



Grandmothers for Peace

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THE PEOPLE'S POLICY ON RADIOACTIVE WASTE

PREAMBLE

The amount and danger of long-lasting environmental poisons produced in recent decades is unprecedented in human history. Since the beginning of the nuclear age, policy regarding all levels of radioactive waste has been set by the nuclear industry, the military and governments. Monetary gain, secrecy and militarism have consistently taken precedent over concerns about intergenerational equity, environmental and public health and spiritual well-being.

Any policy regarding nuclear waste must begin with an immediate halt to its production.

Future survival requires that we take full responsibility for nuclear waste and keep it within our sphere of control. Policy decisions must consider the health, safety and habitat of ALL living things and recognize the need for this most dangerous substance to be completely isolated from the environment for as long as it remains hazardous.

Presently, there is no scientifically sound, environmentally just or democratically defined solution to the disposal or storage of radioactive waste. Yet each day approximately ten tons of high-level radioactive waste (HLRW) is generated, which is one million times more radioactive than the original fuel. It is insanity to continue to use nuclear reactor technology that benefits only one or two generations while creating poisons that will threaten the next 12,000.

In the United States, the nuclear power and weapons industry and government agencies have consistently evaded responsibility for the development of safe methods of nuclear waste storage and containment. The federal Nuclear Waste Policy Act is a reckless pursuit of an "out of sight, out of mind" approach that ignores concerns and recommendations from both the scientific community and the public.

Since we cannot depend on government or industry to set policy, the people now propose our own solutions to the growing crisis of radioactive waste production. We must become guardians of the waste to protect ourselves and future generations, and to model and practice an ethic of sincere responsibility. To this end, a consortium of grass roots environmental and social justice organizations, scientists and engineers, community leaders and Native American tribes are proposing solutions to the growing crisis of nuclear waste generation and containment.

THEREFORE, WE, THE PEOPLE, DO STATE THE FOLLOWING:

1. Stop Production of All High Level Nuclear Waste

After fifty years of scientific research there is still no solution to HLRW containment in sight. Transporting highly radioactive waste from the site of generation to create new sacrifice areas will not eliminate the problem. Burial of waste takes it out of our sphere of responsibility, causes uncontrollable contamination and limits future choices. The reactors and their irradiated fuel storage pools constitute a clear and present danger through site contamination, accidents and potential sabotage. When faced with a serious crisis, immediate action must be taken. Nuclear reactors and weapons production facilities should be permanently closed now. The health and habitat of our families and all living beings is our right. It supersedes national borders, politics and corporate profits. It is above price and it is not negotiable.

2. Radioactive Waste is Safer Stored than Traveling on Highways

Nuclear fuel rods are unstable and contain the most dangerous substances on earth. The intense radioactivity of irradiated fuel, even after ten years of cooling, presents unacceptable risks involved in transportation. As the fuel “cools” over the first few hundred years, the danger to the public decreases exponentially. Communities living near nuclear reactors concur that, in most instances, transport of HLRW poses a much greater danger to the public and the environment than temporary to intermediate on-site storage, using responsible methods. The transportation of HLRW spreads the risk factor across thousands of miles and into hundreds of communities across the country.

3. Responsible On-Site Storage Must Include Highly Engineered Facilities

Neither irradiated fuel pools nor the current proposal of dry cask storage are viable options for the on-site storage of HLRW. The nuclear industry must be financially liable for waste clean-up, and must fully explore and develop containment technology that isolates the waste from natural and human-made assaults and the biosphere. The Nuclear Waste Fund is projected to have approximately \$35 billion, which could easily pay for responsible on-site storage. Options requiring further exploration include:

- Modification of containment vessels as reactors are shut down to isolate waste caskets;
- Internal waste casket monitoring for radiation levels, pressure and temperature;
- Interim Hardened On-Site Storage (HOSS), as proposed by Dr. Arjun Makhijani, President of the Institute for Energy and Environmental Research (IEER)ⁱ;
- Assured storage of waste in highly-engineered facilities that are constantly monitored for leakages, and possess the capacity to retrieve the waste to repair or replace containment cells and control leakages in redundant leachate collection systems.

4. New Risk Assessments Are Needed For All Nuclear Facilities

Nuclear reactors are the only form of energy production that require an evacuation planⁱⁱ. 74% of past incidents at nuclear reactors have involved human errorⁱⁱⁱ, yet human error is not a part of the risk assessment analysis for those reactors. The dangers associated with a terrorist attack or sabotage have not been fully acknowledged. Risk assessments that consider the full picture - human error, earthquakes and sabotage - are needed not only for the reactors, but for the irradiated fuel pools and any type of on-site storage facility. Where useful risk assessment cannot be done with at least a 90% confidence limit, which is especially true for terrorist threats, the precautionary principle should be applied.

5. Nuclear Weapons Production Must Be Halted

Radioactive waste from nuclear weapons production and related weapons research and development is still piling up at nuclear weapons facilities in the United States. Some of this defense waste is highly radioactive and is already being transported within the United States to the Waste Isolation Pilot Plant (WIPP) near Carlsbad, New Mexico. The risk of terrorist attack has opened the door to proposals intended to accelerate shipments of the waste stored on-site, overriding safety regulations and posing additional risks to communities along the transportation routes. A livable and sustainable future depends on the elimination of all nuclear weapons activity; the safe handling and transportation of existing waste; and strict safeguards for workers and emergency personnel involved with waste management activities.

6. The Use of Depleted Uranium In Munitions Must Cease

Depleted Uranium (DU) is a by-product of nuclear weapons production. Rather than safely dispose of this radioactive waste, the Department of Energy provides it to the U.S. Military for use as an armor-penetrating substance. DU munitions vaporize on contact, immediately contaminating air and soil. Billions of shells litter battlefields threatening civilians and animals who later come in contact. This highly toxic metal has a radioactive half-life of 4.5 billion years, and is internationally recognized as a threat to public health and the environment. It is suspected that more than 50 sites across the U.S. and battlefields throughout the world are contaminated by DU, causing illness and death.

7. Clean-up Standards for Contaminated Sites Must Protect All Future Inhabitants of the Land

The "subsistence farmer or rancher" model used by the U.S. Dept. of Energy for calculating future exposures should be the minimum for setting clean-up standards for all radioactive sites, rather than other 'nature park' or unpredictable scenarios.^{iv} Cultural preferences regarding harvesting of traditional foods and medicines must also be factored in. Future animal, plant and human migration and land-use patterns cannot be predicted and the hazardous life of HLRW makes projections into geologic time impossible. The level of poisoning done in our time cannot be assuredly communicated to future inhabitants. Therefore, it is our responsibility to reduce the risk of exposure at all cost.

8. Low Level Radioactive Waste Containment Technology is Also Insufficient

Shallow land burial of "Low-Level" Radioactive Waste (LLRW) has been proven to be a failed technology. Four of the six shallow land burial sites for LLRW in the United States have been closed due to leakage and off-site radioactive contamination. The two sites remaining open in Barnwell, South Carolina and Richland, Washington, are also leaking.

Communities all over the United States are fighting hard to get their soil and water "cleaned up" from radioactive contamination from nuclear weapons production and other nuclear industry activities. However, dumping in unlined pits at the expense of a new community is unacceptable. Landfills for household garbage are required to meet much higher standards. ALL radioactive waste must be isolated from the environment and must be monitored and retrievable.

9. Nuclear Waste Policy Must Adhere to the Principles of Environmental Justice.

Often environmental justice analysis is omitted, manipulated or ignored when siting nuclear facilities and waste repository sites, as evidenced by the selection of Yucca Mountain in Nevada and the Skull Valley Goshute Reservation in Utah for high-level waste repositories. Both sites are on Native American treaty lands and both are obvious violations of environmental justice. In every step of the nuclear chain, from uranium mining to waste storage, disenfranchised communities are disproportionately affected by adverse environmental effects. Current nuclear policies must be amended and all future policies constructed to adhere to the principles of environmental justice, and must respect the rights of ALL living beings.

10. Public Oversight is Mandatory

It is clear after twenty years of compromised industry-biased research at Yucca Mountain that a new credible approach is required. A public non-profit corporation, which would include members of the industry, the public and independent scientists, should be created to study the problem of radioactive waste disposal. This approach would create an alternative to the current culture of fear and nuclear denial, and would foster new ideas. Oversight and Safety Committees (using European models) should be in place for each facility and include local community members.

11. Full Disclosure of Radioactive Materials Must Be Enforced

The public has a right to know about the amount, type and disposition of the waste generated in their communities. Currently, only the state of New York requires annual reporting from LLRW waste generators. Waste producers have taken advantage of this lack of accountability by mischaracterizing waste streams and by engaging in illegal disposal activities. Mandatory reporting results in source reduction and compliance with environmental regulations. Inventories of waste generated are essential for the development of informed radioactive waste management policy and the public's right to protect their health.

12. Radioactive Waste Classifications Must Be Changed

"Low-Level" Radioactive Waste (LLRW) is a dangerous and misleading term. In the U.S., it includes all nuclear waste that is not legally high-level waste, some transuranic wastes, and uranium mill tailings. Yet LLRW from nuclear reactors includes:

- Irradiated Components and Piping: reactor hardware and pipes that are in continual contact with highly radioactive water for the 20 to 30 years the reactor operates;

- Control Rods: from the core of nuclear power plants--rods that regulate and stop the nuclear reactions in the reactor core;
- Poison Curtains: which absorb neutrons from the water in the reactor core and irradiated fuel pool;
- Resins, Sludges, Filters and Evaporator Bottoms: from cleansing the water that circulates around the irradiated fuel in the reactor vessel and in the fuel pool, which holds the irradiated fuel when it is removed from the core; and, entire nuclear power plants when they are dismantled.

The highly radioactive and long-lived reactor wastes are included in the "low-level" waste category along with the much less concentrated and generally much shorter-lived wastes from medical treatment and diagnosis and some types of scientific research. The vast majority of medical waste is hazardous for less than eight months. Yet, it is in the same category as reactor waste that will be hazardous for hundreds of thousands to millions of years. Some radioactive elements commonly found in nuclear reactor "low-level" waste are: Tritium, with a half-life of 12 years and a hazardous life of 120-240 years; Strontium-90, half life of 28 years, hazardous life of 280-560 years; Plutonium-239, half life of 24,000 years, hazardous life of 250,000 years, and Iodine-129, half-life of sixteen million years, hazardous life of 160-320 million years.

13. Renewable Energy Must Replace Nuclear Energy

The 17% of the United State's electricity provided by nuclear reactors could be readily replaced by conservation, efficiency and renewable sources. Conversion to renewable sources of energy production would provide a just transition for workers utilizing comparable job skills and minimizing retraining. Additional jobs should be created through the implementation of efficiency standards and conservation programs, further reducing America's dependence on foreign oil and deadly nuclear fuel. For example, the electricity generated by Diablo Canyon's nuclear reactors on the seismically active Central Coast of California could be readily replaced by a combination of a solar generating station and large wind turbines (on surrounding hills and/or off-shore) located on the 1200-acre site.

14. The Precautionary Principle Must Be Applied

The Precautionary Principle is defined as "When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically. In this context the proponent of an activity, rather than the public, should bear the burden of proof." This principle must be applied to nuclear waste generation and containment.

15. Subsidized Healthcare Must Be Provided for Victims of Radiation Exposure

Studies at the Rancho Seco nuclear reactor in Sacramento, California show a 25% increase in infant mortality in the first two years of operation and a drop of 31% in the two years following closure.^v Besides exposure to radiation from routine reactor emissions, accidents at Chernobyl and Three Mile Island and deliberate experiments, millions of people have been exposed through atmospheric nuclear weapons testing. Health care for these victims is needed now. The nuclear industry and the federal government must take financial responsibility for the healthcare of all people routinely or accidentally exposed to radiation and make timely reparations to the victims already suffering from radiation exposure.

16. The Nuclear Guardianship Ethic Must Guide Our Choices

Each generation shall endeavor to preserve the foundations of life and well-being for those who come after. To produce and abandon substances that damage following generations is morally unacceptable. Given the extreme toxicity and longevity of radioactive materials, their production must cease. We accept responsibility for the nuclear materials produced in our lifetimes and those left in our safekeeping. Future generations have the right to know about the nuclear legacy bequeathed to them and to protect themselves from it.^{vi}

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ⁱ Dr. Arjun Makhijani, *IEER Nuclear Waste Management Plan*, June 4, 2002 www.ieer.org

ⁱⁱ Ralph Nader, 2000 Presidential Candidate's statement.

ⁱⁱⁱ Kenneth Boley, et al. PUBLIC CITIZEN'S Annual Nuclear Power Safety Report: a plant by plant assessment of nuclear reactor safety in 1987, p. V-9 (Dec. 1988), 215 Pennsylvania Ave., SE, Washington, DC 20003

^{iv} Arjun Makhijani and Sriram Gopal, *Setting Cleanup Standards to Protect Future Generations*, December 2001, 6935 Laurel Ave. #204, Takoma Park MD 20912

^v Joseph J. Mangano, Improvements in Local Infant Health After Nuclear Power Reactor Closing, *Environmental Epidemiology and Toxicology* (2000) 2, pg 32-36 Radiation and Public Health Project, 786 Carroll St., #9, Brooklyn, NY 11215

^{vi} Nuclear Guardianship Forum for full text, Joanna Macy, <http://www.nonukes.org/ngl.htm>

This document was initiated by participants of the People's Nuclear Policy Forum held February 2002, and has been improved by many people since then. Some contributing organizations include: The Bay Area Nuclear Waste Coalition (banwaste.envirolink.org), Citizens Awareness Network (nukbusters.org), Citizen Alert (citiizenalert.org), SLO County Grandmothers for Peace peacegrannie@hotmail.org, SLO County Green Party (slogreens.org), Healing Ourselves & Mother Earth (h-o-m-e.org), New Mexico Toxics Coalition (coilaash@mindspring.com), Nuclear Guardianship Project (nonukes.org), Nuclear Information and Resource Service (nirs.org), Ohngo Gaudadeh Devia Awareness (mbullcreek@yahoo.com), and Shundahai Network (shundahai.org).

For additional information, go to H ME's Peoples' Policy page at h-o-m-e.org/Forum/forum.