

Dr. MALONE: Let me answer that in two ways.

First, certain kinds of pollution problem, yes; almost identically the same kind of model. The kind of simulation problem we are thinking about in Connecticut is not necessarily the same model, but I would take issue with the thought that it would be a simpler problem. The proper mathematical model for a single cloud, as far as its demands upon computer speeds and storage, is about the same as the global circulation in its demands on computer speed and storage capacity. On the other hand, you are quite correct in that the habit of thinking, the way of handling these problems are characterized by a certain unity even though they are different models and different parameters.

Mr. VIVIAN: I am curious to know if the variety of Government agencies which handle pollution of all forms have a coordinating unit—a single coordinating center which deals with the whole subject of pollution.

Dr. MALONE: I am sorry, I don't know.

Mr. VIVIAN: I didn't expect you to know the answer to that question but perhaps someone else here will know.

Dr. MALONE: There is a PSAC Panel.

Mr. VIVIAN: That would not normally deal with this.

Mr. DADDARIO: Your questions are extremely important, Mr. Vivian, and I think we ought to keep them in mind when other witnesses who should be able to give us an answer come before us.

Mr. VIVIAN: I do have one brief observation to make and that is on the estimated cost of auto antipollution devices. You quoted a figure of \$500 million, I believe, Mr. Chairman. This represents approximately one-tenth of 1 percent of our gross national product which does not seem very onerous. An estimated cost of water and sewer pollution abatement activities for municipal purposes shows that we have about another tenth of a percent each in the operation of plants and in capital investment which suggests that our total figure in pollution reduction is not a very large figure. A few tenths of a percent of the gross national product is a pretty small figure—so we have a long way to go.

Dr. MALONE: You will find an article in Fortune magazine in 1963 which takes very much this point of view. I think you will find it very interesting reading. They address themselves specifically to this question. Can we afford air pollution? They answer very much in the terms you have now.

Mr. DADDARIO: Mr. Fulton, we are happy to have you here.

Mr. FULTON: I come from Pittsburgh, Pa., where we are very interested in pollution and the methods being used to clean it up.

I liked the comment on page 3 of your statement that removing those artificial barriers to the application of pollution control devices constitutes the major problem of the 1960's in the field of pollution abatement. I think that that is an excellent statement, and with the chairman's permission I would like to have you expand your ideas on it because I believe that costs are not the only barriers. There are many other barriers and we should be looking at the methods of implementing controls.