Nuclear Power Neither Clean nor Green nor Safe

Nuclear power isn't clean, or green, or safe, as Dr. Helen Caldecott of Australia, president of the Nuclear Policy Institute, points out.

Clean?

The front end of the cycle is not clean. Every gram of 20% uranium ore brings to the surface some 3000 becquerels of Radium-222. Radium also gives off radon which gives off alpha radiation--a hazard for mine/mill workers. It also disintegrates to form "radon daughters" in different forms of polonium (Po-218, Po-214, Po-210) which also give off radioactivity for a half-life of 1600 years.

Current operations are storing huge amounts of toxic wastes in pits along the waterways of the north--uranium, arsenic, radium, and polonium.--some 2.6 million cubic feet at Cluff Lake, and millions of tonnes from 7 mines into the huge JEB pit, which is 30 stories deep and the size of 4 football fields. How many million tonnes of radioactive waste and tailings will that hold? This is a great legacy for Sask. waters after the pumps are turned off! Moreover, nuclear reactors themselves give off tritium radioactive gas into the air--not so clean after all!

Green?

Some 93% of the refrigerant chlorofluorcarbon produced in the USA is used in the enrichment of uranium fuel for nuclear power. These compounds are 10,000 times more efficient than carbon dioxide at trapping heat, and therefore are a potent destroyer of the ozone layer in the stratosphere. Moreover, large amounts of electricity, plus the fuel for gas and diesel trucks and engines are used in the front end construction of the reactors lasting for many years. The Darlington reactors took 12 years to build at a cost of $14.4 billion dollars. Little wonder that there have been no reactors built in North America for 30 years! In addition, the enrichment process for the fuel also requires much electricity generated in turn by coal-fired plants.

Safe?

The radium being brought up to the surface with every gram of ore adds a radioactive danger to the enterprise. Miners and mill workers are in danger of lung cancer. Alpha particles can cause breaks in the chromosomes of cells, which years later can develop into cancers. Various epidemiological studies have shown that uranium workers have experienced two to three times the incidence of lung cancer as ordinary citizens. Though mining companies work to keep the dose rate of radioactivity low, the low doses are just as lethal as the high doses. Previous scientific studies of the Ontario Miners and of the Atomic Energy Company Limited workers have demonstrated this anomaly.

After some 40 years, the reactor machinery is intensely radioactive. Both it and the building must be decommissioned, taken apart by remote control, and transported to safe storage. The millions of dollars for decommissioning are not factored into the cost of so-called "cheap" electricity. The high-level nuclear wastes from burned fuel must be guarded, protected, and isolated from the environment for tens of thousands of years. Scientists are still struggling with this conundrum. Biologically dangerous items such as strontium-90, cesium-137, and plutonium are in danger of seeping into our water tables and becoming concentrated in food chains for the rest of time.

The use of nuclear power to boil water is neither clean, or green, or safe, or economical.

Bill Adamson