

CONTINUED RELIANCE ON INCINERATION IS AN ECONOMIC THREAT

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[The following comments were submitted as testimony by Dr. Miller for a 1/20/10 public hearing held by the Marion County Board of Commissioners to consider adoption of the 2009 Marion County Solid Waste Management Plan which included continued reliance upon the Marion County Covanta WTEF incinerator in Brooks for decades beyond the expiration of its current contract in 2014.]

Incinerators pose major economic threats to communities. Early this month the Mayor of Harrisburg, Pennsylvania indicated that the city could run out of money in three months, largely because of payments that are due on \$288 million in debt the city has racked up across time on its WTEF incinerator and various retrofitters and incinerator retrofits [5]. While trade industry proponents assert that the current Harrisburg incinerator -- retrofitted and operated by Covanta -- is "among the world's most innovative" and "state of the art," one proponent notes that "bottom line [the incinerator] is not making enough revenue to cover operations and debt." [6]

Harrisburg's financial status and the financial status of any other city or county that owns a WTEF incinerator will take additional hits in coming years as federal and state regulators tighten regulations on large industrial combustion facilities to reduce emissions that contribute to global warming, smog, and health impairment. Peter Montague made exactly this point in 2006 in his chronology of the Harrisburg incinerator when he noted that "if regulations on ultrafine particles, or mercury, or other emissions from the incinerator are tightened at any time during the next 30 years -- as seems inevitable -- additional retrofits and additional debt will become necessary" [7].

Stricter federal regulations are exactly what is playing out as the EPA announced in September, 2009 proposals to reduce greenhouse gas emissions from large, stationary industrial facilities [8,9]; proposals in January, 2010 to strengthen emission standards for pollutants that contribute to smog [10,11]; and preliminary remediation goals for dioxin in soil in January, 2010 [12,13]. The EPA also announced earlier this month that it is "working to complete a dioxin risk assessment that has been under review for years. The goal is to have the assessment finished by the end of 2010. When it's finished, the EPA will use it as its scientific foundation for future decision-making about dioxins in the environment" [12].

The EPA dioxin risk assessment currently in progress is partially due to a call by more than 100 organizations to President Obama in January of 2009 to mandate the EPA to evaluate previously blocked federal regulations for dioxins [14]. Such regulations can be expected to further increase the pollution control and operational costs of, and cost projections for, incinerators and ash monofills, and impact the feasibility and cost projections for proposals for the "beneficial use" of incinerator ash. If Continuous Emissions Monitors (CEMs) for dioxins [15] were mandated in the United States as they are in some parts of Europe, WTEF incinerators would be even more costly to operate, but they would also emit fewer

dioxins.

Contracts and the need to pay operational expenses and retire debt require that incinerators receive at least a stable and minimum amount of waste. Changes in our economy and society, however, increasingly threaten the ability of communities to meet their contractual obligations to supply a minimum amount of waste to feed incinerators. Under such conditions, communities have to either pay higher tipping fees, import waste from greater distances, and/or pay financial penalties. Interrelated factors that jeopardize the ability of communities to meet their contractual obligations to feed incinerators include:

- decreases in the magnitude of the waste stream due to changes in the economy, employment and consumption
- decreases in population resettlement due to the economy
- increased commitments to conserving resources, energy, and water by residents, businesses and consumers
- increased concerns about the health and environmental effects of pollutants and global warming gases
- decreases in the production of goods and the size and weight of packaging
- increases in extended producer responsibility for packaging

Re the above, The Washington Post reported last April that in a number of communities across the nation, disposal is down and reuse and repair are up [16]. To cite just two additional examples, San Bernardino County, CA reported a 19 percent decline in the total waste tonnage between 2005 and 2008 [17], and "towns served by the Connecticut Resources Recovery Authority's Mid-Connecticut trash-to-energy facility in Hartford will see their tipping fees ... increase to \$69 per ton starting July 1 because the volume of garbage the plant takes in is down [by 8%] compared to last year" [18].

Also re the above, OPB recently reported that because of the recession, diminished work opportunities, and other factors fewer people moved into Oregon in 2009 than in recent years [19].

It should be noted that the recommendations in Chapter 6 of the Solid Waste Management Plan are predicated upon more and more people moving into Marion County, and projected yearly increases in the amount of waste each person discards. Both assumptions look increasingly questionable.

THE HEALTH IMPAIRING EFFECTS OF INCINERATORS AND INCINERATOR ASH

Both the national and Oregon Physicians for Social Responsibility (PSR) are signatories along with hundreds of national, state/regional, and local organizations to the "No Incentives for Incinerators Sign-on Statement" [20]. The statement asserts, in part, that: "Incinerators are a toxic technology. Even the most technologically advanced incinerators release hundreds of distinct hazardous byproducts including dioxins, heavy metals, and halogenated organic compounds in the form of toxic air emissions, particulates and ash."

An extensive and growing literature exists on the health impairing effects of the pollutants emitted from municipal waste incinerator stacks and present in incinerator ash. Contributing to this literature have been organizations such as the British Society for Ecological Medicine [21]; Prevent Cancer Now [22,23]; the Global Alliance for Incinerator Alternatives [24]; the Irish Doctors Environmental Association [25]; and a coalition comprised of the Pembina Institute in

collaboration with the David Suzuki Foundation, Sierra Legal, Toronto Environmental Alliance, Canadian Environmental Law Association and Great Lakes United [26].

WAYS IN WHICH REGULATIONS (AND CLAIMS) CAN BE INADEQUATE, INCOMPLETE, MISLEADING

Representatives of incinerator corporations assert that the emissions from their facilities meet federal and state regulations, and thus imply that the emissions are safe, and do not impair health or the environment. What they do not say is that there are all sorts of ways in which these regulations are known to be inadequate, incomplete and misleading. For example [27-29]:

- while some pollutants are monitored, other pollutants are completely unmonitored
- monitoring may be continuous, but it may also be only on a six-hour basis once every year. Extrapolations made from such infrequent samples can dramatically underestimate day-to-day emissions.
- interactions and synergistic effects among chemicals are unexplored, even though research indicates such effects can be major
- timing of exposure is sometimes very important, and chemicals may have different effects at different points in development
- dosage effects may not be linear, and low doses can sometimes have greater effects than high doses

Re pollutants that are unmeasured, one of the most health impairing and deadly forms of particulate air pollution -- ultrafines -- are neither regulated nor measured under current regulations, and are released in vast quantities by incinerators. Such particles are incredibly small (between 1 nanometer or billionth of a meter and 100 nanometers, i.e., 1/100,000th to 1/1000th the width of a human hair) and have a very large surface area relative to their volume. Airborne toxins attach to this surface. Such ultrafines then get lodged in our lungs, or enter our blood stream creating various types of respiratory, circulatory and other health problems. [30]

More and more such ultrafine particles are being emitted from incinerators, because more and more products containing nanotechnologically engineered ultrafine sized materials are entering the waste stream. There are currently more than 800 such products [31]. As these products are discarded and incinerated, there is every reason to believe that the increased levels of ultrafine particulates that are emitted, and the properties of these ultrafines, will create increased levels of health impairment.

Engineered nanomaterials have unique properties. The organization Food & Water Watch, for instance, notes in "Sweating the Small Stuff" that "nanoscale materials are very different than their larger counterparts, with distinct electronic, magnetic, chemical and mechanical properties," and that "nanoparticles have the potential to bypass the blood-brain barrier" ... "the potential to pass the placental barrier" [and that] "once in the bloodstream, nanomaterials can circulate throughout the body and be taken up by organs and tissues." [32]

"Sweating.... " also notes that "the European Commission Scientific Committee on Emerging and Newly Identified Health Risks reported [3/10/06] that 'experts are of the unanimous opinion that the adverse effects of nanoparticles cannot be predicted (or derived) from the known toxicity of material of macroscopic

size, which obeys the laws of classical physics.' " [32]

Because of their nano size and unique properties, and because they are unregulated, many groups have called for urgent precautionary research, regulation and oversight of engineered nanomaterials throughout their cycle of production, use, and disposal. These groups include the Environmental Working Group, the Royal Commission on Environmental Pollution (UK), the Silicon Valley Toxics Coalition, the Project on Emerging Nanotechnologies, the ETC Group, Friends of the Earth Europe, Food & Water Watch, the Soil Association (UK), the Science & Environmental Health Network, and many others [33], as well as former EPA official J. Clarence Davies [34], and insurance companies [35,36].

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