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Hope, skepticism for cold fusion

By **D.C. Denison** | GLOBE STAFF NOVEMBER 28, 2011



JOANNE RATHE/GLOBE STAFF

Andrea Rossi's energy catalyzer is unproven and has its skeptics.

The Italian scientist who says he has developed the world's first cold fusion reactor - a claim that has been hotly contested in scientific circles - visited the State House last week to explore the prospects for developing and manufacturing the device in Massachusetts.

Andrea Rossi made the trip at the invitation of the Senate's minority leader,

Bruce Tarr, a Republican from Gloucester, and met on Tuesday with representatives from the Massachusetts Institute of Technology, Northeastern University, and the University of Massachusetts.

Rossi's energy catalyzer, or "E-Cat" reactor, is intended to produce large amounts of energy from a reaction between nickel and hydrogen. Rossi said the reaction produces heat to heat water, which produces steam that can be used to generate electricity.

If the technology works, it could enable a new generation of power plants to provide safe, cheap, and virtually unlimited nuclear power, without fossil fuels or radiation concerns.

At this point, however, the E-Cat is widely considered to be unproven. Tests have been scarce and secretive, perhaps because Rossi has said that his technology is still unpatented.

The E-Cat is also haunted by previous "cold fusion" claims that have gone unproven. In 1989, researchers Stanley Pons and Martin Fleischmann famously claimed to have produced a small amount of energy by nuclear fusion on a lab bench at room temperature. Although their work generated a Time magazine cover story, other scientists failed to replicate cold fusion, and the field was soon discredited.

Rossi, an engineer, has been trying to resurrect the idea. Last month, he conducted a test of a small cold fusion power plant in Bologna,



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Andrea Rossi was invited to Massachusetts by the Senate's minority leader, Bruce Tarr (left), a Republican from Gloucester. "If it works, I want this technology to be developed and manufactured in Massachusetts," Tarr said of cold fusion.

Italy, for an unnamed customer, who he said was impressed enough to purchase the unit.

Rossi said he has received orders from 12 more customers.

Access to the demonstration by outside scientists and observers was severely restricted, which did little to allay the reservations of skeptics who say that room temperature nuclear fusion is a scientific impossibility.

Tarr, who is active in alternative energy legislation, said he invited Rossi to put the state in line for hosting any prospective development of cold fusion.

“My thought process was pretty simple: If it works, I want this technology to be developed and manufactured in Massachusetts,” Tarr said.

Robert Tamarin, dean of sciences at UMass Lowell, attended the meeting with Rossi.

“Knowing the reputation of cold fusion, I went in with a very healthy level of skepticism,” he said.

“It was a roomful of skeptical people. Senator Tarr was also skeptical, but if it does work, he wants Massachusetts to benefit. If it’s successful, no wants to have to say later that we walked away from it.”

Tamarin said the meeting was mostly used to discuss the possibility of setting up manufacturing, rather than the validity of the science.

“Rossi said he was not ready for a full academic investigation of his technology because he doesn’t yet have full patent protection,” Tamarin said. “That’s consistent with it not working, but it’s also consistent with it working very well.”

After the meeting, Rossi, who paid his own way to Massachusetts, was enthusiastic about a possible partnership with the state.

“Massachusetts has the density of technology and the customers we need,” he said. “Also, it does not have the bureaucracy that we have in Italy.”

Rossi said he would also like to develop smaller household cold fusion power generators in Massachusetts.

“I’m already planning to come back soon,” he said. “We are all hoping to get something started in a matter of weeks, not months.”

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