

## STATEMENT BY H. D. DOAN, PRESIDENT, THE DOW CHEMICAL CO.

The Dow Chemical Company is pleased to contribute its knowledge and experience to the hearings of the House Public Works Committee on H.R. 16044. As a commercial supplier to the municipal water pollution control market for some years now, Dow feels qualified to comment on the current situation and on the potential effects of this bill.

In the field of municipal water pollution control, there is a very real distinction between capital funds and operating funds. A city which sets out to build or expand a sewage treatment plant will get the necessary capital through bonds and Federal construction grants. Although Federal funds are not being appropriated at the most desirable rate, there is no question of their eventual availability. The city has only to apply and wait. In time, plants will be built, and pollution will be reduced.

The operation of most municipal plants, however, reflects a very different situation. Municipal governments, along with other governmental units, have limited funds which must be disbursed in answer to a multitude of pressures, many with higher priorities than water pollution control. But more importantly, there is little incentive to spend money on the operation of treatment plants.

Almost all municipal treatment plants are run as cheaply as possible. This stems from a lack of standards by which to measure operating efficiency and from the fact that there is no real reward for producing a cleaner effluent. As businessmen, we can conclude that clean water, as it comes from a treatment plant, has no economic value.

Dow has, for example, demonstrated the concept of raw waste flocculation using chemicals in over 50 cities throughout the U.S. In over 90% of these demonstrations, the operation of the plant was significantly improved and the quality of the effluent was raised. Despite its merits, raw waste flocculation has been adopted by only three cities. Chemicals for raw waste flocculation must be purchased with operating funds. Our products which are purchased with capital funds are being accepted on their own merits.

The bill which is before your Committee now, H.R. 16044, would be a step in putting a value on cleaner water.

The bill provides \$25 million a year for operating money, for "... proven new methods to achieve substantial immediate improvement of effluent quality, including phosphate removal".

Whatever is purchased with this money will have to meet the criteria of immediacy and newness. Included could be flocculating chemicals, both organic and inorganic, activated carbon for advanced treatment, and so on. It should go without saying that only workable items will be purchased.

Because most of Dow's experience is with polyelectrolytes, or polymers, and because they are the most universally applicable, they will be the subject of the majority of this statement. Bare in mind that they are being used primarily as an example of what can be done.

Polymers are high molecular weight, water soluble, organic compounds. They are used as controlled flocculants to aid in solids-liquid separation. They have, for many years, been incorporated into the manufacture of paper, the mining and processing of ore, the refining of sugar, and the treatment of drinking water.

New uses for polymers are being investigated. Under a two-year contract with the Federal Water Pollution Control Administration, Dow is testing their value in the treatment of combined sewer overflow. A cooperative project between Dow and the Maryland-National Capital Parks and Planning Commission has resulted in a permanent polymer treatment station just above Lake Needwood in the Washington, D.C., area to remove silt from a stream. We believe our silt removal concept could be expanded into the treatment of whole rivers. We are testing erosion control chemicals by which silt may be kept out of streams. Polymers are even showing promise as an effective fog dispersant at airports.

Polymer treatment of municipal sewage could begin tomorrow in most existing treatment plants, with negligible capital cost.

Polymers are controlled flocculants, generally used in the primary portion of a treatment plant where the wastewater is held quiescent to allow solids to settle out for collection and disposal. These long-chain molecules attract and hold suspended solids, causing more to settle out faster. Polymers can be expected to increase solids capture by about 50%, depending on the chemistry of the waste, the design of the plant, and the quantity of wastewater that the plant is required to treat.