

House vote passes nuclear waste bill

On Dec. 2, 1942, in a converted squash court at the University of Chicago, Enrico Fermi initiated the first self-sustaining nuclear chain reaction in a nuclear reactor. Fifteen years later, the first commercial nuclear power station in the United States opened at Shippingport, Penn. Last week, the U.S. House of Representatives passed by a voice vote a bill to establish a national policy on high-level nuclear waste management.

Reflecting the administration's high priority for enacting nuclear waste legislation and considerable pressure from the nuclear industry and utilities, the nuclear waste bill was the first bill brought before the House in the post-election, lame-duck session of Congress. In introducing the debate, Rep. Morris K. Udall (D-Ariz.) said, "This country has failed, to this moment, to dispose of a single pound of these deadly wastes, which now are in temporary repositories in different parts of the country. . . . The passage of this bill will, for the first time, give us a national policy on high-level nuclear waste."

However, Congress may still fail to complete action on the bill. Like the Senate version of the legislation, passed in April (SN: 5/8/82, p. 308), the bill provides for three types of facilities to handle nu-

clear waste: a major facility for deep geological and permanent storage of nuclear waste, limited away-from-reactor storage for spent fuel from commercial nuclear power plants and monitored retrievable storage as a backup. The House and Senate bills differ significantly on how to implement these programs. Complex, private negotiations now going on among Senate and House leaders must resolve the differences if the law is to be enacted in the limited time left in this session of Congress. Otherwise, the whole legislative process must begin again in the new session of Congress in January.

The negotiations will not be simple. The Senate bill, for example, contains a controversial clause that immediately overturns state laws prohibiting nuclear plant construction until a reliable method of waste disposal is available. The House bill does not. The Senate bill requires a design for a monitored retrievable storage facility within a year of the bill's enactment, while the House version allows the Department of Energy five years to come up with a plan. It also requires an environmental impact statement before construction and Nuclear Regulatory Commission licensing, while the Senate conditions are less stringent.

Environmental groups such as the Sierra Club claim both bills have serious defects and should not be enacted. They hope the next Congress will produce better legislation. —I. Peterson

Aphasia: Therapy helps, seldom cures

After committing their children to intensive therapy, parents of language-handicapped children frequently ask: "Does therapy help? What can we expect when these kids grow up?" Rhea Paul, Donald Cohen and Barbara Caparulo of the Yale Child Study Center are exploring the question. And preliminary results of a limited follow-up study indicate therapy indeed can help, but not nearly as much as many would hope, they reported at the recent American Speech-Language-Hearing Association annual meeting in Toronto.

The Yale team reexamined language skills among 18 of 28 individuals who had been diagnosed over the previous decade as having "childhood aphasia" — a disorder (presumably the result of brain damage) that impairs one's ability to comprehend, create and use language. In initial examinations, the subjects — then aged 2 to 19 years — exhibited language comprehension lagging an average 39 months (with a range of 9 mos. to 9 yrs.) behind what would normally be expected at their age. Roughly half did not speak, the rest spoke in one- or two-word sentences only. Most exhibited behavior symptomatic of hyperactivity — including irritability and inattentiveness. Fourteen of the original 28 were not only aphasic, but also "autistic-like" — with little interest in others or in communicating.

When first seen, the children received tests to distinguish how well they understood language relative to how poorly they used it. Then, over the intervening years, all received intensive special education and therapy focusing on their language problem. In 1981, 18 were retested.

There were some notable successes. Paul reports that four "were doing a lot better"; two of them even participate now in classes appropriate for their age, using language "very near normal for their age."

Unfortunately, the rest remain severely affected. Paul explains: "Of the kids who didn't speak [initially] some continued not to speak and some developed one- or two-word sentences. Of the kids who spoke in one- or two-word sentences, some developed better speech — three- to four-word sentences." In all, 85 percent still registered "language quotients" of 75 or less, Paul says, meaning the child's language tested at only 75 percent of his or her age: "So if a child were 10," Paul says, "his language would be equivalent to that of a 7½ year old or less."

Biggest gains came in sociability — friendliness and depth of interest in others. Here language comprehension was the predictor; those whose comprehension exceeded expression — even among the autistic-like — gained most. However, neither performance IQ nor hyperactive behavior changed notably. —J. Raloff

Pre-Columbian art found in Tennessee cave



This figure of an owl-like bird (right) is part of a series of ancient cave drawings discovered recently in eastern Tennessee.



Photos: Bill Deane © 1982 NGS

The find was announced this week by the National Geographic Society, which is sponsoring a team of anthropologists studying the art. The drawings include images of woodpeckers, turtles and human figures, and were etched in the mud-lined walls of a subterranean tunnel (left) perhaps as long ago as A.D. 1100, according to team leader Charles Faulkner of the University of Tennessee. "A decorated cave like this is unique in North America so far," says Faulkner, who added that he thinks the images "may be part of a religious iconography."

Nothing is known of the cave artists themselves, except that they probably belonged to one of several Indian cultures that flourished in the Tennessee region before the arrival of Europeans. "There is a great deal of resemblance between the cave pictures and motifs that have been found on artifacts from that period," says Faulkner. Radiocarbon dating of charcoal fragments found on the cave floor indicates that the paintings may have been produced over several centuries. The fragments, probably remnants of fires used by Indians to light the pitch-dark tunnel, date from the twelfth through the sixteenth centuries.