
Where there's smoke . . . there's no regs

The Nov. 21, 1981 fire that killed 84 persons at the MGM Grand Hotel in Las Vegas marked the beginning of a string of hotel fires in the months to follow — including fires at the Stouffer's Inn in New York and the Las Vegas Hilton — that would also exact a tragic toll in human lives. In all cases, the vast majority of fatalities were due to smoke inhalation. However, limited data gathered from these disasters suggested that carbon monoxide (CO) — the odorless, combustible product of most burning materials that has long been implicated as the primary toxicant in smoke — may not have been the sole factor. As a result, fire safety officials are intensifying their investigations of toxic gases from plastics and other synthetics as possible contributors to the hotel fire deaths.

This increased concern about plastics in the wake of the hotel fires rekindled a long-standing fire-safety controversy: whether building codes should take smoke toxicity into account — for example, by regulating the amount or location of synthetics in furnishings and structural materials. Last week, officials of the National Institute of Building Sciences (NIBS) — which was created by Congress in 1974 to organize and improve the heterogeneous network of U.S. building codes — hosted a one-day meeting in Washington to discuss this issue. Shortly after the meeting, a 13-member task force organized by NIBS reached the conclusion that “building codes should *not* include [smoke toxicity] restrictions at this stage,” NIBS official Steven L. Biegel told SCIENCE NEWS. The task force decided that such restrictions “would be premature,” because the technology to compare the toxicity of various combustion products is not yet sufficiently developed, Biegel explained.

But Merritt Birky — formerly with the National Bureau of Standards, now director of research for the Foundation for Fire Safety — says, “At least two test procedures are available to evaluate, under specified conditions, the relative toxicity of smoke produced from materials.” Birky spent years helping to develop one of those tests: the recently released “NBS method,” which involves exposing rats to flaming and non-flaming (smoldering) materials to determine the LC_{50} (the concentration that kills 50 percent of the test animals) of combustion products of various materials (SN: 6/19/82, p. 409). Another analysis was developed at the University of Pittsburgh (SN: 3/7/81, p. 152). “There still are legitimate technological concerns with these methods,” he admits. “Critics charge that the results are not valid or predictive of actual fires. Obviously, improvements will be made as our understanding of fire dynamics and the human fire toxicity problem increases.” Meanwhile, says Birky, officials should not discourage “the use of state-of-the-art in

combustion toxicology to reduce human fire deaths and injuries.” Birky says the recent task force decision to do just that came as no surprise. “The meeting was stacked with pro-industry concerns,” he explains, “they [NIBS officials] did not invite anyone to talk who was pro- [smoke toxicity] regulations.”

NIBS official Biegel says the task force — which included representatives of The Society of the Plastics Industry, Inc. — recognizes the “severity of its recommendation.” As a result, he says, the recommendation is not “official” until the NIBS Board of Directors approves of it. (That board is expected to pass judgment at the end of this month.)

Despite the as yet “unofficial” status of its decision, the task force already is actively discouraging smoke toxicity com-

ponents in building codes: Last week, Biegel and other members sent a telegram to the California legislature, advising them to “delay efforts” on a pending toxic building materials joint resolution. That resolution would order state officials to incorporate into their building codes a toxicity test method — one that is “based on the work of the Bureau of Standards or the University of Pittsburgh.” A resulting building code, Birky says, could, for example, forbid the use of products judged by one of those tests to be more toxic than wood, unless those products are accompanied by “early detection fire protection methods” such as smoke detectors and sprinkler systems. At the time of this printing, the California resolution still was being debated in a legislative committee. Currently, no state has passed such a resolution, though New York has appropriated funds to study possible methods of incorporating smoke toxicity data into building codes. —L. Garmon

Private roles in uranium enrichment

The Reagan administration is considering the transfer of the U.S. uranium enrichment program to private industry, according to a recent White House letter to the Secretary of Energy. The memorandum also asks for an analysis of whether construction of the advanced gas centrifuge enrichment plant (GCEP) near Portsmouth, Ohio, should be “continued, delayed or terminated.” Sen. Howard M. Metzenbaum (D-Ohio) released a copy of the July 7 memorandum last week.

The federal government is currently the sole supplier of enriched uranium used by domestic nuclear power plants and provides about 35 percent of all the uranium fuel used in other noncommunist countries. This fuel comes from three gaseous diffusion enrichment plants based on dependable but electric power-intensive technology developed in the 1940s and 1950s. In 1977, the government decided to go ahead with a new gas centrifuge technology that was more energy efficient.

In the gaseous diffusion process, uranium hexafluoride gas passes through a series of permeable membranes. The lighter U-235 isotope-containing molecules diffuse slightly more quickly. The centrifuge method spins the gas, separating the uranium isotopes like cream from milk.

Although about \$1.2 billion has already been spent on gas centrifuge plant construction, the White House letter adds to doubts about the project's future. In May, the General Accounting Office released a report that said the new facility is no longer needed. Critics in Congress have also complained about the \$7 billion price tag. The letter asks the Energy Department as part of its analysis to consider incentives for getting the private sector to complete construction of the gas centrifuge plant.

Metzenbaum says, “With interest rates so high and the national market for enriched fuel down, it is highly improbable that any company would continue the GCEP plant without assurances of massive government loan guarantees and a market for the fuel.” He adds, “Turning over a closely held, carefully managed government enrichment program to private industry would inevitably raise the prospect of looser safeguards on this incredibly sensitive material and technology.”

Beyond this, the White House letter calls for study of transferring the entire enrichment enterprise to private industry. In recent years, however, no private companies have expressed an interest in purchasing and operating existing enrichment facilities. The Bechtel Power Corp., for example, was once a member of a venture known as Uranium Enrichment Associates, which was created for the purpose of designing, constructing and operating the first privately owned enrichment facility. A Bechtel spokesman says the company has no interest in owning such facilities now, although it is involved in the construction of the Portsmouth plant. The Energy Department has been studying the “privatization” question for many years, and the issue resurfaces periodically, says an Energy Department official. The review requested by the White House is almost completed.

The Reagan Cabinet's council on natural resources and the environment is scheduled to consider these issues early this month. About a month before, in testimony before Congress, Shelby T. Brewer, assistant secretary for nuclear energy, said, “DOE continues to strongly support the need for GCEP based on the results of the Department's thorough analyses of the alternatives available to the enrichment enterprise.” —I. Peterson