THE RISKS OF PLUTONIUM

Most of us recognize carbon dioxide as vital to our environment to make plants thrive. People who follow the global warming debate know that too much carbon dioxide might add to the risks of global warming. Until July 1998, few people in Eastern Idaho were aware that a single lungful of this very common gas in our atmosphere could result in death. Yet that's what happened to an employee at INEEL. Thus risks from even extremely common materials are not obvious.

Plutonium is a man-made material whose origin is linked to nuclear bombs. Like many man-made materials, including most chemicals, it can be both beneficial and potentially harmful. It has raised genuine concerns in the general public. Coalition 21 believes that some groups are opposed to nuclear benefits in any form. We recognize that some such group deliberately fuel the genuine concerns with a campaign of misinformation.

The challenge in that climate is to describe plutonium risks in two two-sided sheets of valid and interesting information. (We concluded at once that one sheet is not enough). We must make this information factual and subject to a minimum of debate. We'll meet this challenge by addressing the most common concerns, allegations, and claims.

Allegation: **Plutonium is the most dangerous material known to man.** That statement originated during World War II. Then plutonium was being made for the atomic bomb dropped on Nagasaki. Those responsible for plutonium worker safety wanted to make sure that this new material was not handled carelessly. Since then this now publicly disproved statement has derived its only authority from constant repetition. Experts in industrial hygiene do not support it.

A number of chemical and biological agents, such as nerve gases and botulism, are fatal to man in much smaller quantities. Even common materials such as caffeine, carbon dioxide, cyanides, lead and arsenic are, at times, more hazardous poisons.

The risk of plutonium differs from that of these other materials. Its chemical toxicity is inconsequential. Its primary hazard comes from its radioactivity if it is somehow taken into one's body. Our skin helps to protect us from this radioactivity. The danger arises from a radiation dose delivered to various organs inside the body. In general, plutonium that is inhaled is far more hazardous than plutonium that is swallowed. It is more readily absorbed into the blood stream via the lungs than via the G. I. tract. (For readers needing numbers, see the end of this fact sheet). Nevertheless, nobody is known to have died from a disease that indisputably developed from contamination with plutonium.

Concern: **Plutonium is poisoning the Snake River Plain Aquifer.** Or "plutonium is conceivably a health risk to those drawing water from the aquifer beyond the INEEL."

Between 1954 and 1970 waste shipped in from the nuclear weapons plant at Rocky Flats was buried in about a dozen acres at the INEEL. These locations are about 500 feet above the aquifer. This industrial-type waste contains an estimated several thousand pounds of