case. If that test is not used to establish permit conditions for that pollutant, it should receive a different designation such as normal. For example, a test condition where ash feed rates were maximized would be a good candidate for designation as worst case for the PM database but a test condition where DRE of a POHC with little or no ash feed should be designated as normal, even though PM concentration was measured. In addition, CRWI is not sure why all the "in between" categories are needed. Either a test is designed to establish permit conditions for a certain pollutant or it is not. There does not seem to be any real reason for any other subcategories based on the testing conditions. CRWI suggests that EPA go back through the data and determine the purpose of each test condition and use that information to properly designate each row of the database.

Should EPA decide to accept this suggestion, CRWI members will assist in this effort by applying this criterion to their own facilities.

### 3) Characterization of soot blowing



The BIF rule requires that soot blowing be included in one run. It specifies how PM emissions are to be factored to account for soot-blowing. Most Certification of Compliance reports contain sufficient detail about soot blowing (e.g., which run, duration, calculations, etc.) for EPA to make this determination. CRWI believes that EPA should already have the data to make these determinations. Where data is missing, individual facilities are better equipped to make these corrections.

- f. Make sure source categorization is accurate based on subcategories listed in Table 1.

CRWI agrees with the potential subcategories listed in Table 1. However, from the NODA, it is unclear exactly what these subcategories represent. Does a subcategory for waste heat boilers imply there is another category for non-waste heat boilers? Does this apply for all pollutants? CRWI suggests that EPA clearly establish criteria for designating each subcategory used. To make the subsequent analysis easier, CRWI suggests that EPA establish a data column for each potential subcategory and fill that column in for each facility. While this will take some effort at the front end, it will make the analysis step much easier. CRWI also suggests EPA consider the additional potential subcategories outlined in comment 5(e)(1).

6. Do we agree with the agency's criteria for classifying data as worst case?

CRWI is concerned with the many different methods of classifying the data as worst case. The purpose of this classification is not clear. There have been indications that the Agency will consider variability differently for "worst case" than they will for "normal" data when determining the permanent replacement standards. CRWI is not sure how this can be done. Does this mean that EPA will only use "worst case" or "normal" data when setting the permanent replacement standards? If so, does this mean that "worst case" will be used for one pollutant and "normal" will be used for another? CRWI also fails to see how the "in between" categories can be used. It would be statistically difficult to use different variabilities when using a mixed set of "worst case" and "normal" data to calculate the permanent replacement standards. Instead of using these criteria in setting the replacement standards, CRWI suggest that the Agency follow the suggestions outlined in section 5(e)(2) of our



comments and use the reason for the test to include or exclude data for a particular analysis. However, we should make it clear that we believe that all data should be included in the database. Once in, choices can be made and explained as to what data is used for a particular analysis. However, if the data is not in the database, it can not be used in any subsequent analysis.

7. Should only the most recent data be included or should all data from a source be included?

CRWI believes that all the data from a source should be "in" the database. However, CRWI believes the data from a given test condition is sometimes appropriate for the use in establishing one emission standards but not appropriate for the use in establishing other emission standards. For example, facility X conducted a trial burn years ago with 3 test conditions. Test condition 1 is designed to demonstrate DRE, test condition 2 is designed to demonstrate high chlorine feed rate and the compliance with a chlorine emission limit, as well as high metals feed and compliance with some specific metals emission rates, and a third test condition is a risk condition. It is appropriate to use the data that was designed to demonstrate compliance with the pollutant of concern to establish the emission standard for that same pollutant. For this hypothetical situation, CRWI believes that if metals or chlorine data were collected during test condition 1 (a DRE demonstration), it would not be appropriate to use the data for establishing the metals or chlorine standard. Test condition 2 data would be appropriate for establishing the chlorine and specific metals if that test was designed to demonstrate compliance for chlorine and metals. Test condition 3 may not be useful for any of the standards, depending upon the exact criteria for the test, but may be useful in determining variability.

Secondly, CRWI believes that some of the most recent data represents MACT of MACT for many pollutants. CRWI believes that Congress never intended for MACT of MACT data to be included in the pool of data used to determine the top 12% of existing sources. Section 112 (d)(3)(A) says, "the average emission limitation achieved by the best performing 12 percent of existing sources (for which the agency has information) excluding those sources that have, within 18 months before the emission standards is proposed or within 30 months before such standards is promulgated whichever is later, first achieved a level of emission rate of emission reduction which complies or would comply." The later of these



two dates is March 30, 1997, based on the initial promulgation of the rule. The database is full of data from testing events well after 1997. Numerous examples exist from many facilities, where data was collected after the installation of WESPs to reduce metals and particulate emissions, carbon injection or carbon bed systems to reduce dioxin/furans and/or mercury emissions, even additional wet scrubbers have been added to reduce HCl/chlorine emissions. CRWI believes that the CAA is very clear, and the data from sources after the time period defined in section 112 (d)(3) was not intended to be part of the pool of data.

The legal loop on the duration for setting the MACT pool was closed by §112(d)(10), which provides that the MACT rule becomes effective upon promulgation by EPA. While §112(d)(6) authorized EPA to review and update its MACT standards and, presumably its MACT pool, EPA review of the MACT standards is statutorily restricted to changes prompted by "developments in practices, processes, and control technologies." Here, the only development prompting expansion of the MACT pool is judicial vacature of EPA's original rule. Section 112(d)(10) reflects Congress' intent to establish a regime of air toxic controls on predetermined source categories based upon industry performance on a date certain. In response to a judicial setback, EPA cannot arbitrarily slide that date forward to update the combustion MACT pool when (1) to CRWI's knowledge, the §112(d)(6) authority to review and revise MACT standards has never been invoked for any other source category; (2) EPA is still struggling to meet its baseline MACT promulgation mandate; and (3) the only hazardous waste combustion industry practices that have been changed from 1996 to present have been in anticipation of the effective date of the proposed MACT Rule.

Nothing in the statute addresses the current situation with the HWC MACT standards. While it could be argued that the 30 months would apply to the planned June 14, 2005 date, this would include data from facilities that had already upgraded to meet the interim standards. This hardly seems fair to force facilities that have already upgraded to meet the interim standards to drive the standards setting for all facilities. This punishes the early compliers while rewarding the facilities that wait until the last minute. CRWI does not believe that this is a policy objective EPA should pursue.

Other Points



1. For mercury, it should be pointed out that few facilities spike mercury. This makes it very difficult to find appropriate data to set the emissions limits for mercury. It may be necessary to develop an entirely different method for determining the permanent replacement standard for mercury.
2. An additional point was made that certain facilities had data removed and others did not. For example WTI has data back to 1993 (pre and post carbon injection) while others have only the most recent data included. The Agency did not seem to be consistent in what data was included and what data was excluded. CRWI suggests that EPA include all data in the initial database. When the database is used to develop the permanent replacement standards, data can be examined and accepted or rejected (based on a consistent set of criteria) based on the method of analysis. It is impossible to know what data is appropriate to use until the method of analysis is decided. Thus, EPA must include all data collected. Elimination of data without knowing what the analysis method will be could create a biased dataset, something EPA needs to avoid.
3. EPA's mandate from Congress in the 1990 CAA was to establish "the average emission limitation achieved by the best performing 12 percent of the existing sources". CRWI believes and interprets this to mean top 12 percent of the existing facilities with equal weight to each facility. By taking averages of the entire pool of reported test conditions; facilities with more test reports and therefore more data points in the average are over-represented. Therefore, CRWI believes it is appropriate to establish one representative stack emission concentration for each pollutant or group of pollutants (SVM, LVM) for each facility. The process of determination of the standards should therefore first involve the inspection of the body of data. For each pollutant, the agency should look at the body of data for each facility and establish the most appropriate stack emission concentration.

Often this value should be the average of the results from several test conditions; however, the most appropriate and representative value may be the results from a single test condition. Included data should also be the results of a testing effort that was deemed collected with appropriate data QA/QC methodologies and that was collected with the objective of demonstrating compliance with the pollutant for which that standard is being established. In other words, the data should be quality and representative of a compliance test for the pollutant of concern. Any work process for determination of the average of the top 12% that



includes multiple data points from any one facility is fundamentally flawed because it over-represents the representation of an individual facility. The flawed work process does not meet the mandate of Congress as set forth by Section 112 (d)(3).

CRWI believes that the Phase II database should not be limited to only the most recent data set. One challenge the agency faces is to determine how to account for variability as it develops MACT standards. Looking at the variability in emission results achieved during multiple tests of the same unit under similar operating conditions (as is the case with many COC tests) may provide valuable insight into normal emissions variability that may be experienced just due to routine operations variability, sampling variability, analytical variability, etc.

4. During the last part of the comment period, CRWI has become aware that some of the calculations for percentage of non-detects may be suspect. While we have not had a chance to determine the extent of these potential errors, we would urge the Agency to re-check these calculations to make sure they are done properly.