One option would be to operate the magnets at 3.5 K rather than the nominal 4.35 K. At lower temperature, the superconductor can take more current before quenching, and 3.5 K is thought to be no great problem for the SSC's cryogenic system.

One reason for the Dipole Review Panel's recommendation of a 10% operating margin was batch-to-batch variation of the superconducting niobium–titanium wire fabricated for the experimental magnets. The SSC Lab could ill afford to have a goodly fraction of the ring's 8000 magnets quench during operation because of such a spread in wire quality. But in recent months, Schwitters told us, the industrial suppliers of the superconducting wire have achieved a significant improvement in quality control, so that one could probably make do with a lesser margin. "In any case," Schwitters went on, "we could certainly run in the first year at 90% of the nominal SSC energy without any loss to the physics. The Tevatron, after all, is considered a great success, even though it runs at only 90% of its nominal 1000-GeV beam energy."

In recent months the magnet program has been concentrating on the achievement of adequate dipole-field quality. This problem is of course closely linked to the changes that have now been made in the overall SSC design. Adequate field uniformity should be easier to achieve with wider magnets and narrower beams.

—BERTRAM SCHWARZSCHILD

HUNTER DEPARTS DOE AFTER RILING KEY LAWMAKERS AND TOP TEXANS

Rumors had circulated almost every month since last April that Robert O. Hunter Jr would soon be out on his ear as the Department of Energy's director of energy research. After all, he had angered influential members of Congress in his efforts to realign DOE's fusion program. He had proposed to reduce the funds available for magnetic fusion research and to fatten the budget for inertial confinement fusion at the expense of magnetic fusion.

When Hunter's strategy was made known, many plasma physicists exploded. Hunter had argued that ICF research with lasers, as practiced at Lawrence Livermore and Los Alamos, needed far greater support from DOE and Congress if it was ever going to show any commercial feasibility. It didn't escape the notice of fusion researchers and members of Congress that Hunter's former company, Western Research in San Diego, did ICF work under contracts with the Defense Department. Nor did they ignore Hunter's ambitious plans to make both fusion technologies compete for funds in DOE's constrained R&D budget.

Among those scrutinizing the plans was Representative Robert A. Roe, a New Jersey Democrat who heads the House Science, Space and Technology Committee. At hearings and in private, Roe fumed at Hunter's proposal, which would have the effect of curtailing work at the Princeton Plasma Physics Laboratory in New Jersey. Roe took his complaint directly to Hunter's boss, Energy Secretary James D. Watkins. Other antagonists included Senators Bill Bradley and Frank Lautenberg, both New Jersey Democrats. During one call Bradley demanded that DOE officials "stop messing with Princeton."

Hunter: Gone but not forgotten.

In the meantime, Capitol Hill was rife with tales about the sale of Hunter's company, which took place before he was confirmed by the Senate last year for the DOE job. The stories led Roe to unleash the staff watchdogs on his House Subcommittee on Investigations and Oversight to determine their accuracy. Staff lawyers and outside experts scoured the financial accounts of Hunter's old firm, interviewed former employees about Pentagon contracts dealing with large excimer lasers such as those used by Los Alamos for ICF research and reviewed patents held by Hunter that might suggest a conflict of interest. For all their efforts, though, Roe's investigators have come up with few leads and even less evidence, say subcommittee sources.

Tripped on the SSC

Neither the problems over fusion nor the congressional investigation was the main reason for Hunter's sudden departure, however. He was tripped up by something altogether different—the Superconducting Super Collider. It seems that Texans in Congress and back home had made no secret to DOE and the White House that they wanted Hunter to cease his resistance to hiring certain scientists for the laboratory and to desist interfering with decisions by SSC managers. One particular irritant was Hunter's opposition to approving a "footprint" (see page 45) produced by the SSC team for locating the collider ring around the town of Waxahachie. Until DOE approves the precise location of the 54-mile racetrack-shaped ring and other components and buildings, the state is unable to purchase the 16 000 acres on which to construct the giant project.

Informed of Hunter's disagreements with SSC scientists, some of Texas's most prominent figures began bashing Hunter in front of President Bush, Secretary Watkins and others. As the Administration grew more exasperated and embarrassed, it became clear that Hunter's days at DOE were numbered.

Finally, in early October, John C. Tuck, DOE's under secretary, who maintains strong connections to influential Republicans in Congress and to important White House officials, reportedly ordered Hunter to leave the agency. On 16 October, Hunter sent a hand-penned letter of resignation to Watkins. "As we have discussed," Hunter wrote in his characteristically cramped hand, "it is now time for you to pick a person for the Bush Administration. Several weeks ago I took steps to ensure that the work of the office would be smoothly conducted, and my presence is not now required. Therefore, I would like to resign, effective immediately."

Ironically, though Hunter is gone from DOE, his ideas have not been forgotten. In the next weeks Watkins intends to name a blue-ribbon panel to examine the country's entire program of controlled fusion. He also is maintaining a vigil on the SSC.

With Hunter's departure, James F. Decker is once again acting director of DOE's research office. He filled in for a year and a half after the departure of Hunter's predecessor, Alvin W. Trivelpiece, in 1987.

—IRWIN GOODWIN ■