gen Maass, a press officer in the environment ministry. "It's very difficult to stop it after that. We haven't been very glad that Bavaria wanted this type of reactor, but there is a big need of diplomacy." This past February, Maass adds, FRM2 officials submitted documents that satisfied the government's safety concerns in the case of an airplane crashing into the reactor, a steam explosion, and other emergency scenarios. For his part, Bavaria's science minister, Hans Zehetmair, greeted the permission—needed before the state could issue the actual startup permit, which it did on 16 May—by saying that "the federal environment ministry has finally abandoned its blockade posture and agreed to the startup of this topnotch facility."

The 20-MW FRM2 is designed to produce a continuous flux of 8×10^{14} neutrons/($cm^2 \cdot s$) at its core, and five or so orders of magnitude less at the sample sites. The reactor's dozen beam lines will provide neutrons from 3 meV to 1 MeV. The lowest-energy, or "cold," beam lines will stretch into the *atomei*, or atom egg, the shell of the site's first reactor and now a local icon. Neutrons will also be used to generate an intense beam of positrons for detection of microcracks, Auger spectroscopy of surfaces, and other things, says Winfried Petry, the facility's scientific director. Research planned for the reactor spans physics, chemistry, biology, materials science, engineering, tumor treatment, and contract work for industry.

It's clear that this will be a unique research tool, says Thomas Brueckel, who studies magnetic nanostructures at the Jülich Research Center and chairs Germany's committee on neutron scattering. "There are a lot of enthusiastic scientists who built the instruments. They are waiting to do science." The cash-strapped government "could not both postpone the ESS and keep the FRM2 on hold," adds Kurt Clausen, a Danish neutron physicist currently at Jülich, referring to Germany's cool response to the proposed European Spallation Source (see PHYSICS TODAY, April 2003, page 35). Moreover, the FRM2 is already paid for, mostly by Bavaria, although the federal government is supposed to reimburse about half of the €435 million ($518 million) construction tab. Bavaria and the Technical University of Munich, with contributions from the federal government, will also foot the FRM2's expected €20 million annual running costs.

But critics are not assuaged by plans to convert to a lower enriched uranium. For one thing, the new fuel will be enriched to roughly 50% with uranium-235 (HEU is 93% ^{235}U), which is higher than the rule-of-thumb cutoff of 20% for nuclear bomb usability. "I would even say that such a conversion is counterproductive," says Franz Fujara, a neutron physicist at the University of Darmstadt. "It makes the public believe that the nonproliferation goal might be reached. All those who have in the past converted their reactors down to below 20% are betrayed. And in the future, the motivation to go down to 20% will be lost."

Critics further doubt that, once the reactor is running, the conversion will actually be carried out. FRM2 officials say they will switch if a fuel is developed that doesn't require modification of the reactor core and if the neutron flux doesn't drop by more than a few percent. Groups in France and the US are working on high-density uranium–molybdenum fuels that might work. "We are confident that we are able to change to a lower enriched fuel. But we are concerned that the timing is tight," says Petry. "FRM2 has never been, and never will be, a proliferation risk," he adds.

Says Clausen, "From a technical point of view, the FRM2 will be a good reactor. From a political point of view, it's a disaster."

Toni Feder

US Team Prepares for SARS-Threatened Olympiad

The 24 members of the 2003 US Physics Olympiad team and several of their coaches gathered at the Albert Einstein Memorial in front of the National Academy of Sciences in Washington, DC, in late May. Following a nine-day physics training camp at the University of Maryland, five of the students were chosen to represent the US in the international physics competition scheduled for early August in Taipei, Taiwan. Whether the event will take place remains in doubt, however, because of the recent SARS outbreak in Taiwan. Olympiad organizers already delayed the competition from its original 12 July date to 2 August because of SARS, but that may not be enough to ensure the competitors' safety. The US team did not compete in last year's Olympiad in Indonesia because of concerns about terrorism. **Anthony Tweed**

AIP

Visa Restrictions Bite Into Graduate Enrollments

Since the attacks on the World Trade Center and the Pentagon on September 11th, the fraction of foreigners among incoming physics graduate students in the US has taken a dive, according to a recent report by the American Institute of Physics.

After climbing for decades to a peak of 55%, the fraction of new physics graduate students who were noncitizens shrank by 10% in the past two years. The AIP report estimates that around one-fifth of foreigners accepted to study physics were at least initially prevented from enrolling in 2002 because they were not allowed into the US. Hardest hit in terms of percentage were students from China—who make up the largest single block of foreign physics students—and the Middle East.

Top-ranked physics departments suffered the least, with 10% of accepted noncitizens denied entry to the US, compared with more than 20% at lower-ranked PhD-granting and 40% at master's-granting departments. The lower-ranked departments also reported a decrease in the number of foreign applicants. In a way, says Michael Neuschatz, a coauthor of the