

will increase," the official says.

DERA veterans are upbeat about the transition. They believe that the noncommercial arm will continue to provide top-notch scientific advice to the U.K. government. "It's going to be very much business as normal at DSTL," predicts Martin Ear-

wicker, DSTL's new chief. They also expect the commercial wing to thrive. "A lot of people within QinetiQ might be nervous about the change, but that's natural," says physicist Cliff Jones. Jones is part of the five-member team that moved from DERA to ZBD Displays, which hopes its phone

displays will become part of every teenager's electronic fashion wardrobe. From his vantage point, going from a government job to one in the commercial sector "is quite a pleasant experience," he says.

—ANDREW WATSON

Andrew Watson writes from Norwich, U.K.

FUSION SCIENCE

Canada Bids to Host International Reactor

The three partners in the proposed International Thermonuclear Experimental Reactor are weighing a surprise offer from upstart Canada

TOKYO AND OTTAWA—Canada has made a surprise bid to host the International Thermonuclear Experimental Reactor (ITER), a move that signals the start of serious political jockeying among the three partners over a site for the \$5 billion fusion project. If nothing else, last week's offer demonstrates that plans to harness the nuclear fusion process that fuels the sun are moving forward despite a conspicuous lack of interest on the part of the United States.

ITER began in 1986 as a joint project of the United States, European Union (E.U.), Japan, and the Soviet Union. Over the next decade, worries about the cost and technical feasibility of the project gradually eroded political support in the United States. Although the design phase was extended and the project scaled back, the United States formally dropped out in 1998.

the main French nuclear power research facility, while Japan has three sites under consideration (see map). Russia's continuing economic woes since the collapse of the Soviet Union greatly diminish its chances.

But Canada's sudden bid has opened up the race. Its offer, presented to ITER partners at their latest meeting on 7 June in Moscow, lifted their spirits. "From the beginning we wanted ITER to be a very broadly international project, so we're very happy to see Canada express such interest," says Hidetoshi Nakamura, director of the Office of Fusion Energy in Japan's Ministry of Education, Science, Technology, Sports, and Culture.

The proposal comes from a coalition of Ontario-based businesses, in particular Ontario Hydro, that set up a nonprofit entity, ITER Canada, to lobby for the site. The national government has declined to put up any money, but it has endorsed the bid. "For Canada, it'll be something of a technological gold mine sitting in the middle of the country,"

value of \$450 million, in return for ITER buying all its electricity from the utility. The proposal also includes a \$1 billion bridge loan to cover construction and infrastructure costs, to be repaid by Japan and Europe.

Canada also hopes that a site in a major city, Toronto, that is roughly halfway between Europe and Japan, may help entice the U.S. government to reconsider its role in the project. "The assumption is that the U.S. is going to view ITER more sympathetically if it's in Canada than if it were in northern Japan or central Europe," says Barnard.

That's unlikely, however, according to Department of Energy officials, who say that the die has been cast on the United States' role. But Stephen Dean, head of the private Fusion Power Associates in Gaithersburg, Maryland, believes Canada's move could help prove to a skeptical Congress that "the partners are serious about building ITER."

ITER officials have their own concerns, starting with the assumption that the host country or region would make a strong long-term financial and political commitment. "In Canada's bid, the country itself is not proposing to take a central role in the project," says Nakamura. But officials say they are taking the Canadian plan seriously. The proposals are due by the end of the year, says Jean-Pierre Rager, head of fusion activities at the European Commission in Brussels, "and then we will begin to talk."

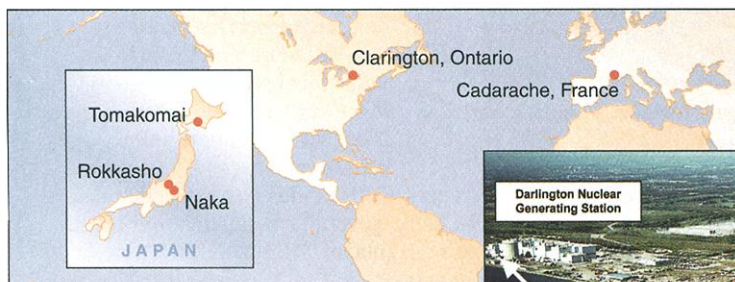
Japan is hoping that its offer to pay at least 50% of the construction costs will make it an attractive suitor. The three sites vying for the prize are Tomakomai, on the northern island of Hokkaido; Rokkasho, in Aomori Prefecture at the north-

ern tip of Honshu; and Naka, in Ibaragi Prefecture about 100 kilometers north of Tokyo. France offered the Cadarache site to the E.U. last year, and Rager says they are now working on the details of the E.U. proposal.

A decision on the site and conditions for participation is expected in the spring of 2003. If all goes smoothly, construction could begin in 2005 and be completed by 2013.

—DENNIS NORMILE AND WAYNE KONDRÓ

Wayne Kondro writes from Ottawa.



Site specific. Canada wants ITER on the shores of Lake Ontario (*right*), next to a tritium-making facility; Japan and Europe (*above*) have other ideas.



But the rest of the world is moving ahead. As the design of the scaled-down reactor nears completion, the next big hurdle will be selecting a site and dividing up responsibilities and contributions to build it. The formal proposals will include in-kind contributions, with the host country or region picking up at least 25% of the cost in return for an expected economic and scientific bonanza. The E.U. is expected to offer a site in southern France next to Cadarache,

says Peter Barnard, head of ITER Canada.

Its novel mechanism for financing ITER calculates that the site, formerly earmarked for a nuclear power reactor, is worth \$650 million. The site is on the north shore of Lake Ontario, an hour east of Toronto and adjacent to the Darlington nuclear power station. The Ontario provincial government has pledged \$200 million over 30 years for operations. And the tritium needs will be supplied by Ontario Hydro at a projected