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Congress of the United States  
House of Representatives  
Washington, D.C. 20515

March 15, 1971

Honorable Glenn T. Seaborg  
Commissioner  
Atomic Energy Commission  
Washington, D.C. 20545

Dear Mr. Seaborg:

For a long time now, I have been most concerned about the growth of atomic power plants, particularly construction now underway in such populated areas as in the 27th Congressional District.

A great deal of study is still needed before we move ahead with these plants. Many constituents have contacted me about these problems and I would appreciate if you would add my remarks to the record of the hearings now being held on proposed construction of additional atomic power plants at Indian Point, New York.

Laymen deserve a much clearer explanation of radiological danger from nuclear plants.

Dr. George L. Weil, a nuclear expert, says, "Nowhere is the information gap between laymen and scientist more evident than in nuclear energy..."

As a thoroughly confused layman, I would want to see radiological danger measured in consistent terms that I can understand.

I am frightened when I read some of the data recently published on this subject. For instance, Senator Gravel last year said in the Senate: "Each 1,000 megawatt nuclear power-plant will produce, every year that it operates at 75percent capacity, as much radioactivity as the explosion of several hundred Hiroshima-size bombs. That could mean the equivalent of 250,000 bombs every year, if there were 500 plants operating."

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The Look article speaking about uranium says, "...the Animas River below uranium mills in Durango, Colorado contained almost 300 percent of the maximum daily intake for radium." What is the maximum daily intake? What is the measure that is? Is it stated in curies or rems? How much water would one have to drink from the Animas River in order to equal the maximum daily intake? Could one acquire equal exposure by swimming in the Animas River?

Further along in the Look article it is said, "El Paso Natural Gas Company uranium tailings in Tuba City, Arizona on Navaho land, showed radium radiation levels up to 1,000 times the average background. Gamma radiation was 12 times the level.... Tailings at the empty A-Z Minerals Corporation mill in Mexican Hat, Utah, in May, 1968, also Navaho land, had radon-gas concentrations around the pile up to five times the maximum level."

This sounds very fearsome, and undoubtedly it is. Yet it has no significance under any scale of cognition that the normal layman is used to--or Congressman, either.

We would like to have some one tell us, in consistent, and I emphasize that word, "consistent," terms just what our exposure is. Then we can judge much better what level of danger is posed by a nuclear plant in our neighborhood.

A 1957 AEC study predicted that an explosion in a nuclear reactor would kill 3,400 people up to 15 miles away, injure 43,000 up to 45 miles, contaminate up to 150,000 square miles--about the size of California--and damage property up to \$7 billion. Since I live within 20 miles of the three Indian Point plants that the Consolidated Edison Company of New York is building on the Hudson River-- and thousands of my constituents live closer to it than I do--I am opposed to the building and operation of those plants.

Does this mean that so much radioactivity will be contained within the power-plant, will it be released into the air, or will it be captured and deposited somewhere as waste? Can that amount of radioactivity be contained permanently in a burial ground?

A reader is easily confounded by the various, appalling comparisons and diversity of measurements that are offered by authorities who depict the nuclear situation.

Senator Gravel's statement includes the following: "It should be remembered... that a single 'hot particle' of radioactive plutonium lodged in the lung is capable of causing a lethal cancer." What is a single 'hot particle' of radioactive plutonium like? Is it a cinder that one can see? Is it an invisible atom or molecule floating through the air? Can it penetrate the body unbeknownst to us? How many would be released by a Hiroshima bomb?

Dr. Edward A. Martell, another authority, who is cited in the December 15, 1970 issue of Look magazine, is quoted as saying, "The estimated total plutonium deposited in off-site areas which we have examined so far is in the range from curies to tens of curies." He was speaking of soil samples near the Dow Rocky Flats plant where plutonium triggers are made for hydrogen bombs. So my questions include these: Is a curie a lot or a little? What is its relation by measure to Senator Gravel's 'hot particle' of radioactive plutonium? How many curies are lethal? If they are in the soil, how many curies were found in a cubic foot of soil? What would be their life there? Are the curies floating from the Dow Rocky Flats smokestack dangerous when in the air and how many parts are found in a cubic foot of air? Is that number lethal and how is it lethal after the smokestack shuts down for any reason?

The AEC evidently does not measure radioactivity in terms of curies. For we observe them using measures such as the "rem," an acronym for "roentgen equivalent in man." Sometimes the "rad" is used being another unit of radioactivity.

However, I would like to reiterate that, as a layman, I have no ready way to sort out all the statistics to understand the magnitudes of radiological exposure in relation to what is safe and what is lethal.

It seems to me, that the AEC owes it to us, first, to reduce the myriad yardsticks of danger to much simpler terms. Then, the citizen in the street can judge better what his hazard truly is. The press, too, should cooperate by using such a standard terminology that will be understandable to all readers.

In effect, the standard measure of radioactivity ought to become common parlance. The standard may have to be qualified separately for air, water, and soil as to quantity per cubic feet. It may have to be qualified for a time if, for example, radioactivity in the air dissipates after awhile. If the exposure is heightened by ingestion, then that should be a qualification also.

Perhaps we will look more kindly on nuclear plants, or even accept them in remote places, if their relative danger is put in simple terms that we all understand, like the Fahrenheit scale or the clock on the mantelpiece.

Meanwhile, everyone should be skeptical of nuclear plants until the AEC can produce, and we can judge, a scale for radiological exposure that is within the frame of reference of ordinary laymen, and their Congressmen.

Sincerely,

JOHN G. DOW  
Member of Congress

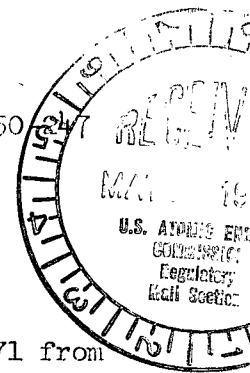
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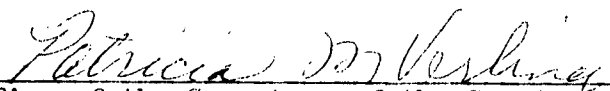
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