Formaldehyde cancer risk

Court not convinced of dangers

Washington

A YEAR-LONG ban on the use of urea-formaldehyde foam insulation in homes and schools is about to be disallowed by a federal Court of Appeals. Declaring that the Consumer Product Safety Commission's ban was "not good science", the court in April overruled the commission's action; unless a stay is granted this week pending a planned appeal to the Supreme Court, the court's decision will take effect immediately. Even if a stay is granted, it may merely postpone the inevitable, as the Supreme Court is considered unlikely to agree even to hear the appeal.

The Court of Appeals' unanimous and strongly-worded decision said the commission had failed to provide adequate data to prove that formaldehyde released by the insulation presented an "unreasonable risk" — the legal standard for rules issued by the commission. The court particularly criticized a cancer risk assessment based on a single study involving 240 rats and on exposure estimates derived from measurements made in houses whose occupants had complained of acute symptoms of formaldehyde exposure — rather than in a random sample of houses with the insulation.

The industry, which brought the suit, argued that "complaint" households had higher than typical formaldehyde concentrations, usually as a result of improper installation, a problem that could be corrected by regulations that stop far short of a total ban.

The commission first began studying the problem as a result of complaints from homeowners who had installed the insulation. Headaches, respiratory irritation and dizziness were the most common complaints. Air samples taken in these houses revealed an average formaldehyde concentration of 0.08 parts per million (p.p.m.), compared with 0.03 p.p.m. in houses without the insulation. While the commission was investigating the matter, preliminary results of the rat carcinogenicity study became available, adding to the evidence against formaldehyde. In this study, carried out by the Chemical Industry Institute of Toxicology, rats exposed to relatively high levels of formaldehyde (14 p.p.m.) developed nasal tumours.

If, as expected, the Supreme Court affirms the Court of Appeals' decision, the commission could go back and redraft its regulation. But at the very least, it would need to provide more extensive monitoring data and a more substantial argument of the risk posed. On the other hand, the court did acknowledge the acute effects as "a real problem". And it dismissed one favourite argument of the industry, namely the failure of epidemiological studies in humans to show any carcinogenic effects. "It is highly unlikely that studies involving

a total of 10,000 workers would detect such a small risk" of increased cancer as is at stake at the exposure levels involved, the court said.

The effect of the court's decision is somewhat dampened by the existence of state and local bans on urea-formaldehyde insulation that will remain in force, and by a now widespread reluctance on the part of homeowners to install the insulation. This reluctance was intensified by an "advisory" issued by the National Association of Realtors warning of the effect of the insulation on the marketability of homes.

Where the ruling may have a more immediate effect on the industry is in how it deals with a spate of liability suits filed in the wake of the commission's ban by homeowners who had already installed the

insulation. A memorandum by one of the industry attorneys summing up the court's decision notes that the ruling of "no evidence of unreasonable cancer risk or of adverse acute effects" should be of substantial help in defence of these actions.

The memorandum also notes that the decision may provide useful ammunition in defending decisions by the Occupational Safety and Health Administration (OSHA) and the Environmental Protection Agency not to pursue further regulatory action on formaldehyde. Both agencies have come under pressure to tighten their regulation of formaldehyde in the light of the cancer studies. OSHA has in fact been sued by the United Auto Workers and several other unions which are demanding an immediate emergency standard to supersede the present 3-p.p.m. workplace limit (based on an eight-hour average; the rule also sets an absolute ceiling of 5 p.p.m.). That case, which was brought last year, has yet to go to trial.

Stephen Budiansky

US accelerator decision

Desertron project gets the vote

Germantown, Maryland

BROOKHAVEN National Laboratory's troubled ISABELLE accelerator project should be scrapped, a high-level federal advisory group said on Monday, and work should begin immediately on a new "Superconducting Super Collider" (SSC). This is a refinement of the "desertron" concept that would accelerate protons up to 20 GeV and, in the words of the group, "assure a forefront US high-energy physics program into the 21st century".

The SSC concept had been strongly endorsed by White House science adviser George Keyworth, who this spring called upon the high-energy physics community to abandon "pet projects" and work together to recapture America's pre-eminence in high-energy physics.

The decision of the High-Energy Physics Advisory Panel's subpanel on new facilities was not reached easily. Although the endorsement of SSC was unanimous, the decision to abandon ISABELLE, now called the Colliding Beam Accelerator (or CBA), was approved by only "a narrow majority". The subpanel's report presents arguments on both sides of the matter; arguments for terminating the project include the "limited opportunity for new and improved physics at CBA" and the "difficulty of attracting the most competent, well trained people to a project that is scientifically not sufficiently exciting".

To some extent, CBA has been overtaken by events. It was designed as a 400 GeV proton-proton collider to search for the W and Z⁰ vector bosons, which have since been detected at the European Organization for Nuclear Research (CERN) in Geneva. And even the arguments in favour of completion of CBA damn it with faint praise, stressing its con-

tribution to the research and development need for SSC and its ability to bridge the gap while SSC is under construction.

In rejecting this view, the majority said that the contributions that CBA could make would be offset by its encumbering rapid construction of SSC.

The SSC concept, as refined at a workshop held in early April at Cornell University, involves colliding 10–20 TeV proton beams, which would probe secondary particles in the mass range of 1–2 TeV. "There is strong agreement that real progress in our understanding of particle physics will come from study of this energy region", subpanel chairman Stan Wojcicki said. The technology necessary — superconducting magnets — is available as a result of the pioneering work at Fermilab in developing the Tevatron.

The subpanel on Monday estimated the cost of construction to be \$2,000 million. In order to achieve operation by the early 1990s, the subpanel recommended an immediate initiation of research and development in fiscal year 1984, with a budget of some \$50 million a year for the next four years. Construction would then take another five years. The cost estimates do not include site costs, which the subpanel assumed would be contributed by the host institution. One design discussed at the Cornell workshop would involve 5 tesla magnets in a 15-km ring.

The subpanel's decision was a sharp blow for Brookhaven, which, after running into "unexpected difficulties" in 1980 with CBA, launched a successful two-year research and development effort to redesign the magnets. Brookhaven is said to be considering a back-up proposal to develop CBA for use as a large heavy-ion accelerator.

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