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GUIDANCE ON USING ALTERNATIVE RISK ASSESSMENT APPROACHES  
IN DETERMINING INCINERATOR METALS EMISSION

United States Environmental Protection Agency  
Washington, D.C. 20460  
Office of Solid Waste and Emergency Response

November 17, 1992

MEMORANDUM

SUBJECT: Guidance on Using Alternative Risk Assessment  
Approaches in Determining Incinerator Metals  
Emission Limits

FROM: Sylvia K. Lowrance  
Office of Solid Waste

TO: William E. Muno, Action Director  
Waste Management Division; Region V

This memorandum is in response to your request for guidance on the issue of a flexibility in allowing hazardous waste incineration and BIF facilities to apply alternate risk assessment approaches to those provided in the standard "Tier III" metals/HCl approach in the incineration guidance and BIF rule.

In your September 14, 1992 memorandum, you commented that the February 21, 1991 BIF rule preamble at 56 FR 7171 states that the option of site-specific assessment, using more realistic and less conservative assumptions is available. We would like to clarify that the discussion was referring to use of screening dispersion models versus site-specific dispersion models. That discussion does not mention, and we did not contemplate, relaxing the reference air concentration (RAC) or risk-specific dose (RSD) values when a site-specific risk assessment is conducted for a BIF. Nonetheless, since metals standards for incinerators are being applied under authority of the "omnibus" provision of HSWA rather than under specific regulations, there is room for flexibility with respect to the risk assessment methodology. We want to be sure, however, that the metals controls are implemented on a consistent basis across the nation to the greatest extent possible. In addition, because

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many issues and comments were considered in developing the metals controls for incinerators and because the BIF rule requires the use of those controls, we believe that there should be a supportable reason for any deviations from the national approach.

Regarding your proposal to conduct indirect exposure assessment, we believe that such an assessment would be appropriate and desirable. However, we believe it would not be appropriate to "back off" on the RACs and RSDs (i.e., to allow higher ambient concentrations) solely because an indirect exposure assessment is added. As you are aware, we established the RACs for noncarcinogenic metals (other than lead) at 25% of the reference dose for these metals. For lead, we adjusted the National Ambient Air Quality Standard by a factor of one-tenth. We applied these apportionment factors to account for background levels of these pollutants from other sources, as well as for indirect exposure pathways from the incinerator (or BIF) in question.

Thus, a multi-exposure pathway risk assessment would still need to account for the ambient levels of these pollutants resulting from other sources. Although emissions from multiple on-site hazardous waste combustion sources can readily be taken into account, accounting for background levels contributed by non-RCRA and off-site sources is more complex because of the number of pollution sources involved, because emissions levels are unknown, and because of the possibility of new sources being constructed over time. Any risk assessment which does not use the generic apportionment factors built into the RACs would need to take into account present and future background levels contributed by non-RCRA and off-site sources, in addition to indirect exposure.

Further, it is important to note that the RSDs for carcinogens do not incorporate apportionment factors to account for background or for indirect exposure. Therefore, it would not be appropriate to raise the RSD even if an indirect exposure assessment and assessment of background levels from other sources were added. An apportionment factor is not used for carcinogenic compounds because the Agency assumes that there is a health risk at any dose -- there is no dose below which there would be a zero risk of cancer. Thus, our risk assessment methodology for carcinogens estimates the increased cancer risks from exposure to metals emissions from the source in question via direct inhalation. Consideration of indirect exposure as well simply provides a more accurate picture of the risk posed by the source.

Regarding your question about application of the CERCLA Risk Assessment Guidelines, we are in the process of reviewing these guidelines and will get back to you shortly with our evaluation. In the meantime I hope that these comments will be of assistance in determining the appropriateness of other risk assessment approaches.

If your staff have any questions or comments they may call Sonya Sasseville at (703) 308-8648.

cc: Dev Barnes; Matt Straus; Jim Michael; Waste Combustion Permit Writers' Workgroup