

Nuclear Power: Pro

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reactor building. These safety devices do not rely on any complex detection and triggering equipment to make them work. Their mere physical presence alone guarantees their function. Safety matters are then reviewed by the Nuclear Regulatory Commissions, and Advisory Committee or Reactor Safeguard, and Atomic Safety and Licensing Board in public hearings. So far the industry has a record of no injury to any member of the public and no radiation injury to any plant worker."

Wastes, that escape even with all the safe-guards, are not in concentration levels high enough to harm life as is shown in the following charts:

Threats of blackmail by capturing the radio-active wastes to create nuclear weapons, especially the hijacking of

plutonium which can be used in the making of bombs is a major concern in the industry. The nuclear power plants have installed very sophisticated in their reprocessing plants. These plants are licensed by the government and access is restricted to employes who have been investigated for security clearance. They are kept under constant surveillance while working and are thoroughly searched before entering or leaving the plant must be accompanied by armed guard and are designed to prevent movement in case of hijacking.

The management of nuclear wastes is the biggest concern of the Nuclear Community. Radioactive wastes are converted from liquid residue into an insoluble glass-like solid that is stable chemically, thermally and radiologically. Then it is reduced and sealed in stainless steel canisters one foot in diameter and ten feet long. The canister will be placed in underground basins of steel-lined concrete with 20-30 feet of water for cooling and additional shielding. These are built to withstand all credible natural forces and will have a service lifetime of at least several hundred years. This system is only temporary, until the government can develop a permanent disposal system.

The nuclear industry is trying to make its industry as safe as possible by considering and planning for every possible problem that may occur. Nuclear experts ask, "What more can be done?"

LIQUID RADIOACTIVITY LEVELS

(Picocuries/liter)*

| | |
|---|--------|
| Typical nuclear power plant radioactive waste discharge | 1-10 |
| Domestic tap water | 20 |
| River water | 10-100 |
| 4% beer | 130 |
| Ocean water | 350 |
| Whiskey | 1200 |
| Milk | 1400 |
| Salad oil | 4900 |

*A curie is a unit used to measure radioactivity
A picocurie is a trillionth of a curie
A liter is approximately one quart

FUEL CONSUMPTION AND WASTE (1000-Megawatt Power Plant)

| | Hourly | Daily | Annual |
|----------------------------|--------------|------------|----------------|
| Fuel Consumption | | | |
| Coal | 683,000 lbs. | 8300 tons* | 3,000,000 tons |
| Uranium | 0.3 lbs. | 7.4 lbs. | about 1 ton |
| Waste Production | | | |
| Coal (ashes) | 68,300 lbs. | 830 tons* | 300,000 tons |
| Uranium (fission products) | 0.3 lbs. | 7.4 lbs. | about 1 ton |

*1000 megawatts is enough electricity for a city of about 1 million people
equivalent to a 100-car trainload every day
equivalent to a 33-car trainload every day (not including airborne wastes)

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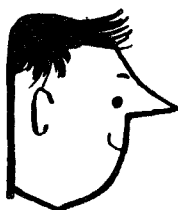
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