After Heat Wave, Europe Gives Nuclear Power a Second Look

By HEATHER TIMMONS and ERIC PFANNER

LONDON, Sept. 17 - As Europe cools off from a summer heat wave that pushed its power plants to the limit, the nuclear industry is trying to seize a rare opportunity to rehabilitate its reputation and attract new investment.

Nuclear operators have been near-pariahs throughout much of the developed world since the Chernobyl disaster in 1986, especially in Europe. No new reactors have been built in Western Europe since then, and several countries have declared themselves forever nuclear-free, including Italy, which shut the plants it had already built.

The industry has survived only because countries like Germany and France are already too heavily dependent on nuclear energy to scrap it. Even so, operators have tended to keep their profile as low as possible.

Now, Europe has bumped up against the limits of its existing power supply, and the Continent faces tough choices about energy.

The torrid summer of 2003 and the deaths and illnesses it caused, particularly in countries like France, where air-conditioning is relatively uncommon, have prompted industry analysts to forecast sharp growth in electricity use.

But there are a host of constraints on the expansion of the power supply.

The 15 members of the European Union have committed themselves to sharp reductions in their emissions of "greenhouse" gases linked to global warming, notably carbon dioxide, and fossil-fuel-burning power plants are a significant source of those emissions.

Most of Western Europe's potential for new large-scale hydropower development has already been tapped, and countries like Germany and Denmark invested in wind turbines only to discover during the unusually hot, still summer that the wind may not always blow when it is most needed.

That, the nuclear operators say, leaves only one good option: new reactors. Because nuclear plants emit almost no greenhouse gases or other pollutants, industry advocates say, they may be the only way Europe can reliably add to its power generation capacity within the environmental constraints of the Kyoto treaty on global warming.

Critics have long derided that argument, pointing out that it ignores the problems of radioactive waste, the greenhouse gas emissions and other pollution associated with mining and refining uranium, and the heightened safety and security concerns after the Sept. 11 terror attacks.
Also, the European heat wave exposed a previously overlooked vulnerability: the rivers that supply the water used to cool many of the Continent's nuclear plants warmed up so much that plant managers had to choose between cutting back power output or releasing damagingly hot water back into the rivers.

In an effort to soften widespread public hostility to nuclear power, industry leaders who gathered here this month announced the creation of a network of leading research centers and nuclear experts in 30 countries to be called the World Nuclear University.

The intention is to promote scholarship and encourage students to pursue careers in nuclear science, and help to "build the political will for a clean energy transformation," said John Ritch, director general of the World Nuclear Association, a London-based industry group that is one of four organizations sponsoring the initiative.

The sponsors have enlisted Hans Blix, the former United Nations weapons inspector and a former head of the International Atomic Energy Agency, to be the first leader of the network. Mr. Blix emphasized the danger of global warming in a speech at the London conference.

"While I would be the last to underestimate the risk of proliferation of weapons of mass destruction, I think the environmental risks we face are even greater," he said.

Mr. Blix's caution is understandable, given the passions that nuclear energy arouses in Europe, for and against, often in close proximity.

France depends on nuclear reactors, 59 of them, for more than three-quarters of its electricity, and while it has not added a reactor since the year of Chernobyl, it has resisted calls to curtail their use.

Austria and Denmark have forsworn any use of nuclear energy, but Finland's Parliament approved plans last year to build a fifth reactor in the country. Construction has not begun, but the industry views the decision as evidence of a sea change in attitudes in a prosperous, environmentally conscious country.

Eastern Europe, meanwhile, has plunged ahead, with plants under construction in Slovakia, Romania, Ukraine and Russia and proposals on the table in Bulgaria and Lithuania.

The Romanian government wants to quadruple the share of the country's total power output provided by nuclear power, and sell the excess to its neighbors, according to Mircea Metes, business development manager at the state-owned utility Nuclearelectrica, who spoke at the London conference.

Eastern enthusiasm for nuclear power has caused some friction with the West. For example, Austrians have tried unsuccessfully to force the Czech Republic to shut down its Temelin nuclear plant, 40 miles from the Austrian border, on safety grounds, and the plant may become an issue in the talks over Czech membership in the European Union.
Nuclear industry officials say the new plants being built in Eastern Europe are vastly improved over Chernobyl both in terms of safety and efficiency. But no matter how well designed a nuclear power plant may be, environmentalists say, it still produces waste - 25 to 30 tons of high-level waste a year for a large plant, and a good deal more low-level waste.

"They give us the choice between plague or cholera - either global warming or nuclear waste," said Michaele Hustedt, a spokeswoman for the Green Party in Germany.

The Greens demanded and won a promise that nuclear plants would be phased out in Germany when they joined the Social Democrats to form a ruling majority in 1998. So far, though, there is talk of shutting just one plant, near Hamburg, which is owned by the Swedish utility Vattenfall. Sweden and Belgium have adopted similar policies, but only Sweden has actually closed a reactor. Meanwhile, voters in Switzerland, another country with a strong environmental movement, rejected a phase-out in a referendum this spring.

While nuclear energy will continue to supply much of Western Europe's electricity, analysts say, a rapid expansion is about as unlikely as a rapid phase-out. Part of the reason is cost.

"There are other solutions to global warming that should be pursued first at a much, much lower cost," said Rob Lake of Henderson Global Investors, which manages $152 billion in assets. "First, there's energy conservation, then renewables, then cleaner conventional fuels, and only then would you start thinking about nuclear energy."

Like the United States, Europe has privatized much of its electric power infrastructure, and that has opened operators to pressure from shareholders, including investors who may disapprove of nuclear energy, Mr. Lake said.

A study by the Massachusetts Institute of Technology this summer found that over the lifetime of a power plant, nuclear energy costs 6.7 cents a kilowatt-hour, compared with 4.2 cents for coal or natural gas (assuming moderate gas prices). A carbon emissions tax, as contemplated by the Kyoto treaty, would make nuclear far better by comparison, the study said. "The ultimate costs will depend on both societal choices and technology developments," the study found.

Analysts say there are lessons to be learned from Britain, where the first nuclear plant to supply substantial amounts of electricity to a national grid opened in 1956. Since then the country's nuclear industry has run into deep trouble.

In June, British Energy, owner of eight of Britain's plants and part of the Three Mile Island plant in Pennsylvania, said it would take a $7 billion write-down for the 2002 fiscal year, mainly to cover costs from decommissioning its older nuclear plants.

"I don't think we're going to see anyone in Britain making a commitment to nuclear in the foreseeable future, because of what happened at British Energy," said Fraser McLaren, an analyst at ING in Edinburgh. The country's nuclear waste reprocessing industry is also on the brink of being shut because of safety concerns.
In the United States, the nuclear industry tried to ally itself with environmentalists in the 1990's, with little success. Claims in a 1998 ad campaign that nuclear power made electricity without polluting or damaging the environment drew criticism and were found to be unsubstantiated by the Federal Trade Commission.

No nuclear plants have been started in America since the near-meltdown at Three Mile Island in 1979, but there, too, several power companies have said they are considering proposals to build new reactors.