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## FOR THE RECORD

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# What Really Happened at Three Mile Island

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For 30 years the nuclear industry, its supporters within and outside of government, and, more recently, the corporate media have insisted that nobody beyond the boundaries of the Three Mile Island nuclear plant was killed or injured as a result of the accident on March 28, 1979. This incessantly repeated assertion is now taken as the truth. The American nuclear industry and its supporters also claim that the fact that there has not been another major nuclear accident in the U.S. proves that the nuclear industry learned its lesson, and nuclear power is now safe. History, however, tells a different story.

Hundreds of residents living near the reactor reported having had a metallic taste in their mouths before the accident was even announced that bright spring day on March 28, 1979, the day of the meltdown.<sup>1</sup> Scores of others broke out in rashes; saw their exposed skin turn red as if sunburned; vomited and/or got diarrhea, which in some cases lasted for months; or lost all of their hair<sup>2</sup>—all classic symptoms of radiation poisoning that have been reported by U.S. servicemen and downwinders of atomic bomb blasts.

Over time, unusually high numbers of both strange and common cancers began showing up among residents, particularly those living in the path of the radiation plumes that crept over nearby communities during the first few days following the accident. Myriad other health problems appeared—miscarriages, stillbirths, infant

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<sup>1</sup>Author interview with Three Mile Island area resident, Mary Osborne, at her home in Harrisburg on February 21, 1999; author interview with Three Mile Island area resident, Jane Lee, at her home in Middletown, Pennsylvania on March 28, 2004; letter from Pennsylvania State Representative Stephen Reed to NRC Chairman, Joseph Hendrie, August 9, 1979. See also S. Wing, D. Richardson, D. Armstrong, and D. Crawford, "A Re-evaluation of Cancer Incidence Near the Three Mile Island Nuclear Plant," *Environmental Health Perspectives*, Vol. 105, No. 6, January 1997, pp. 52–57.

<sup>2</sup>Author interview with Jane Lee, *op. cit.* See also Wing, et al, *op. cit.*; Joyce Maynard, "Three Mile Island: What Really Happened to the People Who Live There," *US Magazine*, October 6, 1986, pp. 26–34; Harvey Wasserman, "Three Mile Island Did It: The Fatal Fallout from America's Worst Nuclear Accident," *Harrowsmith*, Vol. 2, No. 9, May/June 1987, pp. 41–55; Joyce Hollyday, "In the Valley of the Shadow of Three Mile Island," *Sojourners*, March 1989; and Thomas Pawlick, "The Silent Toll," *Harrowsmith*, June 1980, pp. 33–49.

deaths, thyroid diseases, various autoimmune disorders, heart problems, and the sudden onset of allergies—as did unprecedented numbers of sick and dying farm animals and strangely mutated plants.<sup>3</sup>

Frustration over the lack of help from public health authorities and other government officials prompted citizens to go door-to-door to gather health data themselves.<sup>4</sup> Mary Osborne, a nearby resident who lived there before Three Mile Island was built, was one of the survey takers. “Our door-to-door studies showed horrendous problems everywhere,” she said. At almost every household or every other household we found cancer or some kind of emergency problem, and in some cases, different family members had different cancers.”<sup>5</sup>

Throughout this ordeal, Metropolitan Edison (which changed its name to General Public Utilities after the accident and owned TMI until 2000), the U.S. Nuclear Regulatory Commission, then Pennsylvania governor Dick Thornburgh and his officials, the state health department, and the U.S. Centers for Disease Control all insisted that nobody outside the boundaries of the plant was exposed to any more radiation than what they would receive with a chest X-ray. Therefore, they asserted, the health problems locals were complaining about could not be caused by the accident. Instead, authorities past and present say that stress—the explanation of choice for polluters everywhere—or other “lifestyle factors,” like smoking, drinking, poor diet, or taking too much anti-anxiety medication, is what ailed them.<sup>6</sup>

Health studies conducted by the Pennsylvania Department of Health, various federal government agencies, and Columbia University<sup>7</sup> all supported the nuclear industry/government line. The affected citizens contend that these studies were, for the most part, sloppy and included people who should not have been counted, excluded many who should have been, or the researchers did not do the necessary follow-up to see what happened to people who moved out of the area after the accident. The citizens also say study authors uncritically accepted the premise that

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<sup>3</sup>*Ibid.*

<sup>4</sup>The Aamodt study on TMI accident health impacts and subsequent cancers was submitted to the Nuclear Regulatory Commission on June 21, 1984 officially as “Aamodt Motions for Investigation of Licensee’s Reports of Radioactive Releases During the Initial Days of the TMI-2 Accident and Postponement of Restart Decision Pending Resolution of this Investigation” in the Matter of Metropolitan Edison Co. Three Mile Island Nuclear Generating Station Unit 1, Docket 50–289; Katagiri Mitsuru and Aileen Smith conducted another survey, which is dated October 1982.

<sup>5</sup>Author interview with Mary Osborne, *op. cit.*

<sup>6</sup>Author interview with Victor Dricks, NRC press office, February 19, 1999; see also Pawlick, *op. cit.*; Mary Dalrymple, “Science on the Firing Line,” *Endeavors Magazine*, Fall 1997, online at: <http://research.unc.edu/endeavors/aut97/wing.html>; Harvey Wasserman, “Three Mile Island: Exposing the Government’s Cover Up of Our Most Infamous Nuclear Accident,” *AlterNet*, March 30, 2009, online at: [http://www.alternet.org/environment/134174/three\\_mile\\_island:\\_exposing\\_the\\_government%27s\\_cover\\_up\\_of\\_our\\_most\\_infamous\\_nuclear\\_accident/](http://www.alternet.org/environment/134174/three_mile_island:_exposing_the_government%27s_cover_up_of_our_most_infamous_nuclear_accident/).

<sup>7</sup>M. Hatch, J. Beyea, J. Nieves, and M. Susser, “Cancer Near the Three Mile Island Nuclear Plant: Radiation Emissions,” *American Journal of Epidemiology*, Vol. 132, 1990, pp. 397–412.

not enough radiation was released to cause the illnesses people were complaining about so that even when higher disease rates were found, they were attributed to other factors.<sup>8</sup>

Information about the extent of the accident was slow to come out. The exact amount of radiation released will never be known, because crucial records from the first two days following the accident were destroyed, and not enough radiation dosimeters were deployed in surrounding communities to give a true measurement. What is known is that over several hours beginning around 4:00 am, a combination of technical problems and operator errors shut off both the primary and emergency cooling systems for the reactor core, resulting in a partial meltdown that damaged at least 70 percent of the core and caused more than one-third of its highly radioactive fuel to melt.<sup>9</sup>

Met Ed and the NRC maintained that the accident released 10 million curies of radioactive gases into the atmosphere. But David Lochbaum, a nuclear engineer-turned-whistleblower who recently began working with the NRC in Tennessee, says that figure is grossly underestimated, because it is based on a measurement of radiation levels in the most contaminated buildings on the TMI site a year after the fact and does not account for shorter-lived radionuclides, like Iodine-131, which would not have been measurable by that time. Nor, he says, does the official figure include any leakage from the containment, the concrete dome surrounding the core of the reactor. "All containments are known to leak, because of all the pipes and electrical conduit that pass through the walls," he said. "The costs of sealing all those penetrations are considered too high, so the federal regs allow a certain amount of leakage." Accounting for all of those factors, Lochbaum estimates that at least 40 million curies were released.<sup>10</sup> Others estimate that the radiation releases could have been 100 to 1,000 times higher than NRC estimates.<sup>11</sup>

Some scientists have attempted to find out what really happened to the community after the accident. Dr. Ernest J. Sternglass, a tenured professor of radiation physics at the University of Pittsburgh, immediately sought every relevant health statistic he could find. According to Sternglass, who was taught by Albert Einstein and who holds several patents on X-ray technology, the health impacts from the accident were unquestionable, significant, and included a sharp spike in infant deaths and hypothyroidism.<sup>12</sup> Dr. Gordon MacLeod, then Pennsylvania's Secretary of Health, tried to ensure all health impacts from the accident were fully disclosed.

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<sup>8</sup>Author interview with Mary Osborne, *op. cit.*; Maynard, *op. cit.*; Wasserman, 1987, *op. cit.* and 2009, *op. cit.*

<sup>9</sup>Wasserman, 1987, *op. cit.*; Maynard, *op. cit.*

<sup>10</sup>Author interview with David Lochbaum, February 24, 1999.

<sup>11</sup>Arnie Gunderson, "Three Myths of the Three Mile Island Accident," presentation prepared for the 30<sup>th</sup> anniversary of the TMI accident, March 28, 2009, in Harrisburg, Pennsylvania.

<sup>12</sup>Ernest J. Sternglass, "The Invisible Death (Part I): The First Casualty at T.M.I.," *The Nation*, February 28, 1981 and Ernest J. Sternglass, "The Invisible Death (Part II): The Lethal Path of T.M.I. Fallout," *The Nation*, March 7, 1981; see also Pawlick, *op. cit.*

He was sacked by former Governor Thornburgh for his efforts.<sup>13</sup> More recently, Steve Wing, an epidemiologist from the University of North Carolina at Chapel Hill, reanalyzed the data from the Columbia University study and concluded that people living closer to the path of the radiation cloud developed all types of cancers more frequently. In the areas of greatest fallout, lung cancer rates jumped up to 400 percent and leukemia rates climbed 700 percent. These scientists—and others who question the nuclear orthodoxy—have all been either drowned out or viciously attacked as biased, unprofessional purveyors of panic with an anti-nuclear axe to grind.<sup>14</sup>

Besides pointing out methodological errors in the Columbia study, which was ordered by a U.S. District Judge, Sylvia Rambo, in Harrisburg, Wing revealed that she issued a court order that prevented the researchers from considering a worst-case radiation dose to the surrounding population and dictated that the study find no accident-related adverse health effects.<sup>15</sup> Subsequently, Judge Rambo tossed out a class-action lawsuit by more than 2,000 plaintiffs seeking damages from the utility for health problems on the grounds that the plaintiffs failed to prove the accident caused them.<sup>16</sup> During the pre-trial proceedings, she disallowed testimony from their expert witnesses.

The plaintiffs appealed that decision all the way up to the U.S. Supreme Court. Even though the Court affirmed their right to go forward, it left much of Judge Rambo's rulings intact, which left them without experts to testify on their behalf, and thus at a dead end in their pursuit of justice through the courts.<sup>17</sup> An unknown number of cases settled out of court, though the terms of those settlements were sealed and must remain secret.<sup>18</sup> Of the more than 2,000 who brought suit, many have since died, and the number of plaintiffs continue to dwindle.

Ten years ago, the NRC's main talking point regarding the TMI accident was that a major catastrophe was averted, and that it resulted in significant regulatory improvements that have made nuclear power safe. In 1985—six years after the TMI accident—the NRC itself testified in the U.S. Congress that there was a 45 percent chance of a severe reactor accident between 1985 and 2005.<sup>19</sup>

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<sup>13</sup>Pawlick, *ibid.*

<sup>14</sup>Dalrymple, *op. cit.*; Wasserman, 2009, *op. cit.*

<sup>15</sup>Sylvia H. Rambo, U.S.D.J., Court Order, In the United States District Court for the Middle District of Pennsylvania, In Re: Three Mile Island Litigation, Civil Action No. 79-0432, filed December 15, 1986.

<sup>16</sup>The Associated Press, "Federal Judge Rules Against Three Mile Island Plaintiffs," *The News & Observer*, June 8, 1996.

<sup>17</sup>Author interview with Arnie Gundersen, a leading technical expert on nuclear engineering, April 1, 2009.

<sup>18</sup>Mary Warner, "Saga of Three Mile Island Started Six Years Ago: \$40 Million in Damage Claims Paid," *Sunday Patriot-News*, March 24, 1985.

<sup>19</sup>David Lapp, "The Price of Power Atomic Energy's Free Ride," *Multinational Monitor*, January 1993, online at: <http://www.ratical.org/radiation/mmAtomFreeR.html>.

David Lochbaum, who has worked at twelve different nuclear power plants (including Three Mile Island) in states ranging from Georgia to New York, says sheer luck rather than good management or serious concern for safety has so far prevented another nuclear disaster. He blames the risk on rogue plants that don't pay enough attention to safety regulations and the advancing age of the majority of the nation's 104 operating reactors—most of which are being granted license extensions that will allow them to operate for 20 years longer than they were designed to run. But Lochbaum is also concerned about the newer plants that were built in the 1980s. At that time, double-digit interest rates and inflation meant that nuclear plants were often rushed online with less attention to safety considerations.<sup>20</sup>

Thirty years later, amidst renewed calls for a “nuclear renaissance” to help us deal with another ecological catastrophe, global warming, the cruel and Orwellian denial of tragedy thrust upon unsuspecting communities in central Pennsylvania does not end their nightmare. Nor can it give any comfort to the 190 million U.S. citizens who live within 100 miles of at least one nuclear reactor, or in the event of another meltdown, shield us from its deadly radiation.

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<sup>20</sup>Author interview with David Lochbaum, *op. cit.*