Nuclear Renaissance

New legislation and a renewed interest in alternative energy sources has put nuclear power back into the limelight, inspiring some people to declare that the U.S. is in the middle of a Nuclear Renaissance.

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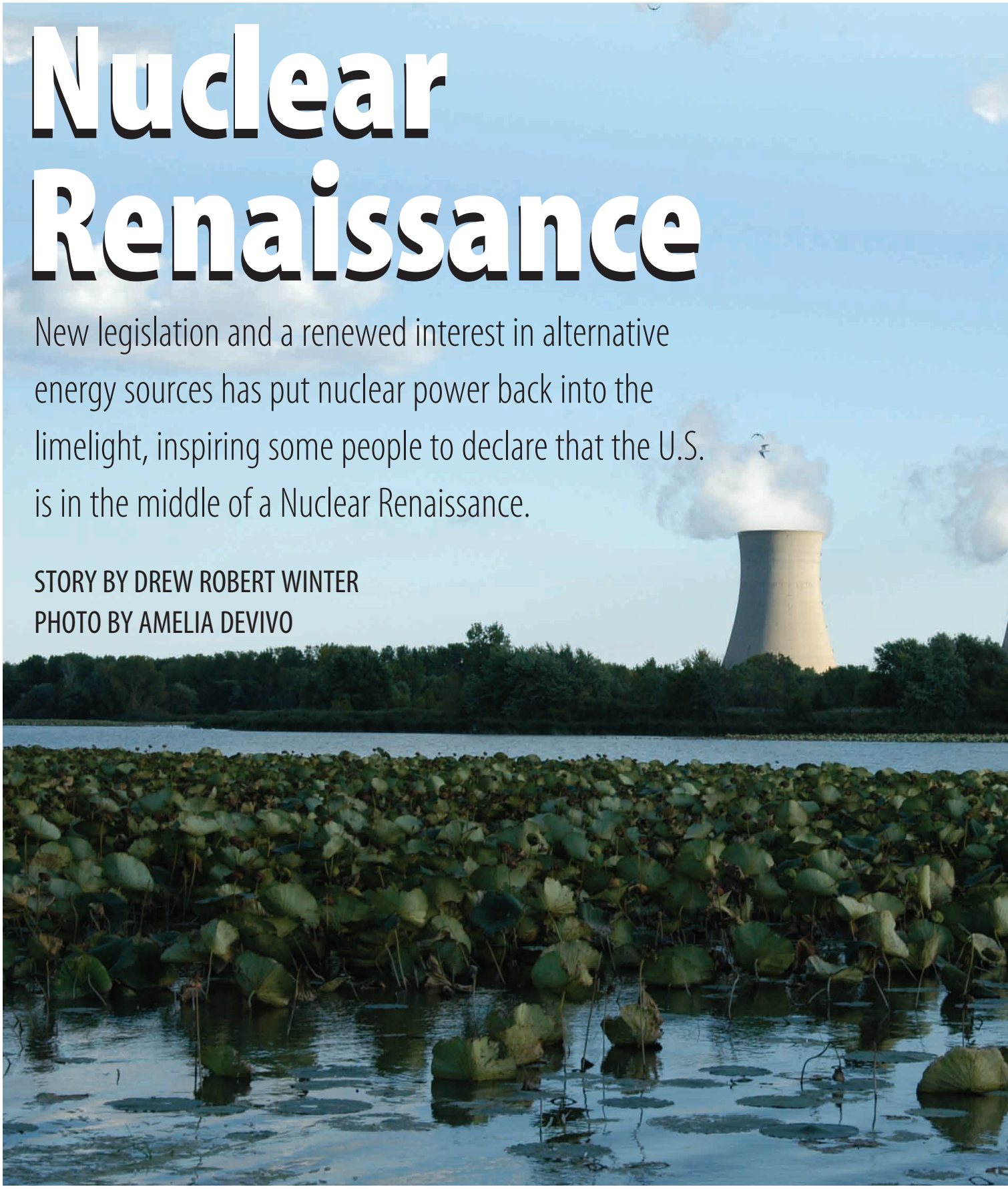
PHOTO BY AMELIA DEVIVO



The Fermi nuclear power plant in Newport, Mich.

Two gray behemoths stand motionless against the blue Michigan skyline. They overlook miles of brown trees, yellow corn and green soybeans that constantly roll and dash rhythmically in the wind. The twin cooling towers at the Fermi nuclear facility near Detroit may soon have more company than crops. Fermi may submit one of the Nuclear Regulatory Commission's 32 expected applications for new nuclear reactors between now and 2008.

Industry insiders see the massive influx as a comeback so profound they've declared it a "nuclear renaissance."

Twenty-one of the 32 applications are to build entirely new plants.

"This is a truly historic event," said Jacopo Boungiorno, professor of nuclear physics and engineering at the Massachusetts Institute of Technology. "Since the Three-Mile Island accident back in 1978...that pretty much brought the industry to a halt."

The reason for the sudden interest in nuclear power is due largely to a streamlined licensing process and the Energy Policy Act of 2005.

The act, sponsored by Sen. Joseph Lieberman, D-Conn, and Sen. John McCain, R-Ariz., grants numerous subsidies to utilities building nuclear power plants. These plants are listed as an alternative energy source along with wind, solar and other so-called green options. Subsidies include up to $125 million in annual tax credit, an 80 percent loan on construction costs and other benefits for reactors using new technology.

When the act was passed, industry notified the Nuclear Regulatory Commision, which oversees all civilain activity, of 17 new power plant applications, said Scott Burnell, the agency's public affairs officer. The streamlined licensing reduces both uncertainty to prospective investors and the time prior to construction, said Burnell. In contrast, permits for the first generation of nuclear power plants required drawn-out construction licenses that, upon completion, required yet more licenses to operate the plants, risking huge capital losses if the completed structures didn't meet Nuclear Regulatory Commision's operating standards.

Critics like Sierra Club spokesperson Josh Dorner say the new licensing process eliminates time for public outcry and debate about having a nuclear power plant in their backyard.

The 1957 Price Anderson Act was also amended, capping the liability for utilities in the event of a nuclear accident at $10 billion. It also limits the amount of money due from each reactor, which contributes to a national pool for accident relief, at $95 million.

Though $10 billion may seem like a lot, anti-nuke activists maintain that the amount would barely dent the cost of damages from a serious accident. "The damages would be, more than likely, in the hundreds of billions," said David Kraft, the director of the Nuclear Energy Information Service, an Illinois watchdog group. If damages exceed $10 billion, another part of the law allows Congress to authorize the federal government to pick up the bill. In short, "the victims would be paying their own compensation," Kraft said.

A GREEN ENERGY?

One reason for the nuclear comeback is because nuclear energy is considered a clean energy source by advocates. Unlike coal-power, nuclear power produces no carbon dioxide, which accounts for two-thirds of greenhouse gas emissions, Kraft said. Though environmental groups like the Sierra Club and the Natural Resource Defense Council reject nuclear power much as they did in the 1970s, some environmentalists, like Greenpeace co-founder Patrick Moore, have turned to nuclear power as a way to counter global warming.

"Nuclear energy is the only non-greenhouse gas-emitting power source that can effectively replace fossil fuels and satisfy global demand," Moore told a Congressional subcommittee on nuclear energy in April 2005.

Nuclear power also creates hydrogen, a naturally occurring aspect of nuclear reactors, which could be used as an alternative fuel, said Boungiorno.

Kraft contends that while nuclear power is carbon dioxide-free, the cost and time required to build enough nuclear power plants prohibits the benefits from occurring soon enough to curb global warming. It would require more than 400 new nuclear plants at a construction cost of $3 billion to $6 billion each to replace coal plants. "Such a project would take decades," Kraft said.

BUT IS IT SAFE?

Though the accident at Three-Mile Island occurred more than 25 years ago, many people cite it as the reason why nuclear technology cannot be trusted. Industry experts say Three-Mile Island only exposed locals to as much radiation as an X-ray, and tout new technology to further reduce accidents. Newer reactors rely more on passive safety—natural forces such as gravity to transport cooling water—which is safer than pumps that can malfunction.

Security has also improved since Sept. 11, 2007, said Bill Shalk, a spokesperson for American Electric Power. Shalk works at the Cook nuclear plant near Michigan's west coast. He says the NRC requires plants to be able to defend against a well-trained paramilitary force, armed with automatic weapons and aided by an insider. He also said that while existing plants are safe, the danger of using a commercial airliner as a weapon is being considered in new designs.

"There are studies that say that the impact of a large commercial aircraft is not going to result in a release of radiation from the plant," he added, calling nuclear energy a "safe and reliable" electricity source.

Despite the technological and security improvements, there are still safety concerns. Nuclear reactors dump used cooling water laced with tritium, a radioactive form of hydrogen, back into reservoirs. Tritium is classified by the EPA as a human carcinogen and cannot be filtered out.

Michael Keegan, chairman of the Coalition for a Nuclear-Free Great Lakes, said that his group is concerned about increasing the number of reactors along the Great Lakes that are expelling tritium water. Every exposure to radiation, even in small doses, increases the risk of cancer, according to a June 2006 National Academy of Science report.

The process is regulated by the Environmental Protection Agency, but critics like Keegan maintain, "there is no safe level of radiation."

"The more reactors built, the more you're dumping radioactive materials into the environment," Kraft said.

Currently, sixty-five sites house 104 operational reactors, producing approximately 20 percent of the nation's energy. Critics of nuclear power still champion conservation and other energy sources such as solar, wind, geothermal, and biomass. But with dozens of expected applications, the gray, vase-shaped cylinders may become a more common sight against the blue skyline.

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