

Comments from Joe Miller on the Workshop Notes from the 2nd Health Impact Assessment Workshop on Metro's WTE Incineration Proposal 6/13/17

From: Joseph Miller <jmiller@saintmarys.edu>

Date: Tue, Jun 13, 2017 at 2:19 PM

Subject: Re: notes from recent workshop

To: Rob Smoot

Cc: All participants in the 2nd Health Impact Assessment Workshop on June 5

Dear Rob and All,

Thanks for the opportunity to review and comment upon the workshop notes from the 2nd Health Assessment Impact Workshop held on June 5th.

Below find my comments:

1. My first comment is that I very much endorse the comments made by all other participants on the [omitted so as to not disclose the comments of others] of the draft HIA.

2. Below find a concise summary of the points I made during the first section of participant's responses to supplement the workshop notes:

** Both models used to assess greenhouse gas (GHG) outputs concluded that "landfilling has lower GHG emissions than WTE."

** For every 4 tons of waste incinerated, approximately one ton of incinerator ash is created and must be landfilled. Thus, the comparison really isn't WTE vs. landfilling, but actually WTE + landfilling vs. landfilling by itself.

** The WTE + landfilling option has to be associated with much greater threats than the generic landfill option, since accidents, malfunctions, fires, and seismic events can potentially occur at two facilities (Covanta Marion and Coffin Butte Landfill) in the first option. Seismic threats are also greater in the WTE + landfilling option, because both are much closer to the subduction Juan de Fuca Plate, and to the off-shore Cascadian Subduction Zone.

** The only health determinants judged to have a major positive effect for the WTE option were Employment and Working Conditions. Information on and specific data requests about these same two determinants should have been collected and requested from the three landfills on which the generic landfill was based, so that these same dimensions could have been scored for the generic landfill option.

** Much more information is needed to evaluate the assertion that Dr. Jose Domingo "has consistently reported that levels of PCDD/Fs, PCB, and metals do not significantly accumulate in soil samples surrounding modern WTE facilities."

** Using just dioxins as an example, the following findings suggest that levels of soil contamination surrounding modern WTE facilities are likely to be significantly higher than suggested by Domingo:

-- Dr. Jorge Emmanuel testified that Dioxins are "highly persistent in the environment, so any dioxins produced today will remain for up to 150 years if on top of the soil, more than 500 years if in bodies of water, and up to 1000 years if the dioxins are covered by a few centimeters of soil surface."

-- Research from the UK found that AMESA [long-term] continuous sampling shows higher dioxin emissions than typical stack tests, and research from Belgium shows that the difference can be 30-50 times higher. This is largely because annual stack tests are not done when dioxin emissions are known to be the highest, during start-up, shut-down, and malfunction times, when air emissions permit limits do not even apply and no monitoring is usually done." There is no reason to believe the situation would be any different at Covanta Marion.

-- The inadequate sampling provided by annual stack testing for dioxins and other pollutants is further revealed by the fact that one of the two boilers at the DYEC emitted dioxins and furans at more than 12 times its permit limits for an unknown period of time during its first five months of operation.

** Toxic fly ash is dealt with very differently and much more cautiously at DYEC than Covanta Marion. At Covanta Marion bottom ash and fly ash are collected and combined on the same conveyor system, and the combined ash is then landfilled as alternate daily cover. AT DYEC toxic fly ash from boiler processes and air pollution control devices is kept separate and stabilized in cement during an up to 21 day process before being landfilled.

** As levels of food waste in MSW are decreased, the overall percentage of plastics and other non-food waste in the MSW stream will increase. Incinerating MSW containing greater proportional percentages of plastics and other non-food waste will increase air emissions of pollutants, and increase levels of pollutants in fly and bottom ash. Landfilling MSW comprised of reduced food waste and increased plastics and other wastes, however, will reduce methane generation, and result in greater storage of the carbon sequestered within plastics and other wastes.

3. Below find concise restatements of some of the points I made during later sections of participant's responses to supplement the workshop notes:

** Since the HIA addressed only issues for which there is regulation, I omitted any discussion in my written comments of the most health impairing and deadly forms of particulate air pollution -- ultrafines. Ultrafines are neither regulated nor measured under current regulations, but yet are emitted in vast quantities by incinerators. In my oral comments, I suggested that ultrafines should be included within Metro's deliberations based upon the precautionary principle.

Ultrafine particles are incredibly small (approximately 1/1000th the width of a human

hair or less), and have a very large surface area relative to their volume. Airborn toxins attach to this surface. Such toxic laden ultrafines then get lodged in our lungs, enter our blood stream and organs producing inflammation and oxidative stress, cross both the blood-brain barrier and the placental barrier, and create serious respiratory and circulatory problems, and even death.

** Since the HIA addressed only issues for which there is regulation, I also omitted any discussion of the acknowledged unresolved concerns created by the incineration of the engineered nanomaterials that are increasingly widespread in virtually all areas of consumer products. [Below find a literature review by The Royal Society for Chemistry that addresses the fact that "manufactured nanomaterials are entering the waste stream, and some of these will be subject to incineration as part of their end-of-life treatment. The behavior and fate of nanomaterials during the incineration process and the environmental impacts of this disposal option are largely unknown."]
<http://pubs.rsc.org/en/content/articlehtml/2013/em/c3em00224a>

In my oral comments, I suggested that Metro should include engineered nanomaterials within their deliberations based upon the precautionary principle.

4. As recorded in the workshop notes, I also asserted that:

** [I] would like the report to add a section that addresses what regulations do and do not achieve and identify what precautionary concerns are not addressed by regulations.

** Joe stated the report presents too much conflicting information. Joe thinks we need to move from high carbon to low carbon future; Ptld and Mult.Co. have ruled out WTE as part of that future. Also, why build new capacity [thus perpetuating a dirty and outmoded technology dependent upon the burning of high carbon fuels] when there is more than adequate landfill capacity.

Thanks for the opportunity to respond and review the overall notes.

Joe