

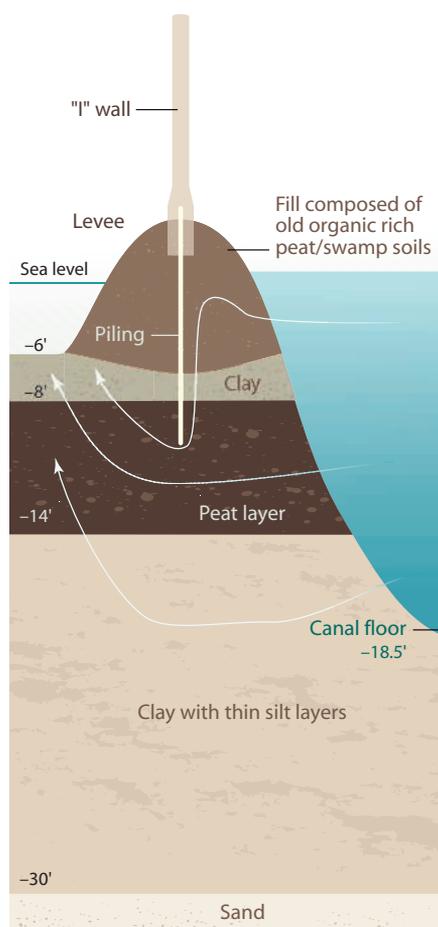
citing observations, concluded that water reached only 3.7 m up the 4.3-m levee walls lining the 17th Street and London Avenue canals. Independent modelers, led by civil engineer Joannes Westerink of the University of Notre Dame in Indiana, give similar initial results. "The water should be able to be filled chock-a-block to the top of the wall," said coastal engineer and team member Tony Dalrymple. "[The levees] didn't fill, [but] they failed anyway."

The 17th Street Canal burst through its banks at about 10:30 Monday morning, possibly after water penetrated, eroded, or lubricated the soil below the walls. "It's kind of like a layer cake, and the whole thing slid," says civil engineer Thomas Zimmie of Rensselaer Polytechnic Institute in Troy, New York, a member of the NSF effort. The levee became a bulldozer as the embankment slid 14 meters laterally, lifting and shoving trees, a shed, and a fence as water rushed in all around.

Evidence found at the London Avenue Canal, which breached at about 9:30 a.m., suggested that sand deep below the concrete levee wall had become saturated and unstable, causing the levee to tip. Soil movement, the corps acknowledged in a prepared statement, "could have been a factor" in the breaches. Those failures led to flooding in areas including Lakeview, Gentilly, and downtown. Other breaches, caused by overtopping, led to more inundation.

A fundamental factor in the strength of a levee—especially in swampy soil—is the depth of metal sheet piling driven deep below the levee as an anchor. Documents suggested that the sheet piling at the London Avenue Canal went about 5 meters down—half the depth found in other areas. But engineers said they lacked definitive data.

Those testifying proposed several low-cost improvements including filling gaps between



**Washout.** An investigative team with the state of Louisiana has proposed three ways in which the 17th Street levee in New Orleans was undermined and breached during Hurricane Katrina.

levee sections, more consistent construction standards, and a national board to inspect levees. Van Heerden also called for strengthening the levees to withstand a Category 5 storm, a more expensive fix. A joint report on the levee system by the corps and other federal agencies is due out in July 2006. —**ELI KINTISCH**

ITER

Fusion Leaders Make a Diplomatic Choice

**CAMBRIDGE, U.K.**—A Japanese diplomat has been chosen to head the International Thermonuclear Experimental Reactor (ITER) project, the world's most expensive scientific collaboration. Meeting in Vienna this week, representatives of the six international partners in the project—China, the European Union (E.U.), Japan, Korea, Russia, and the United States—tapped Kaname Ikeda to lead the \$12 billion fusion project, which aims to build a reactor to recreate the sun's power source.

Ikeda, currently Japan's ambassador to Croatia, has a degree in nuclear engineering and has held numerous positions in the Atomic Energy Bureau of Japan's Science and Technology Agency, the Ministry of International Trade and Industry, and the

National Space Development Agency. "He has wide experience and seems to be an excellent choice," says Chris Llewellyn Smith, head of U.K. fusion research.

Since choosing a site earlier this year (*Science*, 1 July, p. 28), ITER negotiators have been drawing up an international agreement. Although this delicate process may continue well into next year, an E.U. source says that construction could begin at Cadarache in France as soon as a few weeks from now.

However, delegates in Vienna failed to agree on the inclusion of India as a partner in the project. India had asked to join in July, but sources say that some ITER partners do not want India to have a prominent role because of its failure to sign the Nuclear Non-Proliferation Treaty. —**DANIEL CLERY**

Hot on the Toxin Trail

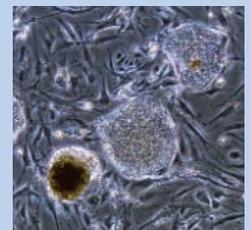
David Schwartz, director of the National Institute of Environmental Health Sciences, has previewed a proposed \$4 million program that will spur the development of new technologies to detect, measure, and track toxins both in people and in the environment. If all goes as planned, the Exposure Biology Initiative will develop sensor badges or bracelets to give researchers more precise data linking toxins to health. The plan also calls for techniques that will monitor protein-toxin interactions that may serve as early markers of problems, he reported at last week's Environmental Epigenomics Conference in Durham, North Carolina. Schwartz is setting up a meeting this winter to home in on specific goals, and he hopes to get the initiative up and running in 2006. —**ELIZABETH PENNISI**

The Endless Battle Over Stem Cells

Advocates for human embryonic stem (hES) cell research are applauding a veto last week by Wisconsin Governor Jim Doyle of a bill that would have banned all forms of human nuclear transfer research. But it's no time to relax, says Sean Tipton of the Coalition for the Advancement of Medical Research, an hES cell research lobby group: The issue is heating up in at least three more states.

In Florida, groups are collecting signatures for competing amendments to the state constitution. One would make available \$200 million in

state grants for research on hES cells; the other would ban state funding for work that "involves the destruction of a living human embryo." Both initiatives must collect 600,000 signatures and be approved by the state Supreme Court to make it onto the November 2006 ballot. In Missouri, where several legislative attempts to limit hES cell research have been defeated, former U.S. Senator John Danforth (R-MO) is heading a committee to collect 150,000 signatures to put a constitutional amendment on next fall's ballot that would specifically allow hES cell and nuclear transfer research. In Ohio, which in 2003 became one of the first states to fund hES cell work with state money, several bills are pending that would limit or even ban such research. "I imagine it will be a busy winter," Tipton says. —**GRETCHEN VOGEL**



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