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Gordon Beals

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# Scientific Research for Ozone and Fine Particulate Standards: The Industry Perspective

DR. GORDON BEALS\*

Until now, Consolidated Edison (Con Ed) has been the primary provider of electricity in these parts, but rapid changes are coming. I thought I would take a couple of seconds to talk a little about Con Ed and its position in regard to the new ambient air quality standards.<sup>1</sup> In fact, Con Ed supports them. I did not think that this colloquium would be complete without somebody informing you as to what the opponents of the standards have been saying. I thought I would give you my idea concerning these arguments and what they may lead to, regarding possible changes in the way we protect ourselves from the effects of air pollution.

First, I want to explain what I think the functions of the electric utilities are in our society. People have to burn fuel to provide various forms of energy for certain activities. The function of the utility is to burn people's fuel for them and deliver them the energy over wire or other means. The alter-

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\* Dr. Beals is a senior scientist at Consolidated Edison Company of New York (Con Ed) where he specializes in air pollution and chemical accident safety. Dr. Beals is involved in estimating air pollution emissions from power plant stacks and predicting the pathways of stack emissions. He is a former Research Project Manager in Atmospheric Studies Program of the Electric Power Research Institute.

Dr. Beals received his B.S. and M.S. degrees in meteorology from MIT. He received his Ph.D. in Atmospheric Sciences from the University of Washington. While on assignment for the United States Air Force, Dr. Beals was accredited as an observer to the N.A.S. Committee on Toxicology.

1. For more information concerning Con Ed's position in regard to the new ambient air quality standards, see Consol. Edison Co., New York, *Management Discussion and Analysis of Financial Conditions and Results of Operations; Air Quality* (last modified Mar. 16, 1998) <[http://www.coned.com/coned.com/coned\\_search/search\\_frameset.html](http://www.coned.com/coned.com/coned_search/search_frameset.html)>.

native is for everyone to have their own fuel burners in their backyard. If the utility industry cannot provide the energy and cannot do that more efficiently, more cheaply, and essentially just as cleanly as you would do it yourselves, we deserve to go out of business.

Now, with that in mind, I want to say that Con Ed has never been a particularly high emitter of air pollution, as electric utilities go, and right now we are one of the lowest.<sup>2</sup> In terms of nitrogen oxides per unit of electrical energy produced, per kilowatt-hour, per megawatt-hour, we are the best or next to the best. We take pride in that.

In addition, we take pride in the fact that Con Ed is a leader in reducing smoke opacity (the darkness of smoke that comes out of the boiler smoke stacks). The problem with opacity plagues all large fuel combusters at one time or another. Con Ed has signed an agreement with the New York Department of Environmental Conservation (DEC),<sup>3</sup> which will set a favorable precedent for all the other fuel burners in the state. I think that impressed the DEC. We consider ourselves to be one of the leaders in the industry.

Finally, as I mentioned, in regard to the subject of today's colloquium, Con Ed does, in fact, favor the new ozone and particulate standards. In particular, we find ourselves in agreement with the facts that Dr. Thurston just gave you concerning the health effects of ozone and fine particles. We accept the levels of the standard which the EPA Administrator has promulgated.<sup>4</sup> We do not jump up and down, and say, "Yes, those are the right levels." I think, at this point, there has to be a line drawn somewhere and it has been in the Criteria Document<sup>5</sup> that was prepared for the Administrator.

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2. See Benchmarking Air Emissions of Electric Utility Generators in the Eastern United States. Pace Energy Project (April 1991).

3. See Consol. Edison Co. of New York, *Partnerships with the government* (visited Nov. 11, 1998) <<http://www.coned.com/about/envannual/govrn.htm>>.

4. National One-hour Primary and Secondary Ambient Air Quality Standards for Ozone, 40 C.F.R. § 50.9 (1997); National Eight-hour Primary and Secondary Ambient Air Quality Standards for Ozone, 40 C.F.R. § 50.10 (1997).

5. See U.S. Env'tl. Protection Agency, Rep. Nos. EPA/600/AP/93/004 a-c, AIR QUALITY CRITERIA DOCUMENT FOR OZONE AND RELATED PHOTOCHEMICAL OXIDANTS (1993).

The Administrator has, in fact, drawn a line someplace within the range that was presented to her in the Criteria Document.<sup>6</sup> We accepted her decision as reasonable.

However, I disagree with Dr. Thurston's statement that the fine particles are roughly half of the ten micron particles. I think that the fine particles in this part of the country are more than fifty percent. Therefore, the standards, as promulgated may be more stringent than anticipated.<sup>7</sup>

I now turn to the issues that have been raised, and I will summarize the controversy in regard to ozone standards. Some people have pointed out that the cost to the utilities industry is rather high, in terms relative to the monetary benefits. Strictly speaking, from an economics point of view, it is often cheaper to treat the illness than to prevent it. This has been the prevailing school of thought among, and frequently originates with, doctors. I think that it probably would be cheaper to assist the people who are affected by ozone rather than go to the expense of decreasing ozone concentrations. However, that is not the right thing to do. We do not make decisions on the basis of economics alone. We make decisions on the basis of human emotions, among other things, and I believe that it is not the right thing to do.

I think that people are saying that we are now acquainted with ozone so that we are able to detect health effects in a relatively small fraction of the population. We are probably all familiar with the usual bell-shaped curve in statistics and so on. We are pretty far out on the tail of the curve at this point. Health effects are still discovered, but it is getting to the point where they are increasingly costly to find. Those who raised objections to the standard have pointed out that the case that was given to the Administrator in order to set the ozone standard does not have a clear demarcation for a safe level of ozone. How much is too much? How much is too little? In fact, the Administrator chose something within

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6. *See id.*

7. *See* National Ambient Air Quality Standards for Particulate Matter, 62 Fed. Reg. 38,652 (1997) (to be codified at 40 C.F.R. pt. 50).

that range, but people have been complaining about the fact that it is not a clear-cut case.

With regard to the new fine particle standards, one of the arguments people are raising is that it is not really clear how particles make people sick.<sup>8</sup> People can accept the idea that there is a cardiopulmonary overload associated with pollution and particulate pollution because they cause lung irritation, mucus and other adverse effects in the lungs. It becomes more and more difficult to breathe, and at some point, it becomes too much for someone to tolerate. Apart from that effect, there are still many questions as to the other factors of the particles that cause the illness. Is it sulfates? Is it acid particles? Is it the trace metals in the particles? Is it particles of a certain size? Research has been unable to provide answers to these questions.

Another issue that has not been adequately answered by the studies is whether the contemporaneous variation of carbon monoxide is adequately accounted for. Carbon monoxide causes breathing problems and difficulty in obtaining enough oxygen.<sup>9</sup> This could cause pulmonary overload. There are some statistics that raise arguments regarding this inconsistency.

The EPA has acknowledged that there is an overlap. In examining the confidence intervals of some studies, the margin for error includes no effect. In the middle range, the best guess is that there is always an effect. However, as I just noted, the margin of error sometimes, in some of the studies, suggests that there is no effect.

As I mentioned before, there are people, other than myself, who are concerned with whether we have the right ratio between fine particles and the ten micron particles, which is where most of the data occurs.<sup>10</sup> There are people who have

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8. See generally, Salvinder Juss, *Global Environmental Change: Health and the Challenge for Human Rights*, 5 *IND. J. GLOBAL LEGAL STUDIES* 121, 138 n.5 (1997).

9. See *id.* at 137 n.72.

10. See generally, Walter G. Wright, Jr. & Mary Ellen Henry, *The Arkansas Air Pollution Control Program; Past, Present and Future*, 51 *ARK. L. REV.* 227, 251 n.132 (1998).

said that the monetary value EPA has cited in establishing its standard was overwhelmingly dominated by the monetary value that it assigned as the cost of a death.<sup>11</sup> If you eliminated these or if you reduced the amount of the number that you assign to someone dying prematurely, the societal benefit of achieving these standards in economics may not be as high as the EPA has asserted.

So, with those things in mind, what do I believe now? Well, as I mentioned, it appears that as of next year we will be able to detect some effect of air pollution on health, down to almost pristine levels. If that is the case, then it becomes a question of ethics, that is, the extent to which we protect people from these effects. It would then be necessary to look toward the political process to decide at which level to protect people, as opposed to the current method of having an EPA Administrator choose the level. As Mr. Pedersen said, in reality, this is what happens. The Administrator does not operate in a political vacuum. I believe it may be necessary at some point to have a national referendum, or something similar, to determine the proper air quality levels. I am suggesting that when you have standards where value judgments come into play, then there really is no other appropriate way to resolve it in our society except through referendum or legislation.

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11. See generally, Ted R. Miller, *Willingness to Pay Comes of Age: Will the System Survive*, 83 Nw. U. L. REV. 876 (1989).