What you say is so, if it could be done it would alleviate our problems. What is the chance of such a return so that it will be economically feasible?

Dr. HIBBARD. We must try to predesign our processes for producing automobiles and other products to enhance their recycle value. We must apply the total systems concept to the use and reuse of our entire supply of minerals.

Many scrap materials from obsolete automobiles contain metal values in combinations, both mechanical and chemical, that are not normally encountered by the extractive metallurgist. Vast tonnages of pure metals and alloys are trapped in manufactured products. The profusion of copper wiring locked between panels in automobiles and electrical appliances is an example. Many of the ever-increasing variety of alloys returning as scrap continue to accumulate in junk piles for want of extractive methods for separating and reclaiming the metals they contain. This problem is compounded by the fact that many of these alloys—some containing metals in critical supply—were developed to resist just such conditions as are used by the extractive metallurgist for making separations. That is, they are extremely refractory and corrosion resistant to most chemicals. New technology must supply answers to these problems, and show the way to recovering these natural resources and returning them to our economy. The reuse of these resources would be advanced by properly designing systems which will (1) extend the life of our products; (2) assist in ease of maintenance and repair; and (3) simplify the salvage of metals.

With respect to the gold and silver in the flyash from an incinerator, this ash is a solid particulate matter normally removed by a precipitate, or other techniques, from the incinerators' stack gases.

The values per ton in this flyash are equivalent to mineable values in the West.

If one could find a way of collecting this flyash, either by a pneumatic or slurry technique, or getting it concentrated in some other manner, the material would be well worth shipping to a smelter for recovery of gold and silver.

Mr. DADDARIO. You are working on this.

Dr. HIBBARD. Yes, sir. We have been in contact with the New York City government, and we believe that they have enough incinerators to supply an adequate quantity of material to make metal recovery economically feasible.

Mr. DADDARIO. Who else in government, just from the standpoint of how this is working out, is working on this same kind of a proposition, the economic feasibility requirement being so important? How are you working together? What is the size and scope of the whole proposition?

Dr. HIBBARD. The Public Health Service is working on municipal refuse as well, and we are cooperating with them. We have a memorandum of understanding of areas in which we are going to work in and techniques by which we will keep each other informed. I think this cooperative effort worked out extremely well.

Mr. DADDARIO. You are working together or separately on the same proposal letting each know what you are doing?