UNIVERSITY OF MINNESOTA
The Medical School
Minneapolis 14

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Air Mail Special Delivery

Senators Hubert Humphrey and Eugene McCarthy
Senate Office Building
Washington, D. C.

Dear Hubert and Gene:

I have a new job for one of you. I don't know whether either of you is willing to take it on, but I know it needs doing. I am enclosing copies of a statement I prepared for the Governor's Committee on Atomic Energy Development Problems. From it you will see that we have been greatly misled by the A. E. C. as to the "absolute safety" of Sr^{90} levels in the country. The really shocking thing to me is that the A. E. C. itself has no other significant number of analyses of wheat. This I learned by telephone from Dr. Ira B. Whitney in the New York office of the A. E. C. last Tuesday.

The fact is that the A. E. C. has not done its practical job in the biological and medical area verywell. It is not that Congress has not appropriated enough money to do it. The trouble may be that the A. E. C. is run b commissioners who are primarily in the weapons business and don't really know enough about the biological and medical sides of things to have informed opinions as to policy in these areas.

There is a job for some Congressional committee investigation here. The Congress had every right to expect that its appropriations to the A. E. C. would be used to investigate the Sr^{90} hazard in soils, plants, animals and man, and that by now, ten years after the secret Project Sunshine was started, we would have all the basic facts necessary to meet the hazard that exists today. Actually, we know almost nothing of practical value as to protection on the biological side. Hundreds of millions of dollars, exactly how much I don't know, have been spent on biological research under A. E. C. auspices, but it has gone mainly into things almost totally unrelated to the practical problems. I would not object at all to the fact that many millions of Federal money have gone into basic studies of genetics, metabolism, etc. I only object to the fact that the A. E. C. has not done the job the public thought it was doing and needed to have done.

What I am suggesting is an investigation looking toward Congressional action to induce the A. E. C. to do a better job in acquiring the simple facts about radioactivity levels in soil, water, plants, animals,

animal products such as milk and eggs, and in man. They should also make greater efforts to get information about the factors that determine the amounts of Sr^{90}, uranium, plutonium and other important elements, that are taken up by plants and animals, including man.

The A.E.C. has been so concerned about reassuring the public that there is no harm in what it has been doing in the bomb testing area that it has failed to devote enough attention to finding out the facts even as to what the levels of radioactivity in foods are.

I should tell you that there are some very competent people now on the A. E. C. Advisory Group for biology and medicine. Harland Wood, Bentley Glass and James Hersfall are all very sound. They are, I believe, recent appointees. I do not know whether this Advisory Group has actually had much influence, however.

Another thing that should be looked into is why the Plains States and our region should be made to take the brunt of so much fall-out burden if we are to continue bomb testing. I think all of the Senators and Congressmen from those areas might get together and get stoppage of further contamination of this region. Some other region might take the brunt if testing must continue. It would be only fair to spread the load.

So much for the job I hope one of you will undertake.

There is another matter that I have been thinking about for some time. You may be able to use the idea some time. I really cannot see that the use of our scarce scientific and technical manpower on bomb development is compatible with achieving our greater need which is to get better ICBM's. Every million dollars we spend on bomb development taken hundreds of men from the pool otherwise available to work at missile development. There are only so many scientists in the country and if you appropriate money to employ them in one area they are not available in another.

Isn't this perhaps our most compelling military reason for stepping the bomb development and testing business? We already have enough bombs, and cleaner or smaller ones are not going to make us less vulnerable to being wiped out by the Russians. I would feel more secure if we had some working ICBM's. with which to stand off Russian threats in the next few years. We are not getting them as fast as we could if we were to quit wasting manpower on bomb development and let it work on missiles.

Sincerely yours,

Maurice B. Visscher

STATEMENT BY MAURICE B. VISSCHER, FEBRUARY 6, 1959

The Governor's Committee on Atomic Energy Development Problems has initiated studies of environmental contamination by radioactive materials in this general region. In one study in the spring of 1958, soy bean plants from various areas were studied for their gross radioactivity levels, and in another, numerous samples of wheat from North and South Dakota and Minnesota were studied. The results showed unexpectedly high levels of radioactivity from various areas, and the range of values was very large. Because these preliminary results indicated that the Plains States and the Northwest Central region in particular might have a problem in connection with environment radioactive contamination of its food supplies, either now or in the future, it was decided to have some more precise measurements made. Since Strontium 90 was considered to be in all probability the most serious hazard, it was studied first.. The State Department of Health undertook early last summer to assay Sr 90 in milk, and last spring, the U. S. Atomic Energy Commission agreed to analyze certain other materials for the Committee.

Samples of wheat from the 1956, 1957, and 1958 crops from several localities, obtained from the Institute of Agriculture of the University of Minnesota, were analyzed by the A. E. C. and the results have just been received. The findings indicate that some further action is necessary in connection with atomic energy problems, especially in regard to the establishment of a permanent State Commission and in connection with appropriation of funds for its work. There are possibly serious economic as well as health implications to the entire North Central and Plains region including Minnesota in the data we are presenting.

The A. E. C. findings on Sr 90 content of wheat in this region are as follows:

Location	Strontium 90 Content Micro micro curies per gram of calcium		
	1956 crop	1957 crop	1958 crop
1	163	150	124
2	169	146	191
3	88	187	184
4	82	200	#

	1956 crop	1957 crop	1958 crop
5	82	#	111
6	74	606*	213
7	94	105	129
8	#	124	120
9	#	#	158
10	#	#	169
Averages	107	152	155

* Excluded from averages.

No sample.

The locations were chosen to obtain as great a variety of soil types as possible. These results are the only ones available in the United States today on wheat from a number of locations over a period of three years.

To interpret these figures, it must be pointed out that it is generally agreed that the maximum tolerable level for Sr 90 in food for a population is not more than 100 micro micro curies per gram of calcium in the diet. Therefore, anyone who derived all of his calcium from whole wheat of the type analyzed would exceed the maximum tolerable limits. Fortunately, however, two factors reduce the hazard to people using wheat. The first is that a majority of the calcium and, therefore, the Sr 90, is in the bran and is milled out of white flour. The second fortunate circumstance is that we ordinarily get only 5-10 per cent of our calcium from cereal grain products in the average American diet. Thus, even if there is an excess of Sr 90 in one foodstuff, it need not be hazardous unless one lives on it as one's major food. However, here the problem is complicated by our ignorance. There are not available today adequate figures on the Sr 90 content of other foods. The U. S. P. H. S. has released figures on Sr 90 in milk from the areas of St. Louis, Missouri and Fargo, North Dakota which show that in the fall of 1958 the values there averaged 14 and 17 micro micro curies per gram of calcium in the two cities. The values in some other parts of the U. S. are as low as 2. An 'educated guess' as to Minnesota levels is that they are not less than 8 micro micro curies per gram of calcium. Milk provides more

than three quarters of the calcium in the American dietary, consequently, the amount of Sr 90 contaminating it is of greatest practical importance. However, if plant foods contain as much as 600 micro micro curies per gram of calcium, they could be very important in raising the average level to the so-called maximum tolerable limit even if they supplied a minor fraction of the total intake.

One further point should be mentioned. It is usually agreed that Sr 90 is more hazardous for children than for adults. No one knows positively what is the minimum amount of Sr 90 that will do damage to growing children. Some recent studies indicate that it may be much less than 100 micro micro curies per gram of calcium. However, only a very small fraction of a population will sustain any obvious injury from small doses.

Bone cancer and leukemia are believed to be the main diseases which may result in an individual from eating small amounts of Sr 90. These are fortunately relatively uncommon diseases. According to the State Board of Health, there are about 36 deaths per year in Minnesota from the first and 300 due to the second, out of total deaths of somewhat under 30,000. Increases in the above rates ten or twenty years from now might be expected to occur as a result of increased radioactivity.

This report is being made because it seems obvious that the State of Minnesota, in common with all its neighboring states, has an interest in doing two things. First, it must learn more about what its Sr 90 and other radioactive contamination problems are. Milk, meat, fish, poultry products, and vegetables require study in all areas. Second, it must be prepared to apply corrective measures since there may be some localities where all the foodstuffs, including milk, are heavily contaminated, and because if bomb testing continues throughout the world, the situation will undoubtedly become progressively worse. It seems essential to be able to protect children now against food containing as much as 600 micro micro curies per gram of calcium. To do this one must have more analytical information. At least as important as this is to initiate researches on methods of lowering the Sr 90 content of the plants themselves and of diminishing the amount of Sr 90 retained in the human body after food containing it is eaten. Scientists already have some clues as to how these objectives might be attained.

It is the responsibility of the State Legislature to decide whether to make a serious effortto minimize these health and economic hazards. It can do so by establishing the Commission that Governor Freeman is requesting and by providing it with funds to operate.

It is appropriate to note that Governor Freeman's foresight in setting up a committee to study and report upon these problems is responsible for the fact that Minnesota is the first state in the Union to obtain information of the type reported at this time.

There will be some people who will say that these findings should have been kept secret, so as not to disturb people. Their false logic would be that "what people don't know, doesn't hurt them." In any dictatorial society that is the rule that would be followed. It is our philosophy that in a democratic society people not only have a right to know, but must know the facts if they are to act intelligently. The role of the scientist is to provide a sober interpretation of facts, to allow people to take precautionary and preventive measures before it is too late. Fortunately, we have a Governor whose policy it is to give the people the facts so that they may act intelligently through their Legislature. The present situation is not one to become panicky about. It is, however, one that requires increased information to avoid a panic situation in the future.