

RESOURCES & ENVIRONMENT

posure go back only to 1972. Thus, the risks of low-level exposure must be extrapolated from data on high-level exposure. To make matters worse, many different mineral compounds bear the label "asbestos," each with a different level of toxicity.

Not surprisingly, scientists have been unable to produce universal safety guidelines. The price tag for removing all asbestos from the nation's schools and office buildings: an estimated \$20 billion. Zurer doubts that such extreme measures are necessary, or even practical—especially since wary insurance companies are refusing to cover contractors who do this work.

Reassessing Nuclear Meltdowns

"Assessing the Effects of a Nuclear Accident" by Colin Norman, in *Science* (Apr. 5, 1985), 1515 Massachusetts Ave. N.W., Washington, D.C. 20005.

Six years after its near "meltdown," Three Mile Island (TMI), the nuclear power plant in Harrisburg, Pa., is still synonymous with disaster in the public mind. But to many nuclear scientists and engineers, what did *not* happen at TMI is more interesting than what did, spurring a re-assessment of nuclear accidents in general.

Following the TMI mishap, observes Norman, an editor at *Science*, scientists were surprised by the absence of radioactive iodine in the environment surrounding the stricken nuclear plant. Previous meltdown models predicted the formation of an iodine vapor cloud, which is potentially fatal and difficult to contain. However, as Norman notes, "it is now widely accepted within the nuclear research community that the chemistry underlying the earlier predictions was faulty."

Studies of TMI by the American Nuclear Society (ANS), the Industry Degraded Core Rule-making Program (IDCOR), and the American Physical Society (APS) showed that U.S. reactor containment vessels can withstand pressures twice as high as the design indicates. They also found that more radioactive particles stay inside the plant—instead of escaping—than was expected. Airborne fission products stick to walls, equipment, and pools of water.

Both the ANS and IDCOR favor reducing the "source term"—estimates of radioactivity released during an accident. But the APS researchers caution against "sweeping conclusions." They warn that tests of containment vessels are far from conclusive and that many chemical reactions which occur during a meltdown are not well understood. In addition, the United States (unlike France) has no single, standardized nuclear power plant design, which means that hazards could vary greatly from site to site.

The nuclear power industry now wants the U.S. Nuclear Regulatory Commission to change some regulations based on these new findings. But because the prestigious APS refuses to endorse the more optimistic conclusions of the other two groups, Norman reports, the NRC is not likely to oblige. Too many questions remain, and the APS says that four more years will be needed to answer them.