

Testimony of Peter A. Valberg, Ph.D.

Principal / Gradient Environmental and Risk Science

Joint Meeting of the Chicago City Council Committee on Health and the Committee on Energy, Environmental Protection and Public Utilities

Chairman Rugai, Chairman Balcer, members of the Committees on Environment and Health, members of the City Council: Good morning and thank you for the opportunity to appear before you today.

My name is Dr. Peter Valberg, and I'm a principal at Gradient, an environmental and risk science consulting firm based in Cambridge, Massachusetts. We specialize, among other things, in toxicology, risk assessment and environmental chemistry.

My personal specialty is human health risk assessment, inhalation toxicology and modeling of human exposure to environmental chemicals. I have 30 years of experience on the faculty of the Harvard School of Public Health and at Gradient. My educational background includes a doctorate in Physics from Harvard University and a master's degree from the Harvard School of Public Health.

My clients include the U.S. Environmental Protection Agency, the National Academy of Sciences, the World Health Organization and the U.S. Department of Justice. I am often asked by both federal and state government agencies, and by private sector clients, to apply research results to the regulatory and public policy arenas.

Gradient's partner in this analysis of the environmental and health impacts of Crawford and Fisk is one of the nation's leading air pollution and meteorological consulting firms – Enviroplan of Wayne, New Jersey. Enviroplan's work was led by Dr. Howard Ellis, a nationally recognized expert with nearly 40 years of experience in air quality monitoring, modeling and permitting. His clients have included government and private sector clients.

Enviroplan's job was to assess the impact of emissions from Fisk and Crawford on fine particulates – also called airborne dust – in the air breathed by residents of Chicago and Cook County, including people living close to the plants.

The air modeling analysis does not rely on opinions. It is based solely on the same models and data that Illinois EPA is using to determine what emission limits are required for sources to attain national air quality standards. The Illinois EPA or anyone else can totally replicate this work and come up with the same results.

The air modeling also included the impact of sulfur dioxide and nitrogen oxides emissions from the plants that contribute to fine particulate matter.

Our task at Gradient was to take this air quality impact data and put it in a scientific context relative to other sources of air pollution.

We also were asked by Midwest Generation to review a report issued last fall by the Environmental Law and Policy Center, which alleged certain hypothetical public health costs resulting from the operation of these two plants.

There are two major findings from our analysis that I would like to share with you today:

FIRST, the Chicago-area public health impacts and associated costs alleged for the Fisk and Crawford power plants by the Environmental Law and Policy Center report are wrong. The ELPC report uses data and methods that are not appropriate for measuring local, Chicago-area air quality impacts. It draws misleading and unreliable conclusions about the local impact of these plants.

Those conclusions should not form the basis for the development of thoughtful, science-based public policy nor, specifically, action on the ordinance presented to you today.

THE SECOND major finding is this: The impact of Crawford and Fisk on local air quality is a tiny fraction of what has seemingly been claimed by the proponents of this ordinance. The impact is so minimal, in fact, that even **closing** these two plants would not improve air quality in Chicago.

* * * * *

The Environmental Law and Policy Center study alleged that pollution from Crawford and Fisk has imposed high public costs on the local population from health and related damages.

Our analysis concluded, however, that these alleged damages were based on assumptions, associations, and interpretations. They were **not** based on actual air quality data, toxicology, or diagnostic medicine.

The findings **are incorrect** given what we now know about the small impact of these power plants on fine particulate matter in Chicago's air.

Another significant flaw in the ELPC's "total damages" figure is that it factored in hypothetical effects on a large population, including everyone from zero up to 200 miles away. It cannot and should not be interpreted as calculating "damages" in the Chicago area or in the local vicinity of the plants.

If we were advising the City of Chicago, the Illinois EPA, the USEPA or any other governmental agency, we would raise a red flag about basing a major policy change such as this proposed ordinance on either the ELPC study or the one issued nearly a decade ago by two researchers at the Harvard School of Public Health.

As one who has advised government entities in Washington and across the nation, I would especially urge caution when the policy change you are considering would override years of federal and state environmental regulations. These are regulations from both Democratic and Republican administrations that have undergone far more years of scrutiny and research than the ordinance you are considering today.

To use a very unscientific term, the ordinance before you is **a big deal**. It deserves far more rigorous study before the nation's third-largest city undertakes such a major policy change.

* * * * *

Turning now to what we believe is a more accurate, science-based and relevant assessment:

The analysis conducted by Dr. Ellis found that emissions from Crawford and Fisk account for **less than one-half of 1 percent** of the fine particulate matter pollution, or airborne dust, in Cook County's air.

That means **more than 99 percent** of fine particulate matter air pollution in Chicago and Cook County is produced by sources **other** than these two plants – such as cars, trucks and buses, Metra and freight train diesel locomotives, and dust from construction sites. These are sources both within the Chicago area and from outside the metro region.

Let me put this yet another way: Even if the plants did not exist, **more than 99 percent** of the fine particles in Chicago's air would still be present.

This kind of air pollution, which air quality scientists call "PM 2.5," is the substance most frequently cited in debates about local air quality.

So, you simply cannot make a science-based case that people who live near Crawford and Fisk, or who live elsewhere in Cook County, are adversely affected by Crawford and Fisk emissions. These plants have a miniscule impact on fine particulates for **anybody** in the area, **wherever** they live.

I want to underscore that our analysis relied on **actual air measurements** from 12 government-operated air quality monitors in Cook County.

Moreover, this EPA-approved model was applied to emissions of all pollutants that contribute to fine particle formation from all sources in the greater surrounding region, including specifically Crawford and Fisk. It accurately predicted the percentage of fine particulate matter concentrations due to the two plants at each of the monitor locations.

This is a level of analysis missing from either the Harvard or ELPC studies.

Again, this analysis used a well-established US Environmental Protection Agency model that is being used now by the Illinois EPA to assure attainment of national air quality standards for this fine particulate matter we are talking about today.

* * * * *

One other quick point I'd like to make in assessing the impact of Crawford and Fisk:

Indoor air, which is what we all breathe most of the time, contains many additional sources of fine particulate matter -- often at concentrations far greater than those found outdoors.

The combination of indoor air sources and our individual daily activities -- things like cooking, cleaning, smoking, driving on an expressway, standing on a train platform in Union Station or using a wood-burning stove -- far outweighs the contributions of Crawford and Fisk to total personal fine particulate matter exposures.

* * * * *

I want to be very clear that I am in no way minimizing the seriousness of air pollution or the need for regulations to prevent or reduce it. Evaluating improvements in air quality is what I do for a living.

I am only suggesting that regulations should be based on science and targeted at the right problem. That's not the case with the ordinance you are considering.

I know from experience that the best way to protect public health and improve air quality is to regulate air pollution at the federal and state levels. Air pollution derives from many individual sources, and some emissions disperse more widely into the atmosphere and have less impact locally.

* * * * *

Before concluding, I would like to make a final observation about the link ... or lack of it ... between asthma and power plant emissions.

Regarding asthma, we're seeing the same time trend around the world: Asthma rates continue to rise in cities, both here in the US and in other developed countries. But this is happening at the same time that air pollution levels have steadily declined.

Asthma has gone up, outdoor air pollution has gone down. That ought to tell you something right there.

Leading asthma experts are concluding that indoor air, mildew, allergens, dust mites, pet dander and other factors such as stress are a greater influence on asthma rates than pollutants in outdoor air.

So we do a disservice to those who suffer from asthma to divert attention, research, and resources away from the critical investigation into its most likely causes and triggers.

* * * * *

That concludes my testimony. I would be happy to answer any questions from committee members. I also have a few copies of our studies should the committees wish to review them in greater detail as they continue to study this issue.

Thank you.