

# Rachel's Environment & Health News

## #543 - A Gloomy Year For Nuclear Power

April 23, 1997

The nuclear power industry is having another bad year.

\*\* A study published in January in ENVIRONMENTAL HEALTH PERSPECTIVES (a federal government journal) concludes that people who lived near the Three Mile Island (TMI) nuclear plant in Pennsylvania in 1979 are more likely to get lung cancer, leukemia and all cancers combined, compared to people living further from the plant.[1] The TMI nuclear reactor released radioactivity into the surrounding air in March, 1979 during a loss-of-coolant accident that crippled the plant. A 1990 study had concluded that certain cancers were occurring among nearby residents at unusually high rates, but that radiation released during the accident was probably not the cause.[2] The latest study, by Stephen Wing and others, says those rising cancer rates WERE caused by radiation.[3]

The nuclear power corporations are working overtime to discredit Wing and the other authors of the new study. The industry's attacks on Wing are deflecting attention away from the real issue: both the 1990 study and the 1997 study agree that cancers are occurring at unusually high rates among people who lived near the TMI nuclear reactor in 1979. Whether radiation released during the accident caused these cancers, or whether the TMI plant caused them in some other way is an interesting sidelight, but is not the central issue.

After the authors of the 1990 study concluded that radiation released during the 1979 accident probably wasn't causing the cancer increases near TMI, they did a second study. They found that the cancers might have been caused by accident-related stress.[4]

Stress is definitely known to damage the immune system, and a damaged immune system may fail to prevent cancers.[5] If your immune system is damaged, even routine low-level releases of radioactive gases from a nearby nuclear power plant might be sufficient to cause cancers.

There was plenty of reason to feel stress back in 1979 if you lived within 100 miles of TMI. Shortly after the initial accident, government and industry officials got caught telling the public a series of bald-faced lies, compounding the public's initial distress. Meanwhile, hydrogen gas was building up inside the TMI containment vessel and reputable scientists were taking bets on whether it would explode and breach the containment, releasing more radioactivity. Meanwhile, a hot, heavy mass of melted fuel was beginning to burn its way through the bottom of the reactor, threatening to contact the soil below and perhaps set off a steam explosion. Either of these scenarios could have released large quantities of radiation into the surrounding countryside.[6]

Sensibly, the governor of Pennsylvania evacuated women and children within a 5-mile radius of the plant. Many local people never fully recovered from the whole experience and never regained trust in officialdom as the damaged reactor's twin was put into service. Some local people were studied years later and, sure enough, they registered high stress levels at least five years after the accident.[7]

So take your choice. Cancers are increased among people who were living near TMI when the accident occurred. That much is known and is not in dispute. Maybe radiation released during the accident caused the cancers. Or maybe the very real threats of a hydrogen explosion and a full-scale meltdown (the "China syndrome") worried people sick. Either way, TMI will not soon be forgotten.

\*\* Two fires occurred on the same day at a nuclear fuel reprocessing plant in Tokai, Japan March 11, 1997, 70 miles from Tokyo. According to the NEW YORK TIMES the Tokai plant contains 4.4 tons of plutonium. One fire started at 10 a.m. and was quickly snuffed out, authorities said. However, 10 hours later a second fire erupted, accompanied by an explosion that blew out all the windows and one of the doors in the concrete building, exposing at least 30 workers to radioactivity and releasing radiation into the

atmosphere.[8,9] Radioactive materials from the plant, including plutonium, were detected 23 miles away. A citizens watchdog group in Tokyo reported that radioactive iodine-129 was released as well.[10] Radioactive iodine tends to accumulate in the thyroid gland of humans, where it can cause cancer.

Japan produces 34% of its electricity using 51 nuclear power plants.

At the time of the Tokai fires and explosion, Japan's state-run nuclear industry was under a cloud; a serious accident in December, 1995, had closed the Monju experimental fast-breeder reactor. The Monju plant, 220 miles from Tokyo, was supposed to demonstrate that a nuclear plant could safely and affordably "breed" plutonium fuel for other nuclear power plants. However, a leak in the liquid sodium coolant system in December, 1995, closed the demonstration plant, bringing disgrace upon the government corporation that ran it --the same corporation that operates the Tokai plant.

According to the NEW YORK TIMES, "The Government-run nuclear energy company was harshly criticized for its slow response to the Monju accident and for its attempt to cover it up. The company's top executive was replaced, safety manuals were revised and other reforms were supposedly introduced. But many of the same types of mistakes were made in the Tokai accident." [8] The TIMES said of the Tokai fires and explosion, "A seeming comedy of errors in responding to the fire and informing the public was more disturbing to some than the amount of radiation released." [8]

\*\* On February 2, 1997, two accidents occurred within 24 hours at the Sellafield nuclear complex in Cumbria, England, just across the Irish sea from Ireland. Irish authorities summoned the British ambassador to send a formal message "not to proceed" with the creation of a nuclear waste dump at Sellafield. In the first accident February 2nd, six workers were "slightly contaminated" at the Sellafield fuel reprocessing plant. Less than 24 hours later, radioactive liquids spilled from a storage tank. The NEW YORK TIMES reported February 8 that, "A scientists' report earlier this week indicated that radioactive material from the proposed underground waste storage site at Sellafield could seep into the Irish sea." [11]

### Other problems

Frightening accidents are not the only problems plaguing the nuclear power industry. Plutonium can be recovered from the highly-radioactive waste created by a nuclear plant. The plutonium can then be fashioned into an atomic bomb. The U.S. turned its back on "waste reprocessing" (to extract plutonium) 20 years ago, but other nations such as Japan and Britain have not.

Without the plutonium-extraction step, nuclear waste must be kept somewhere "safe" for an eternity (240,000 years) --something humans have never done before. Modern humans (HOMO SAPIENS) only appeared on Earth 100,000 years ago, so securing deadly wastes for 240,000 years is a novel idea, to say the least.

\*\* February 6, 1997, U.S. authorities protested Russia's announced plan to sell two nuclear reactors to India. The U.S. says it fears India wants the reactors to make atomic bombs. India surprised the world by exploding a plutonium bomb in 1974, using plutonium scavenged from a research reactor supplied by Canada. India and Pakistan are bitter enemies and have fought three wars since 1947. Indian officials say they need the reactors to generate electric power and the U.S. is imposing a colonialist double standard.

The Russians had previously announced plans to sell a reactor to Iran, a country that definitely wants a bomb, U.S. officials say. [12]

Residents of Florida are expressing concern because Russia has said it wants to help Cuba acquire a nuclear power reactor. Floridians 90 miles from Cuba aren't worried about atomic bombs, but they fear

that the Russian reactor may not be safe.[12]

The Russians say they can't afford to worry about the worldwide proliferation of nuclear weapons --they need to sell reactors to raise cash. Many Russian nuclear engineers have not been paid in months. Last December, more than a dozen employees at a St. Petersburg nuclear power plant seized the reactor's control room and threatened to shut down the plant if they weren't paid[12] --inadvertently suggesting a new kind of instability that can plague nuclear power technology.

\*\* Extreme poverty has driven North Korea to agree to take radioactive waste from Taiwan. Taiwanese authorities have not been able to overcome local opposition to the siting of a nuclear waste dump, so they have signed a contract with North Korea to take 200,000 barrels of their nuclear waste at \$1135 per barrel. This has set off alarm bells in South Korea, 40 miles from the chosen disposal site. The waste would reportedly be buried in old coal mines, and South Korea is concerned about possible water pollution.[13]

Japan has reportedly been considering paying the Marshall Islands to take Japan's radioactive waste, but such talk created political opposition among Marshall Islanders and Japan backed off.[13]

\*\* In Germany March 5, 1997, nuclear waste from two German power plants and a French reprocessing plant were trucked 12 miles from a railway station at Dannenburg to the Gorleben waste burial site in northern Germany, setting off huge protests. Five thousand demonstrators set up blockades to stop the trucks, which were carrying six 90-ton containers of intensely radioactive spent fuel rods. German police had to organize what the NEW YORK TIMES called "Germany's largest postwar security operation" to protect the trucks.[14]

It seems clear that wherever nuclear power technology gains a foothold, serious trouble follows close behind.

--Peter Montague (National Writers Union, UAW Local 1981/AFL-CIO)

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[1] Steve Wing and others, "A Reevaluation of Cancer Incidence Near the Three Mile Island Nuclear Plant: The Collision of Evidence and Assumptions," ENVIRONMENTAL HEALTH PERSPECTIVES Vol. 105, No. 1 (January 1997), pgs. 52-57.

[2] Maureen C. Hatch and others, "Cancer Near the Three Mile Island Nuclear Plant: Radiation Emissions," AMERICAN JOURNAL OF EPIDEMIOLOGY Vol. 132, No. 3 (September 1990), pgs. 397-412.

[3] "Revisiting Three Miles Island," ENVIRONMENTAL HEALTH PERSPECTIVES Vol. 105, No. 1 (January 1997), pgs. 22-23. And see: Maureen Hatch and others, "Comments on 'A Reevaluation of Cancer Incidence Near the Three Mile Island Nuclear Plant,'" ENVIRONMENTAL HEALTH PERSPECTIVES Vol. 105, No. 1 (January 1997), pg. 12.

[4] Maureen C. Hatch and others, "Cancer Rates after the Three Mile Island Nuclear Accident and Proximity of Residence to the Plant," AMERICAN JOURNAL OF PUBLIC HEALTH Vol. 81, No. 6 (June 1991), pgs. 719-724.

[5] William R. Clark, AT WAR WITHIN; THE DOUBLE-EDGED SWORD OF IMMUNITY (New York: Oxford University Press, 1995). See especially chapter 8.

[6] John Kemeny, THE PRESIDENT'S COMMISSION ON THE

ACCIDENT AT THREE MILE ISLAND (Washington, D.C.: U.S. Government Printing Office, 1979).

[7] Evelyn J. Bromet and others, "Long-term Mental Health Consequences of the Accident at Three Mile Island," INTERNATIONAL JOURNAL OF MENTAL HEALTH Vol. 19, No. 2 (1990), pgs. 48-60.

[8] Andrew Pollack, "After Accident, Japan Rethinks Its Nuclear Hopes," NEW YORK TIMES March 25, 1997, pg. 8.

[9] Associated Press, "2 Fires Break Out at Nuclear Site in Japan," NEW YORK TIMES March 12, 1997, pg. A4.

[10] Citizens' Nuclear Information Center, "Tokai Reprocessing Plant Suffers Fire After Explosion," press release dated March 11, 1997. Citizens' Nuclear Information Center is located in Tokyo, Japan. They can be reached by phone: 03-5330-9520; by fax: 03-5330-9530; and by E-mail: cnic-jp@po.ijnet.or.jp.

[11] Reuters, "Irish Protest 2 Accidents at British Nuclear Plant," NEW YORK TIMES February 8, 1997, pg. A5.

[12] Michael R. Gordon, "Russia Selling Atomic Plants to India; U.S. Protests Deal," NEW YORK TIMES February 6, 1997, pg. A3.

[13] Sheryl Wudunn, "North Korea Agrees to Take Taiwan Atom Waste for Cash," NEW YORK TIMES February 7, 1997, pg. 1.

[14] Reuters, "German Nuclear Waste Arrives to Big Protests," NEW YORK TIMES, March 6, 1997, pg. A11.

#### CORRECTIONS

In Rachel's #540 and #541 we attributed quotations incorrectly to Harriet Hardy; they were actually quotations from Alice Hamilton of Harvard University.

In Rachel's #542, we gave an incorrect address for WASTE NOT; the street is Judson, not Hudson.

Descriptor terms: nuclear power; tokai, japan; sellafield; england; reprocessing; plutonium; tmi; pennsylvania; radiation; stress; immune system damage; nuclear weapons; a-bomb; corrections; cancer; plutonium; iodine-129; coverups; ireland; proliferation; india; russia; iran; cuba; north korea; taiwan; radioactive waste; japan; marshall islands; germany; gorleben;