

In Power Capacitors

Insulating Fluid Seen Replacement for PCBs

Development of a new, environmentally safe, insulating fluid that may replace "PCBs" in some electrical equipment applications was announced at a press conference on Tuesday in New York.

McGraw-Edison Co. and Dow Chemical Co. jointly reported that they have developed an insulating fluid as a replacement for PCBs (polychlorinated biphenyls) in high voltage power applications, which are said to improve

More than 200 equipment and machinery manufacturers, exhibiting at the 1974 Exposition of the Chemical Industry, in Charleston, took for increased sales in 1974 as a result of plans for increased capital expenditures, a growing demand for equipment in the Middle East, required expenditures for pollution control and efforts to conserve energy (See Page 1).

both the quality and quantity of electrical service under certain conditions. McGraw-Edison is a major manufacturer of capacitors and other electrical equipment used by utilities and industry.

Dow began development of the fluid several years ago and was joined by McGraw-Edison in refinement of the fluid for the electrical power distribution industry.

The joint announcement said that Dow plans to make the new insulating fluid commercially available early in 1976. McGraw-Edison plans to begin using it in capacitors by mid-1976.

Restricted Application
PCBs — introduced more than 20 years ago and industrially used because of their outstanding properties — have recently received restricted application because of environmental considerations.

Reports of their potential harm to the environment and to fish and mammals have resulted in a three-year voluntary restriction of PCB distribution to oil industries, sub-chemicals in closed systems, such as those found in power

capacitors. Some scientists have proposed that the chemicals may have a much longer lifespan than previously suspected and are causing for a total ban on their use.

Lagging Effects

When the chemicals are inadvertently discharged into the environment, evidence of PCB contamination in aquatic animals has been discovered miles from where the chemicals have entered the environment and/or waterways. And some environmentalists now are warning against even possible long-term lagging effects of the chemicals because of PCB's ability to withstand a natural breakdown of components.

According to Dow and McGraw-Edison, the new fluid — which has an abridged chlorinated biphenyl (CBPO) base — features the following health and environmental advantages:

— It is 24 times less toxic than PCBs.

— Less readily toxic to mammals than PCBs.

— More biodegradable than PCBs.

— Easier to dispose of than PCBs.

Herbert M. Appleton, president of McGraw-Edison's Electrical Systems & Services Group, said, "After examining results of extensive testing at Dow Laboratories and after evaluating our own experiences with the new fluid in our equipment in hundreds of test cycles over a three-year period, we have determined that our fluid offers the same or a better electrical performance than PCBs, at a far lower level of toxicity to the environment and at an economically satisfactory price."

Problem Magnified

"We have recognized the problem and have both taken and supported steps to see that PCBs are handled in the safest possible manner," he added. "We built a new plant at Greenwood, S. C., for high voltage capacitor production and have worked in the industry to call attention to proper handling and disposal methods."

"At the same time we have been engaged since 1971 in an extensive research program to develop alternatives to PCBs. Now, we have that alternative for use in power capacitors — ecologically sound and economically feasible liquid dielectric that meets all the goals of our development program."

"In view of the significance of this development from an environmental point of view, McGraw-Edison is committed to reaching the economic, highly biodegradable liquid dielectric available as an alternative to PCBs to new high-voltage capacitor producers by our company and other manufacturers."

Industry Hopes During 1976

Available, the report claims, export imports were down an even greater amount — an 8 percent contraction to an 8 percent gain. During the first half of 1975 the entire net of the record sale of \$1,510 million, a gain of \$1,510 million — represented in percentage terms a 10 percent gain.

It is also noted that many of plants have below capacity close to