

Lethal Arrogance: Human Fallibility and Dangerous Technologies

[Back to Previous Page](#)

*The author of **Lethal Arrogance: Human Fallibility and Dangerous Technologies** is Lloyd J. Dumas, University of Texas (Dallas) professor of political economy and member of the Board of Directors of Economists Allied for Arms Reduction. The book, costing \$29.95, was published in November, 1999, by St. Martin's Press, which provided the basis for this article.*

It is September 23, 1999. After a long, uneventful journey through millions of miles of space, NASA's Mars Climate Orbiter sweeps gracefully around the far side of the red planet heading toward orbital altitude. It never reappears.

One week later, workers at a nuclear fuel fabrication plant near Tokyo are routinely mixing uranium with nitric acid in a tank. Suddenly, there is a blue flash of light, radiation spews into the air and levels of radioactivity jump to 10,000 times normal. Thirty-five workers are exposed, and 300,000 people in the plant's vicinity are ordered to stay indoors. It is the worst nuclear accident in Japan's history.

Both events illustrate what happens when human error meets high-risk technology, an intersection that lies at the core of this book. It is a warning about the arrogance, our common assumption that we can always control the technologies we create — no matter how powerful, no matter how dangerous — and permanently avoid disaster. Our fascination with the power of what we can do often stops us from seeing how easily even the most sophisticated controls can be undone by simple human error.

NASA's \$87 million Mars Climate Orbiter was lost because one engineering team working on the project was using English weights and measures, while the other was using the metric system. The horrific Japanese nuclear fuel plant accident was caused by workers dumping almost seven times the proper amount of uranium into the tank.

In moving from a carefully monitored laboratory environment to the unpredictability of the real world, the idea of complete control of any technological system becomes an illusion. This is illustrated in Russia today, where economic deterioration, corruption and criminality surround more than two dozen nuclear power plants, large stores of toxic chemicals, radioactive materials and large arsenals of weapons of mass destruction.

Everything in Russia today seems to be up for sale. Police in Western Europe have recorded hundreds of arrests in schemes to sell nuclear materials on the black market that have apparently been stolen from facilities in Russia. General Alexander Lebed, former security advisor to Boris Yeltsin, claimed in 1997 that more than 100 "suitcase" nuclear bombs were missing from the Russian arsenal. More than once, frustrated managers of electric power plants have cut off power to military bases, in some cases compromising the safety and control of nuclear weapons. Nuclear power plants themselves have also been seized, as in December 1996, when unpaid workers took over the control room of the largest nuclear power plant supplying St. Petersburg. The book presents these case histories and much more.

Lethal Arrogance: Human Fallibility and Dangerous Technologies argues that, in a world of imperfect human beings, control over dangerous technologies is necessarily incomplete and transient, even in the best of circumstances. When circumstances are far from the best, as in many parts of the world today, the combination of error-prone people and powerful technology is a recipe for disaster.

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