Radiation Found to be Harmful in Any Amount

Low doses more dangerous than earlier estimated

By John LaForge

More news arrives daily of the ever-deadlier damage to the body by exposure to allowable "low doses" of radiation from nuclear reactors and radioactive waste. The findings — if widely recognized — could provoke a rewrite of guidelines for "allowable" exposures and bring an end to reactor operations in the U.S: Operating them so their emissions didn't kill anyone would be too expensive.

This is why critical scientists are pushed out of academia and industry and their studies ignored or suppressed.

In 2003, a dissenting group of British scientific experts found that internal exposure to plutonium is 100 to 1,000 times more dangerous than officially estimated (See p. 5). Their finding was cut from the official record and had to be published independently.

The National Research Council reaffirmed last summer their position that all radiation exposure carries the risk of cancer. The Biological Effects of Ionizing Radiation VII (BEIR VII) report explicitly refuted the "hormesis" theory — propounded by professors Todd Allen and Paul Wilson of the Department of Engineering Physics at the University of Wisconsin — that a little radiation is good for you. "The scientific research base shows that there is no threshold of exposure below which low levels of ionizing radiation can be demonstrated to be harmless or beneficial," said BEIR committee chair Richard Monson of Harvard.

This November, a study published in *Radiation Research* by U.S. and Russian scientists blamed excess cancers in the Ural Mountains in central Russia on chronic exposures to low doses of radioactivity leaked from a weapons factory 50 years ago. *Science* magazine calls the new report — along with a large scale study revealing an elevated cancer risk in nuclear industry workers around the world — "the strongest direct evidence yet of chronic, low-dose health effects."

In 2002, British researchers also published in *Science* their finding that low level radiation from Soviet bomb test fallout caused genetic mutations in families living nearby, mutations that can be passed to future generations. The rate of mutation was found to be 80 percent higher than in the corresponding generation in the control group.

In 2001 the National Cancer Institute was forced to reveal its finding that atomic bomb testing in Nevada, which spread radioactive fallout across every state in the union, has caused at least 15,000 cancer deaths and up to 212,000 nonfatal thyroid cancers. The 67 bomb tests blown off between 1946 and 1958 were said at the time to be safe.

A two-year government study in 1990 found a marked increase in leukemia deaths among people living near the Prairie Island nuclear power reactor in SE Minnesota. The "significantly high" risk of leukemia death appeared among residents between the ages of 40 and 59, the National Cancer Institute said. Northern States Power, now Excel Energy, which runs the reactors, said, "Power plants have releases that are so low that one would not expect to see any health effects at all." That was then.

The journal *Environmental Epidemiology and Toxicology* reported in 2000 that infant mortality rates around five U.S. nuclear reactors dropped almost immediately after the reactors closed. In areas surrounding five reactors shut down between 1987 and 1995 (Genoa, in Wisconsin; Rancho Seco in California; Ft. St. Vrain in Colorado; Trojan in Oregon; and Millstone in Connecticut), infant death rates dropped an average of 18 percent in the first two years. The average drop elsewhere in the U.S. was 6.4 percent.

Add to this growing understanding of the deadliness of low doses the fact that in 1987, 19 months after Chernobyl, the federal government officially doubled its estimate of the amount of background radiation we're exposed to — from 170 to 360 millirem per year.

No society that feeds its children on tales of successful violence can expect them not to believe that violence in the end is rewarded.
— Margaret Mead

Lullaby vs. Reality

Professional bias in reporting of radiation issues is often subtle. The *New York Times* leads the sophisticated effort to downplay findings of increased danger from low dose exposures. Just one example: "But even the new estimate that radiation is a more potent carcinogen than previously believed should cause no concern for the average person, experts said, because the public is not exposed to enough radiation to exceed levels considered safe."

In fact, there is no level considered safe. Today, not a single government agency is willing to say that some particularly small amount is harmless. A sampling of current official positions:

U.S. Environmental Protection Agency (EPA):

"Radiation is a carcinogen. [T]here is no level below which we can say an exposure poses no risk. Based on current scientific evidence, any exposure to radiation can be harmful (or can increase the risk of cancer) … In other words, it is assumed that no radiation exposure is completely risk free."

U.S. Department of Energy (DOE):

"[T]he effects of low levels of radiation are more difficult to determine because the major effect is a very slight increase in cancer risk."

U.S. Nuclear Regulatory Commission (NRC):

"[T]he radiation protection community conservatively assumes that any amount of radiation may pose some risk for causing cancer and hereditary effect. …"

U.S. Department of Health and Human Services (HHS):

"Ionizing radiation is invisible, high-frequency radiation that can damage the DNA or genes inside the body. Most studies on the long-term effects of exposure to radiation used to diagnose or screen for cancers or other diseases have not shown an elevated cancer risk, but it is possible that there is a small risk associated with this exposure."

National Academy of Sciences (NAS), BEIR VII, 2005:

"[T]he smallest dose has the potential to cause a small increase in risk to humans. … It is unlikely that there is a threshold below which cancers are not induced. …"