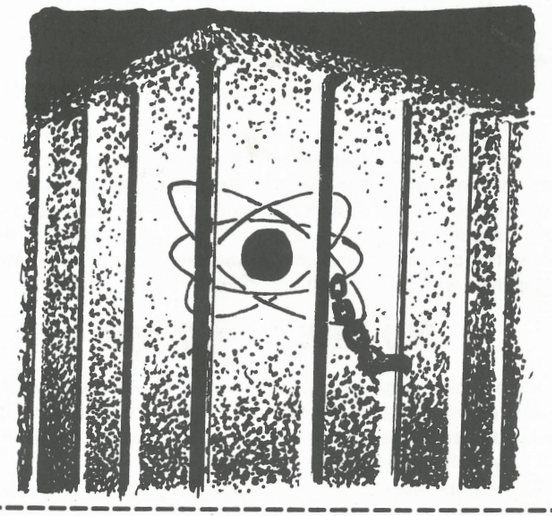
Practical alternatives exist. They require only public support to put them into action. You can be part of the growing national campaign for nuclear sanity and safe energy.

"The facts about nuclear energy must be taken to the village square and from there a decision made about its future."

Albert Einstein

For Nuclear Sanity . . .

Write to one of the organizations listed below to find out how you can link up with a local effort where you live. For a start, order more copies of this leaflet from any of the groups below and distribute them in your community.



SANE
514 C Street, NE
Wash., DC 20002
(202-546-7100)

Nuclear Weapons Facilities Project
c/o FOR
Box 271
Nyack, NY 10960
(914-358-4601)

AFSC
1432 Lafayette St.
Denver, CO 80218
(303-832-4508)

KAMLOOPS — SHUSWAP
PEACE COUNCIL
P.O. Box 973
Kamloops, B.C. V2C 6H1

☐ I would like to help. Please send me _____ more copies of this leaflet at 10¢ each, 100 for $5, 500 for $20
☐ Please send me more information about anti-nuclear activities.
☐ I enclose a contribution of $ _____.

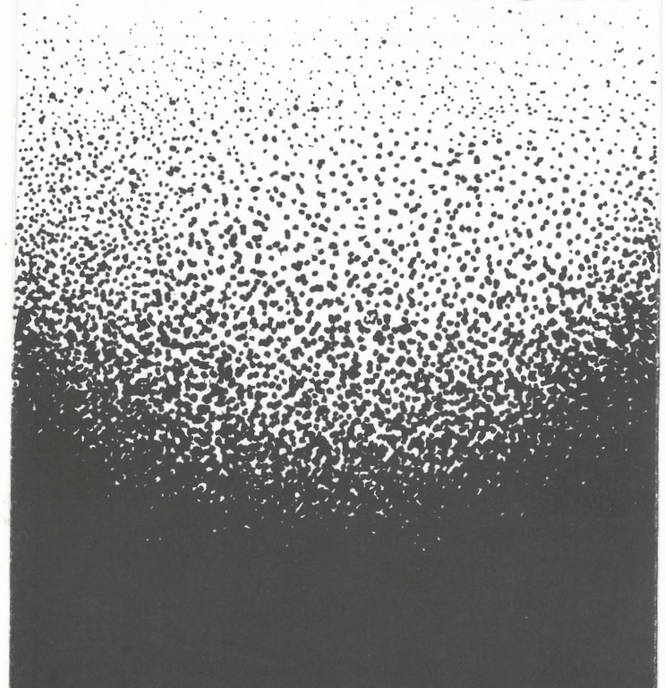
Name _____

Street _____

City _____ State _____ Zip _____

67

Thousands of Americans have already been killed by nuclear weapons— —our own



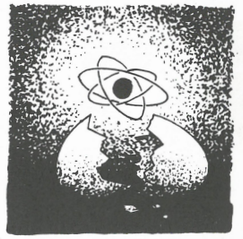
Radiation: The Human Cost

No Place to Hide

In 1942 Enrico Fermi and a group of American scientists at the University of Chicago unleashed the awesome power of the atom. Out of this discovery a vast nuclear industry has emerged, beginning first as a purely military program and later developing into an enormous Federal complex with strong connections to the nuclear power program.

The nuclear establishment today includes:

- 130 uranium mill sites
- 3 enrichment facilities
- 72 major commercial nuclear reactors
- 9 weapons production facilities
- 3 reprocessing centers
- 20 waste disposal sites
- 30 Dept. of Defense and Dept. of Energy reactors
- 148 Navy reactors
- 51 weapons storage and deployment sites



Drawings by
Gunnar Schlieder

This enormous network of facilities reaches into nearly every state of the union. In addition, the transportation of nuclear materials between various stages of the fuel cycle brings radioactive substances through countless communities—usually without local knowledge or control.

A Mushrooming Danger

While the rate of civilian nuclear power expansion has slowed in recent years, the production of nuclear weapons has increased. For 1980, the nuclear warhead production costs alone rose 12 percent to $2.1 billion. In addition, the Department of Energy (DOE) has embarked on a $500 million capital expansion program, euphemistically termed the "Weapons Complex Restoration Initiative." The money will be spent on expanding and increasing the capability of weapons production facilities—to build hydrogen bombs for such weapons as the Cruise missile, Trident submarine and MX missile.

The Silent Killer

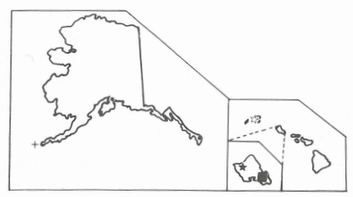
Nuclear facilities are exposing both their workers and surrounding communities to cumulative doses of *low-level radiation*. The dangerous health effects of low-level radiation have been documented with increasing frequency by scientists and physicians. (See box.) They include cancer of various kinds, as well as genetic damage which may be passed on to future generations.

All of us receive some radiation unavoidably—from the sun and natural substances all around us. But the existence of human-made radiation sources expose those nearby to disproportionately large cumulative doses and also increases overall radiation levels for the general population. The result is an increasing cancer risk to the population as a whole. The findings of a recent report by the National Academy of Sciences suggest that human-made radiation sources may produce as many as one million cancer cases among the 220 million Americans living today.

Here are a few Americans whose lives have been affected by nuclear industry radiation. (Over)

Nuclear Weapons Facilities U.S.A.

☆ Research and Development
★ Manufacturer
+ Testing Sites
■ Storage/Stockpiles
® Military Reactors
* Waste
◄ Fuel Processing
• Uranium Mine/Mill



"In recent years, my interest in the hazards of nuclear energy has grown from mere interest to genuine concern."

Mrs. Vivian Waterman, Colorado resident

Mrs. Waterman lives seven and a half miles southeast of the Rocky Flats Nuclear Weapons Plant, one and one half miles east of a chemical research facility, and about five miles from one of the largest uranium-producing mines in the United States. For many years, the water supply of her community was polluted by runoff from the uranium mine.

It was the cancer death of a neighbor and close friend that prompted Mrs. Waterman to start investigating cancer statistics in her neighborhood. Her survey, as thorough as possible under the circumstances, found an abnormally high incidence of cancer. When she reported her findings to Health Department officials, they were by no means surprised. (A study performed by a Colorado health inspector has also documented high cancer rates in this area—see chart)

The Rocky Flats Nuclear Weapons Plant which manufactures plutonium "triggers" for nuclear weapons has long been known to be a major source of radioactive pollution. Traces of tritium have been found in the drinking water of a nearby surburban community. The plant itself has suffered over 200 industrial accidents, including two major fires. The 1969 fire, the largest of its kind in US history, burned enough plutonium to build 77 Nagasaki-sized bombs and spread plutonium throughout surrounding communities. In 1976, soil studies conducted by county health officials found plutonium levels as high as 3,390 times background level two miles east of the plant and radioactive cesium up to 31 times background level.

"I asked the doctor at the Pulmonary Clinic if there was any way of determining whether this cancer was or could be connected to uranium and he said it was definitely a uranium cancer as far as he was concerned."

Harry Barnes, former uranium miner

Harry Barnes began working at the Homestake Sapin Uranium Mine in Grants, New Mexico in 1958. During the next few years, he worked in all phases of uranium mining—in an environment of constant exposure to radon gases and other radioactive materials. It was the middle 1960's before any radiation standards were established at Homestake Mine. When high doses were discovered the only response was to increase ventilation in the mines. Throughout this period, Barnes and his fellow workers were exposed to constant radiation.

Barnes died in February, 1980, after a long struggle with the respiratory ailments silicosis, emphysema and bronchitis. He had been unable to work since 1975, but the Federal Government denied him disability benefits.

Barnes is but one of a host of uranium miners who have died as a result of the regular inhalation of radioactive particles and dust. Included among these victims are many Native Americans, whose land is being used, often against their will, to mine uranium. The Indians often need the jobs and income, but they are being asked to take a deadly risk. Navajo Indians normally suffer little cancer, but eight Navajo uranium miners have died of cancer since 1970 in the tiny community of Red Rock, Arizona. Seventy of their relatives have filed suit for damages.

"The involuntary exposure of soldiers, workers, and civilians to radiation by the government and nuclear industry has created a class of people known as 'radiation fodder'."

Orville Kelly, founder, National Association of Atomic Veterans

Orville Kelly served at Eniwetok Proving Grounds in the Marshall Islands from November 27, 1957 to November 21, 1958. As the Commander of Japtan Island, Kelly witnessed 22 detonations of atomic weapons from a distance of six to ten miles. Kelly was told to warn his men against eating anything grown on the island or caught in nearby waters—because of high radiation levels.

Kelly wore a film badge for only 5 months of his assignment. The instrument measured only gamma radiation. But the bomb tests released alpha, beta, x-ray and neutron radiation as well.

In June 1973, Kelly was diagnosed as having lymphocytic lymphoma. He applied to the Veterans Administration for service-connected disability in 1974. The claim was rejected due to lack of evidence showing a cause and effect relationship between his cancer and his exposure at Eniwetok. Two subsequent claims were also rejected.

Upon learning that other veterans involved in the testing program had received similar treatment by the Veterans Administration, Kelly founded and served as director of the National Association of Atomic Veterans (NAAV). This organization has launched a media campaign to contact an estimated 250,000 veterans possibly involved in the testing program who may be suffering or will suffer from illnesses caused by radiation. NAAV is collecting all available data from the 183 atmospheric nuclear weapons tests to help veterans prove their participation in and contamination from the weapons tests. Kelly's organization reviews and processes veterans' claims and recommends action to strengthen individual cases presented to the Veterans Administration. The NAAV is providing a service which is currently unavailable to veterans.

Medical Effects

Dr. Alice Stewart, a scientist from the University of Birmingham, uses a metaphor to explain her view of low-level radiation effects. She compares a cell damaged by radiation to a broken plate: it can be mended, but will afterward be weaker and more apt to be broken again under stress. The slight and often superficially repaired damaged induced by low-level radiation, Stewart says, are more likely to be passed on genetically than other, more radical changes. Also, given the 25-year latency period, Stewart predicts a cancer epidemic in the next five years. (The genetic mutation effects may only become clearly evident in three to four generations.)

"There is no 'safe' amount of radioactive material or dose of radiation. Why? Because by virtue of the nature of the biological damage done by radiation, it takes only one radioactive atom, one cell, and one gene to initiate the cancer or mutation cycle. Any exposure at all therefore constitutes a serious gamble with the mechanisms of life."—**Dr. Helen Caldicott, M.D.**

Even if it doesn't cause cancer or genetic damage, low-level radiation weakens the general health of those exposed and makes them more vulnerable to other illnesses.

Documentation

A growing body of statistical evidence now backs up the concern that those living or working near nuclear facilities are running a higher risk of cancer. Leading epidemiologists from around the country, however diverse their methodologies or locales, have come to a common conclusion: those exposed to nuclear industry low-level radiation are suffering a dramatic jump in cancer rates.

Due to the latency period for cancer, the radiation/cancer link, though long suspected, has been difficult to prove. But the accumulation of statistical studies and their similar results have confirmed popular suspicions. Below are excerpts from several of these studies.

Johnson Study of Rocky Flats

Dr. Carl Johnson, a county health inspector, collected data on the cancer rates of the Coloradans living downwind of Denver's controversial Rocky Flats nuclear weapons plant. In a report released in May of 1978, Dr. Johnson found that these citizens were suffering a cancer rate significantly higher than that of the surrounding Denver community.

Cancer Type	*% of increase**	
	Women	*Men*
Lung	—	41
Leukemia	—	40
Lymphoma	10	40
Colon	30	43
Ovary	24	—
Testicular	—	141

* above residents of nearby counties.

Mancuso Findings at Hanford

In 1964, Dr. Thomas Mancuso was commissioned by the Atomic Energy Commission (forerunner of today's Department of Energy) to look into cancer rates among workers at the nuclear weapons and waste facility in Hanford, Washington. He found a rate far above the national average, touching off a major controversy. Mancuso's funding was terminated by the AEC before he could complete the study, but excerpts from his preliminary findings are listed below.

Cancer Type	*% of increase**
All cancers	26
RES neoplasms	58
Bone marrow	107

* above expected

Najarian Study of Portsmouth Shipyard

In 1977, Dr. Thomas Najarian investigated the rates of cancer among workers at a nuclear shipyard in Portsmouth, N.H. He found startingly high rates.

Cancer Type	*% of increase**
All types	75
Leukemia	400

* above non-nuclear Portsmouth workers

"I was never one to speak out before but I feel this is so important. I don't want other people to be in the same situation."

Dorothy Roberts, widow of nuclear test guard

In 1966, Harley Roberts was hired as a guard at a nuclear test site in Southern Nevada, with government assurances that the work would be safe. On December 18, 1970 the underground nuclear test code-named "Baneberry" accidentally vented an 8,000 foot high cloud of radiation into the atmosphere. Roberts and hundreds of other workers on duty 3½ miles from the explosion were exposed to a dose of radiation. Three and a half years later, Roberts died of leukemia. Today, his widow, Dorothy, is suing the U.S. government on the grounds that they caused her husband's death.

The "Baneberry" test explosion is just one of many that have resulted in the uncontrolled venting of radioactive materials into the environment. Since September 1961, 40 unclassified underground nuclear tests conducted at the Nevada test site have released radioactivity off-site. Yet no plans exist for the evacuation of nearby communities. Local residents must content themselves with government assurances of test safety.

No More Victims

If the nuclear industry continues to grow, it will endanger the health of more and more Americans. The massive increase planned over the next decade for nuclear weapons and power will only multiply the hazard.

This can be avoided. A realistic alternative to more nuclear weapons lies in negotiated and independent superpower intiatives towards arms reductions. The lowering and ultimate elimination of global arms stockpiles could actually enhance U.S. security. As a first step, the President should now call a complete nuclear moratorium; no additional construction or operating permits should be issued for civilian reactors; and the further production of nuclear weapons should be halted. Safe energy alternatives, including solar power and conservation, should be pursued.

If nuclear facilities are closed, workers should not be made to suffer as a result. Economic adjustment and job redevelopment programs should be provided for nuclear workers and their communities. The countless people already made victims by the nuclear industry should receive full compensation and benefits.

(Over)