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Close Call: Monitoring Nuclear Reactors

Ohio's Davis-Besse Nuclear Power Station was shut down last year because of the most extensive corrosion ever discovered at a nuclear power plant. The facility was closed after workers found a six-by-five inch cavity in its reactor head that eventually could have caused a meltdown — the closest the U.S. has come to a nuclear accident since Three Mile Island 1979. This week FirstEnergy, which operates the plant, postponed a scheduled refueling of the reactor, which once supplied electricity to 150,000 people. "Close Call" investigates the Davis-Besse incident to uncover whether industry profits were put before public safety and examines concerns about the Nuclear Regulatory Commission's ability to effectively monitor all of the nation's nuclear reactors.

Currently, there are 103 (104 if Davis-Besse comes back on-line) commercial nuclear reactors producing electricity in the United States, located at 64 sites in 31 states. Today, nuclear power plants — the second largest source of electricity in the U.S. — supply about 20% of the nation's electricity each year. Nuclear energy is the world's largest source of emission-free energy, producing no controlled air pollutants or greenhouse gases. The use of nuclear energy in place of other energy sources helps to keep the air clean, preserve the Earth's climate, avoid ground-level ozone formation and prevent acid rain.

Nuclear technology uses the energy released by splitting the atoms of certain elements. First developed in the 1940s, research initially focused on producing bombs by splitting the atoms of either uranium or plutonium. In the 1950s, attention turned to the peaceful uses of nuclear fission, notably for power generation. Today, the world produces as much electricity from nuclear energy as it did from all sources combined in 1960.

[The United States Nuclear Regulatory Commission](#) (NRC) regulates U.S. commercial nuclear power plants and the civilian use of nuclear materials. The NRC considers public involvement a crucial part of their mission, and you can report a safety or security concern involving a nuclear facility or radioactive materials on the NRC Web site. In addition, there are many other ways to learn about nuclear reactors in the U.S. and around the world:

Find out if there are any nuclear reactors in your area by consulting the Department of Energy's list of "[Nuclear Power Plants Operating in the United States](#)," organized by state.

View a map of all the nuclear reactors worldwide: [World Association of Nuclear Operators](#).

View the damage to the reactor at the [Davis-Besse nuclear power station](#).

Ralph Nader writes about [Nuclear Power Plant Risks](#) after September 11th.

According to [The Nuclear Control Institute](#), "more atom-bomb material enters civilian commerce than exists in all of the world's nuclear weapons." That material is plutonium, a essential ingredient in nuclear weapons created in civilian nuclear reactors that generate electricity for cities, such as the one at Davis-Besse. The NCI, an independent research and advocacy center specializing in problems of nuclear proliferation, monitors nuclear activities worldwide and pursues strategies to halt the spread and reverse the growth of nuclear arms.

[Global Resource Action Center for the Environment](#) is one of many environmental groups that favors finding an alternative to nuclear and oil power. Information about the progress in this area is available on their Web site.

Other sources: [Nuclear Energy Institute](#) and [World Nuclear Association](#).

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