

How Safe Is Nuclear Power?

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We all can only feel deep sympathy and compassion for the victims of the terrible catastrophe that befell Japan on 11 March 2011. One of the world's largest earthquakes ever of magnitude 9, a 10-meter tsunami that flattened many coastal areas, freezing weather for the survivors sleeping in the open, shortages of food and water, and a series of explosions and fires at the six nuclear power plants in Fukushima, with the danger of a meltdown that would release huge amounts of radioactivity.

Some advocates of nuclear power have long argued that a major accident is about as likely as being hit by a meteorite. In 1975, the nuclear industry asked Professor Norman Rasmussen to produce a report that would reassure the public about the safety of nuclear energy. The report concluded that the probability of a complete core meltdown is about 1 in 20,000 per reactor per year.

Reality has shown this to be a gross underestimation. The three best known serious nuclear power accidents are those of Three Mile Island in 1979, Chernobyl 1986, and now Fukushima. But there have been many more accidents and partial core meltdowns releasing radioactivity.

A study commissioned by Greenpeace concluded that the Chernobyl accident may have resulted in an estimated 200,000 additional deaths in Belarus, Russia and Ukraine alone between 1990 and 2004. The nuclear power plants in Fukushima have about thirty times as much radioactive material as the reactor that exploded in Chernobyl, and Japan is much more densely populated.

Even if there were no accidents, no solution has yet been found in over 50 years for the safe storage of the radioactive waste produced by nuclear power plants. One of the by-products, plutonium 239, has a half-life of 24,100 years. That means, after 24,100 years, the intensity of radiation has declined by only 50%. It will take 241,000 years until the radiation has declined by a factor of 1000, which is considered a safe level. How can we guarantee that our descendants will not be exposed to those wastes for 10,000 generations?

The "precautionary principle" urges us to avoid the worst possible outcome of any decision. This implies that we should dismantle all nuclear power plants.

Are there any alternatives to nuclear energy? Indeed there are safe ways to produce renewable energy with wind, solar power, wave and ocean-thermal energy, which do not contribute to the greenhouse effect, unlike the burning of fossil fuels.

The Desertec project aims to generate electricity in deserts using solar power plants, wind

parks and to transmit this electricity to consumption centers. The first region for application of this concept is in the Middle East and North Africa (MENA) and Europe. Solar power systems and wind parks spread over 17,000 km² (0.2% of the Sahara desert) would provide a considerable part of the electricity demand of the MENA countries and provide continental Europe with 15% of its electricity needs.

Why do we have nuclear power despite all of its dangers for current and future generations? There is a simple reason. Nuclear power plants are highly profitable for a few, at the expense of other people's safety. Electricity from a nuclear power station can be cut off if people do not pay their bills, but energy from the sun collected on house roofs cannot be cut off. It makes people independent. The nuclear lobby does not want that.

Democracy requires that decisions are made by those affected, and that voters be fully and truthfully informed. People have been lied to about the safety of nuclear energy, and have in most cases not been allowed to participate in decisions about nuclear energy. That must change.

It is remarkable that all insurance companies have so far refused to insure against nuclear accidents, because they argue that they do not want to risk their money based on some professor's calculations claiming the risk is low. What if he is wrong? Insurance companies insist to base their risk calculations on real experience.

Because insurance companies refuse to cover the risks of nuclear accidents, the Price-Anderson Act of 1957 commits the US federal government to cover such risks. Other countries have similar legislation. This represents an enormous subsidy by the taxpayers to the nuclear industry. If the nuclear power industry were forced by law to pay for insurance against accidents, and pay for the safe disposal of its waste, we would have no nuclear power plants.

It is true that solar energy is currently more expensive than electricity from nuclear plants. But this is partly because of the indirect subsidy for nuclear power, and the shortage of research into alternative sources of energy. If a fraction of the research funds spent for nuclear power had been devoted to safe sources like wind and solar, we would most likely have cheap alternatives today.

If insurance companies, the experts in estimating risks, are unwilling to risk their money, why should people be forced to risk their lives? (END/COPYRIGHT IPS)

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