COMMENT RESPONSE DOCUMENT
ADDRESSING THE PUBLIC COMMENTS RECEIVED PERTAINING TO THE ECONOMICS PEER REVIEW (August 1996)

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INTRODUCTION

Background and Purpose of Document

As part of the rule development process, the Agency initiated a peer review of the proposed rule, preamble and relevant supporting background documents in three subject areas of the rule, including the economic analysis. The review panel members were tasked with conducting a comprehensive and critical review of the proposed rule in their designated subject areas, addressing a set of questions pertaining to the technical basis of the approaches adopted by the Agency, and providing comments and/or recommendations where warranted. Each subject area panel prepared a summary report highlighting the key points of discussion, including the consensus reports or the dissenting opinions. Copies of the peer review panel report of each subject area and individual review comments of each panel member were made available in the docket. In August 1996, EPA provided a notice of data availability (NODA) and request for comments on these peer reviews.

The Agency received numerous comments on the NODA, including comments on the economics peer review. This "Response to Comments" document addresses public comments pertaining to the peer review of the economic analysis. EPA reviewed these comments and, where necessary, revised methodologies and assumptions employed for the economic assessment of the final rule. Responses to the peer review panel report are presented in a separate document. Throughout this document, we refer to the 1995 regulatory assessment of the proposed standards (Regulatory Impact Assessment for Proposed Hazardous Waste Combustion MACT Standards, Draft, November 13, 1995) as the "RIA," and to the revised 1999 economic assessment document prepared for the Final Rule (Assessment of The Potential Costs, Benefits, and Other Impacts of The Hazardous Waste Combustion MACT Standards: Final Rule, 1999), as the "*Assessment*."

Summary of Major Issues

This section summarizes our responses to the major issues raised in the public comments. The italicized text provides the key point from the public commenter; the text below is the summary of EPA's response.

Improve the waste minimization analysis to reflect the full costs (including O&M costs) of waste management alternatives.

> EPA conducted an expanded and significantly improved analysis of waste minimization alternatives. This analysis used a more detailed decision framework for evaluating waste minimization investment decisions that captures the full inventory of costs, savings and revenues, including O&M and product recovery credits, as well as indirect, less tangible items typically omitted from waste minimization analysis such as liability and corporate image.

Revise the property value analysis to address the limitations identified by the economics peer review panel.

EPA did not include property value analysis in the Final *Assessment* due to the limitations of the benefits transfer approach and because property value benefits likely overlap with human health and ecological benefits (which the Agency significantly improved upon in its final 1999 *Assessment*).

Update data inputs with the most up-to-date figures to ensure accuracy of modeling results.

EPA used the most recent and available data in its analysis.

Impacts on small business entities not adequately addressed.

For the 1999 *Assessment* of the Final Rule, EPA conducted a complete assessment of the impacts of the Hazardous Waste Combustion Standards on small business combustion facilities, as well as secondary impacts on small business generators and fuel blenders associated with combustion price increases. EPA's small business analysis adheres to the requirements set forth in the recent March 1996 Small Business Regulatory Enforcement Fairness Act (SBREFA) which amended the Regulatory Flexibility Act (RFA) of 1980.

The RIA falls short of meeting the OMB guidance for conducting economic analysis of proposed rules.

In the 1999 *Assessment*, we restructured the document and expanded the analysis so that it conforms with OMB's 1996 "Guidance for Conducting Economic Analysis of Federal Regulations Under Executive Order 12866."

Provide a more complete and rigorous benefits analysis that meets the requirements of Executive Order 12866.

In the 1999 *Assessment*, we used results from an extensive multi-pathway risk assessment to develop human health and ecological benefit estimates. Where economic methods exist for valuing these benefits, we estimate the monetary value of the benefits.

DETAILED RESPONSES TO COMMENTS

This section provides detailed responses to the public comments pertaining to the economics peer review panel report. We first identify the comment code, present the comment, then present our response.

COMMENT
PEER.010(231)
Economics Panel review of the Regulatory Impact Assessment document for HWC 1. Overall, GCI supports the comments provided by the Economics Peer Review Panel. There are additional points we choose to make at this time. 2. Section 4 1. 1. 1: Facility-specific Data and Other Key Inputs Used in the Economic Screens. USEPA alluded to the "1991 Biennial Report Survey" without providing a formal reference to the document(s), nor did the Agency explain why more recent data was not used. Surely there was more up to date data available, as the Economics Peer Review Panel asks, "Are there auxiliary data for later years that might be used to scale the 1991 data?"

RESPONSE

The most recent available data were used for both the 1995 RIA at Proposal and for the 1999 *Assessment* of the Final Rule. EPA's "Biennial Reporting System" (BRS) is a national system that collects data on the generation, management, and minimization of hazardous waste. BRS captures detailed data on the generation of hazardous waste from large quantity generators and data on wastes managed at treatment, storage, and disposal facilities. In the 1999 *Assessment,* we describe the BRS as follows:

> *[The BRS is] a national system that collects data on the generation and management of hazardous waste. The BRS captures data on two groups of RCRA-regulated hazardous waste handlers: non-household large Quantity Generators and Treatment, Storage, and Disposal facilities (TSDs). The facilities must submit a report every other year detailing the quantities and composition of the waste, along with the management method used for handling the waste. BRS data exist for odd-numbered years; 1995 is the latest year for which final BRS data are currently available.*

The 1995 RIA for the proposed rule used 1991 BRS data because more recent data were not available. As described above, for the Final *Assessment* of the Rule, we are using the most recent available BRS data from 1995.

COMMENT — continued —
PEER.010(231)
3. .Section 4.1.5: Break Even Quantity(BEQ) Analysis. In the first and second paragraphs of the Peer Review Panel comments, the word "access" is used where the logic of the associated sentences would indicate that the word should have been "excess." 4.Section 4.1.5: Fourth paragraph. The Panel states the following: "As we understand it, facilities maintain excess capacity to handle surges in demand." While this may be true for hazardous waste incinerators, it is patently false for hazardous waste burning cement kilns.

RESPONSE

We calculate excess capacity by subtracting the quantity of waste burned by the practical capacity of the combustion system. We estimate practical capacity (tons per year) by using the feed rates in EPA's OSW database (pounds per year) and summing 8,000 hours per year of operation. Based on these estimates, both commercial incinerators and cement kilns appear to have excess capacity, and could accept more hazardous waste to burn at their facility.

COMMENT — continued —
PEER.010(231)
5.Section 5.4. 1: Property Value Benefits. The Panel points out in the second paragraph of this section that there are no studies addressing property values of [around?] hazardous waste incinerators. The Panel goes on to state that, "The closest EPA could come was a study of a municipal waste incinerator. At this point one can reasonably question the usefulness of proceeding any further with the study." We also want to emphasize what the Panel states two paragraphs later, "As it turns out, the benefits transfer is based on a single study. Like the other nine studies, EPA provides neither a reference to the place of publication of the study, nor a critique of the study's quality. Both of these are essential to an assessment of the benefits transfer analysis. Lacking such information, the benefits transfer loses credibility." 6.Section 5.4. 1: Final paragraph. A statement is made here which does not logically follow the text/explanation leading up to that statement. The text leading up to the final sentence of this paragraph & section points out that "...the benefits transfer has confused the object of choice to such an extent as to make the exercise of dubious value." The Panel also points out that "EPA provides no support for the requirements that changes in concentrations must be recognized by the property owners...", etc. and that finally, "EPA realizes the seriousness of these deficiencies...", etc. however the final statement illogically concludes that "The Panel believes this is a conclusion with (emphasis added) foundation." Surely what is meant here is that the conclusion is without foundation. A conclusion without foundation is consistent with the related comments from reviewer R.J. Kopp in the final paragraph of his Section 5.4.1 comments where he refers to EPA's "very significant" comment/conclusion as "meaningless and unwarranted."

RESPONSE
Based on peer review, we did not include property value analysis in the Final *Assessment* due to the limitations of the benefits transfer approach and because property value benefits likely overlap with human health and ecological benefits (which we significantly improved upon).

COMMENT — continued —
PEER.010(231)
7.Chapter 3: Item 5 of the recommendations. The Panel points out that in the EPA estimates that up to 33% of the 1.8 million tons of the waste stream could be replaced by waste minimization methods, EPA has neglected to include operation and maintenance costs. And while EPA has recognized this, the Panel has concern that "O&M costs net of product recovery credits could be substantial. Accordingly, we recommend that unless EPA can provide evidence that net annual O&M costs are likely to be small, it should caveat the payback analysis in the strongest possible terms (i.e., state up-front that O&M costs could be substantial and that if such is the case, it is difficult to draw meaningful conclusions from the payback analysis." This is a pretty clear example of EPA drawing conclusions without sufficient information and this needs to be emphasized since they do it all too frequently.

RESPONSE
The payback analysis used in the 1995 RIA is used as a simplified approach for estimating possible waste quantities for which waste minimization and waste management alternatives are available and appear economic. We acknowledge that the omission of O&M costs and product recovery credits should be incorporated to accurately predict the availability of waste management alternatives that are financially feasible. Thus, for the 1999 *Assessment,* we conducted an expanded and significantly improved analysis of waste minimization alternatives. This analysis used a more detailed decision framework for evaluating waste minimization investment decisions that captures the full inventory of costs, savings, and revenues, including O&M and product recovery credits, as well as indirect, less tangible items typically omitted from waste minimization analysis such as liability and corporate image. The detailed analysis is presented in an Appendix to the 1999 *Assessment.*

COMMENT
PEER.011(237)
The first shortcoming of the peer review panel was that it was not asked to address regulatory flexibility analysis (differential impacts on smaller entities). Instead, it had been asked to pay particular attention to the following areas: (1) Marginal Cost Framework, (2) Break-even Analysis, (3) Imputation of Revenue Streams, (4) Price Pass Through Scenarios, (5) Waste Minimization Alternatives, (6) Profitability, and (7) Property Value Analysis. Thus, in spite of the fact that regulatory flexibility analysis is required under the Regulatory Flexibility Act and OMB guidance on regulatory impact analysis, the EPA failed to charge the panel in an appropriate manner. This report addresses some of the regulatory flexibility analysis questions. Not withstanding the shortcoming mentioned above, except for certain critical areas affecting the analysis, the Economics Panel did an outstanding job of commenting on the RIA. But, in general, it gave too much benefit of the doubt to

the EPA and its contractors, when such a benefit was not due at all. And, the Panel has made rather weak recommendations for improving the analysis.

RESPONSE
For the 1999 *Assessment* of the Final Rule, EPA conducted a complete assessment of the impacts of the Hazardous Waste Combustion Standards on small business combustion facilities, as well as secondary impacts on small business generators and fuel blenders associated with combustion price increases. EPA's small business analysis adheres to the requirements set forth in the recent March 1996 Small Business Regulatory Enforcement Fairness Act (SBREFA) which amended the Regulatory Flexibility Act (RFA) of 1980. Under these laws, EPA must analyze proposed regulations to determine if they will have a "significant economic impact on a substantial number" of small entities (i.e., businesses, tribes, non-profit organizations). If a regulation is found to impact a substantial number of small entities, further analysis must be performed to determine how significant the impact is, and to determine what can be done to lessen the impact. In our analysis (documented in Appendix G of its 1999 *Assessment)*, EPA determined that in general the HWC MACT Standards will not have significant impacts on a substantial number of small entities. In particular, the direct impacts on small business combustion facilities and the indirect impacts on small business generators are minor. Only the impacts on fuel blenders may be notable; however, the absolute number of these facilities affected is very small.

COMMENT
PEER.011a(237)
The Panel may have failed to examine the methodology because it did not have a qualified financial analyst on its team.

RESPONSE
EPA believes that members of the peer review panel possessed financial expertise to address issues of a financial nature.

COMMENT
PEER.033(238)
D. The review panel failed to note several other areas where the RIA falls short of meeting the OMB guidance. In addition to the deficiencies noted by the review panel, we believe the Agency has also failed to comply with several other aspects of the OMB guidance.

RESPONSE

In the 1999 *Assessment*, we restructured the document so that it conforms with OMB's 1996 "Guidance for Conducting Economic Analysis of Federal Regulations Under Executive Order 12866." The 1999 *Assessment* includes the following elements in the first chapter which addresses concerns of the review panel: the objectives of the Economic Assessment, the analytical requirements the document fulfills, the rationale for regulatory action, an examination of alternative regulatory options, the anticipated effect of the MACT standards, and our analytic approach and organization for the subsequent chapters.

COMMENT

PEER.018(238)

B. Lack of real benefits analysis. The panel reaches strong and appropriate conclusions about EPA's failure to conduct a real benefits analysis. The panel also clearly points out how EPA's failure in this area violates the requirements of the OMB guidance. The absence of any real benefits analysis, (and, hence, any evaluation that compares costs to benefits) is not surprising given the small real benefits likely to be achieved by this rule as confirmed by EPA's risk assessment panel.

RESPONSE

In the 1999 *Assessment*, we used results from an extensive multi-pathway risk assessment to develop human health and ecological benefit estimates. For the human health analysis, we estimated benefits from cancer and non-cancer risk reductions. We monetized cancer risk reduction estimates by applying the value of a statistical life (VSL) to the risk reduction expected to result from the MACT standards. We assigned monetary values to human health benefits associated with reductions in particulate matter and mercury using a direct-cost approach which focuses on the expenditures averted by decreasing the occurrence of an illness or other health effect We assigned monetary values associated with reduced blood lead levels by estimating the increase in expected earnings associated with higher cognitive abilities (i.e., IQ levels and increased attention spans).

We also included an ecological benefits analysis in the 1999 *Assessment*. In this analysis, we calculated land and water areas that may experience reductions in ecological risk criteria below levels of concern. Reductions of dioxin, mercury, and lead were found to provide some potential for improvement of ecosystems. In the *Assessment*, we did not assign monetary values to these potential ecological benefits because no methods are available for translating an exceedance in the ecological risk criteria with a concrete benefit measure, such as increased fish populations, for which a benefits transfer approach could assign monetary values.

COMMENT
PEER.019(238)

The panel correctly points out that EPA has incorrectly assessed the so-called "structural benefits" enjoyed by BIFs as providers of hazardous waste services and therefore has mistakenly overestimated the "cushion" cement kilns enjoy to absorb increases in compliance costs. In particular, the panel points out that cement kilns normally accept more "desirable" wastes (i.e., wastes with higher energy content and reduced amounts of certain contaminants). Because cement kilns must produce a product, their requirements for a fuel source necessarily differ from the materials accepted by incinerators. As a result, cement kilns accept lower priced wastes, while incinerators can take less desirable and higher priced wastes. Thus, the economic benefit per unit of waste accepted is almost always greater at incineration facilities.

RESPONSE

EPA recognizes that kilns tend to burn cleaner higher-Btu wastes that command lower prices, and thus cement kilns generate lower revenues per ton on average than do commercial incinerators. EPA's economic impact model assigns different prices to seven categories of waste: comparable fuels (those wastes that meet the comparable fuel specifications);[1] liquids with suspended solids (these liquids contain some suspended solids; hazardous waste in this category exhibit high heating value and low-contaminant levels); high-contaminant liquids; less contaminated sludges; more highly contaminated sludges; less contaminated solids; and more highly contaminated solids. Prices are lowest for the more "desirable" waste types that cement kilns primarily burn: low-contaminant liquids. Thus, revenues per ton for cement kilns tend to be much lower than for commercial incinerators. These revenue differences are fully captured in EPA's economic impact model.

In assessing the cost of hazardous waste burning, however, EPA continues to believe that there are structural benefits enjoyed by BIFs as providers of hazardous waste combustion services. Kilns are able to recover the energy content of the wastes in their production process, offsetting purchases of virgin fuels that would otherwise be necessary to achieve required heating temperatures for cement production. Even in the absence of energy recovery advantages, cement kilns still enjoy an advantage based on their ability to produce a saleable product. A commercial incinerator must purchase all of its capital equipment to combust hazardous wastes and control emissions from the process. In contrast, a cement kiln purchases capital equipment to manufacture cement, and this equipment can also destroy hazardous wastes. While there are some incremental capital purchases required for a kiln to burn hazardous wastes, these are small relative to the overall cost of an incineration unit.

[1] The comparable fuel exclusion is a conditional exclusion from RCRA for hazardous wastes that are similar in physical form and chemical makeup to fossil fuels. This exclusion is part of the "fast track" revised standards for hazardous waste combustion facilities.

COMMENT PEER.024(240)

I. GENERAL COMMENTS ON PEER REVIEW PANEL REPORTS

The conclusions drawn by the panel-that the RIA is significantly flawed, that the risks do not justify BTF, and that many of the proposal's required technologies have not been adequately demonstrated-all support the need for EPA to significantly rethink and revise its proposed rule and issue a reproposal prior to adopting final MACT standards. In our comments on the proposed rule, Safety-Kleen pointed out that the many technical and legal flaws in the proposal appear to be due in part to EPA's efforts to rush its rulemaking. The fact that EPA waited until after the proposal had been issued to obtain expert outside evaluation of key risk, economic, and technical questions, we believe, is further evidence of the Agency's rushed approach to issuing this rule. The questions considered by the peer review panel are too important to be considered after the proposal's comment period has already closed. EPA traditionally receives technical input (such as SAB review) prior to issuing a proposal, in an effort to issue as defensible of a proposal as possible. As we and others have pointed out, the Agency can meet its obligations under the settlement with the CASE petitioners in the Horsehead case, which is a major justification provided by EPA for its hurried proposal, without rushing the final promulgation of this poorly prepared rule. EPA could issue a decision not to regulate at this time to close out the court case and continue to work on this rule until it is technically and legally sound. If EPA is to adequately address the issues raised by the peer review panel, as well as those raised during the public comment period, a reproposal will certainly be necessary.

RESPONSE

EPA has carefully and thoroughly addressed comments pertaining to the peer review, as well as those raised during the public comment period. Over the past three years since Proposal, EPA published five notices of data availability (NODAs) as part of the rulemaking process. The May 2, 1997 NODA included a report on developing revised MACT standards based on a revised emissions database. In addition, EPA participated in numerous formal and informal meetings with stakeholders, representing an on-going dialogue on various aspects of the rulemaking.

COMMENT
PEER.025(240)

Lack of real benefits analysis The panel also reaches strong and appropriate conclusions about EPA's failure to conduct a real benefits analysis. The panel concludes that 'It is not possible to provide a more rigorous and complete peer review of the benefits analysis since the analysis simply was not reported.' (summary report, p. 6) The panel also clearly points out how EPA's failure in this area violates the requirements of the OMB guidance.

RESPONSE

In the 1999 *Assessment,* we used results from an extensive multi-pathway risk assessment to develop human health and ecological benefit estimates. For the human health analysis, we estimated benefits from cancer and non-cancer risk reductions. We monetized cancer risk reduction estimates by applying the value of a statistical life (VSL) to the risk reduction expected to result from the MACT standards. We assigned monetary values to human health benefits associated with reductions in particulate matter and mercury using a direct-cost approach which focuses on the expenditures averted by decreasing the occurrence of an illness or other health effect We assigned monetary values associated with reduced blood lead levels by estimating the increase in expected earnings associated with higher cognitive abilities (i.e., IQ levels and increased attention spans).

We also included an ecological benefits analysis in the 1999 *Assessment.* In this analysis, we calculated land and water areas that may experience reductions in ecological risk criteria below levels of concern. Reductions of dioxin, mercury, and lead were found to provide some potential for improvement of ecosystems. In the *Assessment,* we did not assign monetary values to these potential ecological benefits because no methods are available for translating an exceedance in the ecological risk criteria with a concrete benefit measure, such as increased fish populations, for which a benefits transfer approach could assign monetary values.

COMMENT

PEER.027(241)

Comments by the Cement Kiln Recycling Coalition (CKRC) Regarding ECONOMICS PEER REVIEW PANEL: COMMENTS ON THE REGULATORY IMPACT. ASSESSMENT (MA) FOR PROPOSED HAZARDOUS WASTE COMBUSTION MACT STANDARDS, JULY 9,1996 The following provides comment on the Economics Peer Review Panel's (Panel) conclusions as presented in their consensus review: Section 1: General Comments Section 2: Chapter by Chapter Comments Section 3: Recommendations We have presented our comments in the same order as the Panel's consensus review. In our comments on these sections of the Panel's consensus review, we also include comment on the contributions provided by the individual members of the Panel. For the most part, the Panel's consensus review is consistent with CKRC's August 19, 1996 submittal to EPA of comments on the proposed MACT rule. CKRC's comments anticipated many of the issues subsequently raised by the Panel. Our August 19, 1996 submission contains extensive data that corroborates and provide factual detail to amplify many of the comments that have been stated by the Panel in more general terms. Our ability to substantiate the Panel's comments rests importantly on the results from two surveys during 1996 of major segments of the hazardous waste combustion market. CKRC surveyed all 20 of the cement plants using H@F regarding 1995 hazardous waste operations, revenues and costs and about the makeup of the fuels themselves. Eighteen plants responded, representing over 880,000 short tons of H@F used in 1995. In addition, CKRC in conjunction with the National Association of Chemical Recyclers (NACR) surveyed NACR members on the quality and value of HWDF and of hazardous wastes shipped in 1995 from fuels blenders to cement plants and commercial incinerators, as well as questions regarding the overall hazardous waste industry from

generation to final disposal or use. Nine fuels blenders responded who shipped over 500,000 short tons of H@F to cement plants in 1995. To the extent feasible given confidentiality constraints associated with the results from these surveys, CKRC's August 19 comments to EPA provided plant-specific data in addition to overall industry-wide statistics that are pertinent to many of the issues raised by the Panel. For the most part, these CKRC comments on the Panel's review do not provide new data. In general we re-present information previously submitted to EPA, organized in a different manner so as to be most responsive to the issues raised by the Panel. However, we do provide some new statistics from CKRC's surveys to help address three of the Panel's issues (regarding fuels blending costs, HWDF shipment distances, and the rate of return required by the industry for new investments).

RESPONSE

EPA has thoroughly reviewed CKRC's data submissions and other comments as part of its rulemaking process. EPA used CKRC's data to assess the accuracy of its own data assumptions and estimated economic impacts. A report documenting this analysis can be found in the Docket (Document Number F-97-CSRA-FFFFF).

COMMENT

PEER.028(241)

SECTION 2 - CHAPTER BY CHAPTER COMMENTS Review of Executive Summary CKRC concurs with the Panel's conclusion that the RIA has not conformed to Executive Order 12866. CKRC also concurs with the Panel's recommendation that the Executive Summary clearly state how the RIA meets the requirements of the Executive Order. In doing so, EPA should not merely assert that costs and benefits were analyzed and weighed. EPA should provide a clear exhibit which itemizes the costs and benefits of the options EPA considered (including an estimate of the magnitudes of these costs and benefits and an indication of the reliability of the estimates). The benefits assessment should include an estimate of the population risk reductions to be achieved by the rule, as well as monetization to the extent possible. Indirect as well as direct benefits and disbenefits should be considered (for example, when the rule induces cement kilns to use coal instead of HWF, net health risks will increase). A separate presentation should be provided for the MACT Floor requirements, and an incremental presentation should be provided for the BTF requirements. It is especially important for EPA to carefully evaluate the incremental costs and benefits of the BTF requirements, because CKRC has shown that the additional social costs of the proposed BTF requirements are relatively high and reliable in comparison to the additional social benefits which are relatively small and questionable. The Executive Summary should include a clear explanation for EPA's choice, so that it is apparent how EPA arrived at its decision.

RESPONSE

The 1999 *Assessment* of the final Standards is significantly improved and conforms to Executive Order 12866. In particular, we clearly stated how the analysis meets the requirements of the Executive Order and we provided clear exhibits which itemize the costs and benefits of the options EPA considered. The benefits assessment is based on an extensive multi-pathway risk assessment to develop human health and ecological benefit estimates. Where economic valuation methods exist, we assigned dollar values to these benefits. To assess the incremental benefits of going beyond-the-floor (BTF), we developed cost-effectiveness measures which provide estimates of expenditures per unit reduction of emissions for each air pollutant and estimates of the cost per unit of benefit achieved by the rule.