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Subject: POLYCHLORINATED BIPHENYLS - NOTICE OF PROPOSED RULE MAKING FEDERAL REGISTER, Vol. 37, No. 54, March 18, 1972, pp. 5705-5707.

May 15, 1972

Hearing Clerk
Department of Health, Education, and Welfare
Room 6-88
5600 Fishers Lane
Rockville, Maryland 20852

Gentlemen:

We support the expressed intent of the proposed rule making on polychlorinated biphenyls -- "that the sources and levels of PCB's in animal feeds, feed components, and food for human use (can and should) be significantly reduced or eliminated so as to minimize the overall long-term human exposure to PCB's." We are also in general agreement with the proposals made, recognizing that to a considerable extent they confirm and codify steps already taken as a result of private initiatives. These private initiatives include, among other steps:

- an evaluation of PCB pollution problems, described in The Use and Disposal of Electrical Insulating Liquids, published by the National Industrial Pollution Control Council, June, 1971;
- the withdrawal from the market - by the sole U.S. producer - of PCB's for "open" applications such as formulations in lubricants, and ingredients in paints, plastics, inks, etc.;
- the withdrawal from the market - by the sole U.S. producer - of PCB's from semi-closed applications such as heat-transfer liquids and hydraulic liquids, and their replacement, free of charge, in food-producing plants, by non-PCB formulations; and
- the activation, by the American National Standards Institute, of Committee C107, to draw up guidelines to protect the environment from any adverse consequences of the remaining uses; i.e., sealed electrical equipment, viz., capacitors and transformers.

Our purpose in making these comments is to aid the Commissioner in achieving such clarity and precision in the rules that the intent may be carried out without jeopardizing the public and industrial benefits accruing from the use of PCB's in two classes of sealed electrical apparatus: transformers and capacitors. These

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benefits -- chiefly fire safety and design efficiency of electrical apparatus -- are detailed in our memorandum, "The Role of Polychlorinated Biphenyls in Electrical Equipment", February 4, 1972, which document is submitted in support of this letter of comment.

With specific relation to the food-processing industry, there are a number of roles fulfilled by PCB-containing electrical apparatus which cannot be adequately performed by substitutes. For example, where transformers are required, as in stepping down distribution voltage to utilization voltage or supplying furnaces or large motors, only PCB transformers can meet required performance criteria while at the same time offering the degree of fire protection essential to installation in occupied premises. The capacitor applications likely to be found in a plant of the type at issue include the compressor systems of air-conditioning units, the ballasts of fluorescent lighting, phase-splitting and power-factor correction for electrical motors, filtering of electronic power supplies, and others (see accompanying report). Both types of equipment possess several characteristics relevant to the subject of protection against PCB contamination:

1. Both capacitors and transformers are constructed in sealed metal cases.

2. Failure rates are low -- of the order of 0.1% to 0.2% per year.

3. Failures severe enough to affect containment integrity are still rarer. About 0.01% of failed capacitors rupture, that is, about one in 5 million installed units. Such events in transformers are too rare for a statistical estimate to be made with any confidence.

4. In the rare event that a failure affecting case integrity occurred, the immediate loss of electrical function would be a signal to operating personnel to take appropriate precautions or remedial measures to avoid any effect upon the material in process.

Because of these characteristics, none of the PCB contamination events of which we have knowledge has been ascribed to the use of capacitors or transformers.

Because of the widespread use of fluorescent lighting in factories of all types, an additional comment about that application seems appropriate. The capacitors used in ballasting fluorescent lamps are, as noted above, in sealed metal cases. These cases, in turn, are imbedded in a sealing compound surrounded by a second metal case, housing the complete ballast assembly. The ballast is installed in a lighting fixture (luminaire) which may or may not be itself enclosed. The amount of free, unabsorbed dielectric liquid in a ballast capacitor is very small - about ten grams per unit. Furthermore, in some ballasts (notably those supplied by General Electric) internally protected capacitors are used. These capacitors contain a thermal or pressure-sensitive device to remove the capacitor from the circuit in the event of electrical failure, thus isolating it before internal pressure can build up to the point of case rupture, making the possibility of a leak still more remote.

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For the above reasons, as well as information contained in the accompanying report, we feel that electrical components in factories engaged in the processing of animal or human food or food packaging materials merit special consideration in rule making. Failure to accord the appropriate recognition would result in chaotic rebuilding and re-equipping programs accompanied by inordinate expense. Transformers, for instance, could be replaced by mineral oil types, which would require location outside and/or in vaults to meet fire underwriter and electrical code provisions. Replacement capacitors, should they be obtainable, would be larger than PCB types and in many cases would not fit into existing equipment -- requiring, for example, the ripping out and complete replacement of factory lighting systems. Ninety percent of all industrial and power capacitors made today contain PCB. Their inadvertent banning, as a consequence of broadly stated or loosely interpreted prohibitions against the use of PCB's, would require engineering inspection and possible design and rework attention to virtually all electronic and electrical systems in a modern factory; all without demonstrable improvement in sanitation.

Our concern focuses on the language of two prohibitions, each appearing, with appropriate variations, in the Part 3 section on animal feed, and Part 3 section on food-packaging materials, and the Part 128 section on human foods. We quote only the first pair of references to illustrate our comments, which should be understood to apply to the others as well:

> Part 3, Section 3, Par. (b)(2) - New equipment or machinery for handling or processing feed in or around an animal feed producing establishment shall not contain PCB's. (Our Reference "A")
>
> Part 3, Section 3, Par. (b)(3)(iii) - Eliminate from the animal feed producing establishment any other PCB-containing materials, whenever there is a reasonable expectation that such materials could cause animal feed to become contaminated with PCB's whether as a result of normal use or as a result of accident, breakage, or other mishap. (Our Reference "B")

With regard to Reference "A", we recommend making a distinction between equipment or machinery which is in physical contact with the feed (or packaging material, or food) on the one hand; and, on the other hand, associated power supplies, control equipment, or auxiliary equipment which is not in contact with the material it is desired to protect. For example, PCB would be banned in cookers, pasteurizers, conveyers, storage vessels, electrostatic separator electrodes and the like; but PCB as dielectric fluid in sealed capacitors or transformers would be allowed in electronic controls, power supplies, machinery drives, air conditioners, lamp ballasts, electrical substations, and the like installed in the same factory where the feed (or packaging or food) is processed. Therefore, in consonance with what we believe to be the Commissioner's intent in the original formulation, we suggest the following wording:

> Part 3, Section 3, Par. (b)(2) - New equipment or machinery for employed directly in handling or processing feed in or around an animal feed-producing establishment shall not contain PCB's.

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Following the same logic, in Part 3, Section 3, Par. (b)(1), we suggest:

> New equipment or machinery for manufacturing employed directly in physical operations upon or handling of food-packaging materials shall not contain or use PCB's.

Again, in Part 128, Section 128.4, Par. (b)(1):

> New equipment, utensils, and machinery for employed directly in handling or processing food in or around a food plant shall not contain PCB's.

With regard to Reference "B", similar considerations apply. The difficulty lies in defining the concept of "reasonable expectation". From an administrative viewpoint, the easiest way for administrative personnel to decide such issues is to ban PCB in all forms (without regard to the fire hazard or expense so introduced); and indeed, shortly after the publication of the proposed rule making, it came to our attention that some people in the food industry feared that this paragraph would be interpreted to ban all capacitor-equipped motors, for example, from food-related factories. Whereas we are confident that such is not the intent of the proposed rule making, we have no wording to recommend that would insure uniform interpretation of "reasonable expectation". We propose instead the insertion of language specifically authorizing the use of PCB transformers and capacitors, excluding them from the category of banned materials. This could be accomplished in the following manner. After the proposed Reference "B" paragraphs (i.e., Part 3, Section 3, Par. (b)(iii), animal feed; Part 3, Section 3, Par. (b)(2)(ii), food packaging materials; and Part 128, Section 128.4, Par. (b)(2)(iii), human foods.) insert the words:

> This provision does not require the elimination of certain sealed electrical apparatus: specifically exempted are transformers and capacitors containing PCB, when applied within the manufacturer's ratings and installed separately from that equipment which is in physical contact with the material being processed.

Respectfully submitted,

James S. Nelson, Consultant-
Product Environmental Compatibility

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