Perhaps fearing heavier tanker traffic as oil drilling moves offshore, Jeslie Kaleak, the mayor of North Slope Borough, and other residents recently clamored for an experimental spill in a meeting of the U.S. Arctic Research Commission, a board created in 1985 to develop and review federal policy. Kaleak told *Science*, "I'm not convinced anyone can do an adequate cleanup job either offshore or onshore [in the] North Slope Borough."

Before the test can go ahead, however, the Environmental Protection Agency (EPA) must give its approval, and this may be slow in coming. The agency is split on the merits of the plan. "Conceptually it's a great idea," says Carl Lautenberger, an oil response specialist at EPA. "But I can't say the EPA's 100% behind this or 100% against it." The EPA is jittery because of the widespread environmental damage caused by the *Valdez*, which spilled about 11 million gallons of crude oil into Alaska's Prince William Sound, resulting in a flurry of litigation, part of which remains tied up in the courts. "We're worried about the unknown liabilities of [an experimental spill]," Lautenberger says. To share the liability, ACS is trying to land a federal agency—most likely the Minerals Management Service—as the experiment's co-sponsor.

It's not just at the federal level that ACS is having trouble convincing regulators to let the test go ahead. In July, Alaska's Regional Response Team (ARRT), composed of 14 state and government agencies, denied an ACS request to conduct a much smaller "demonstration" spill in 1991 in the Chukchi Sea, which lies between Alaska and Siberia. Instead, ARRT gave only "conceptual approval" and called on ACS to submit its plans in "intricate detail."

Despite the uncertainties of a staged oil spill in the Beaufort Sea, regulators and industry officials agree it must be done, for the risks of not running the experiment could be worse. "The answers we might get from this experiment would be priceless," says Pace. ■ **RICHARD STONE**

Can Big Science Claim Credit for MRI?

Among physicists, devotees of "small science" have long been uneasy with big, capital-intensive experiments like the Superconducting Super Collider (SSC). Now some of them are irritated as well as uneasy: They believe the accelerator enthusiasts, in their lobbying effort for the SSC, have been laying claim to achievements that properly belong to small science. They are particularly upset by a public assertion that magnetic resonance imaging (MRI) is a direct spinoff of advances at Fermilab and stands to benefit further from work on the SSC.

The dispute, which flared behind the scenes and in congressional testimony through much of the spring and summer, began when Deputy Energy Secretary Henson Moore testified on 16 April before the Senate Energy Subcommittee on Energy Research and Development. "Already, high-energy physics related to the SSC has had industrial applications" in MRI and other technologies, he said. Not so, replied Harvard University physicist Nicholaas Bloembergen, a Nobel Prize–winning pioneer in the development of MRI whose testimony followed Moore's. Bloembergen, who is also president of the American Physical Society (APS), said of MRI and several other technologies cited by Moore: "I can assure you that these are spinoffs of small-scale science and not of the SSC."

Three days after the hearing, the conflict escalated. In a weekly electronic newsletter for APS members, Robert Park, director of the APS's Washington office, called Moore's spinoff comments "ill advised." That drew a sharp response from Richard Carrigan Jr., who heads Fermilab's Office of Research and Technology Applications. In a letter to Park on 6 May, he labeled Park's comment "vexing." Though he granted that Moore may have overstated MRI's debt to accelerator physics, Carrigan maintained that MRI "rests on a multi-legged pedestal" that includes some of the fundamental physics, image reconstruction techniques, and advances in superconducting wires developed in the course of high-energy physics research.

At that, Bloembergen re-entered the fray. In a fiery letter to Carrigan dated 21 May, he defended Park's "ill-advised" label for the MRI spinoff claim. "MRI would be alive and well today, even if Fermilab had never existed," thundered Bloembergen. "In the interest of the unity of physics...excessive claims by a particular subfield should be avoided. I hope that in the future the technical information that is permitted to filter to the top administrative echelons of the DOE is more carefully worded."

The behind-the-scenes dispute spilled out onto the floor of the House in the debate on the SSC held on 29 May. One skeptic, Dennis Eckart (D–OH), observed, "We have heard proponents tell us that the Superconducting Super Collider will cure everything except the heartbreak of psoriasis. The fact of the matter is that the [SSC] will not make one person well in this country." Contention about the MRI claim sputtered on into the Senate debate on the SSC on 10 July. But the final word on MRI as a big-science spinoff came, according to some of those present, the next day at a House Budget Committee task force meeting to set priorities for science funding. In testimony to the task force, Cornell University physicist Robert Richardson pointed out that MRI technology "is an outgrowth of research in many different disciplines"—the discovery of nuclear magnetic resonance at Harvard and Stanford Universities shortly after World War II; the development of methods for producing an image from nuclear magnetic resonance by Bloembergen and others; work by biochemists, doctors, mathematicians, and computer scientists; and 60 years of superconductivity development. Said Richardson: "it took an amazing number of research projects in many different research fields to produce this technology."

Bloembergen (left) *and Carrigan.*

The dispute has now died down, but it may have deepened the skepticism that future spinoff claims for the SSC, the Space Station, and other big science projects will face in Congress. Rep. Jim Slattery (D–OH), an SSC opponent, calls for "a clearer understanding of what the spinoffs really are." In coming debates he and congressional colleagues trying to evaluate such claims will probably be getting more help from the research community. Says Richardson, "Scientists who know better should speak up." ■ **C. DAVID CHAFFEE**

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