

FACING REALITY

A Citizens' Guide

to the Future

of the U.S.

Nuclear

Weapons

Complex

The *FACING REALITY Citizens' Guide* has been produced under the auspices of the

National Council on the Department of Energy's Nuclear Weapons Complex in cooperation with the **Military Production Network**, a national alliance of organizations working to address issues of nuclear weapons production and waste cleanup.

Plans to produce the initial report, *FACING REALITY: The Future of the U.S. Nuclear Weapons Complex*, began in a 1991 meeting of members of the Military Production Network and a variety of funders, hosted by the Tides and W. Alton Jones Foundations, the Rockefeller Family Fund, and the North Shore Unitarian Universalist Society Veatch Program. That report is intended as a comprehensive handbook for Members of Congress and their staffs, state and local leaders, journalists, and citizen research and advocacy groups.

The Citizens' Guide is a less technical and detailed summary and update of the initial report, and is intended for wide use by citizens concerned with the current operation and the future of the U.S. Nuclear Weapons Complex.

Members of the Guide's Management Council are:

Sharon Carlsen, Nuclear Safety Campaign, Seattle, WA

Kerry Cooke, Director, Snake River Alliance, Idaho

David Culp, Legislative Coordinator, Plutonium Challenge, Washington, DC

Peter Gray, Senior Science and Policy Writer, Friends of the Earth, Washington, DC

Don Hancock, Director, Nuclear Waste Safety Project, Southwest Research & Information Center, Albuquerque, NM

Arjun Makhijani, PhD, President, Institute for Energy and Environmental Research, Takoma Park, MD

Bill Mitchell, Nuclear Safety Campaign, Seattle, WA

Christopher Paine, Senior Research Associate, Natural Resources Defense Council, Washington, DC

Gerald Pollet, JD, Executive Director, Heart of America Northwest, Seattle, WA

Robert Schaeffer, Public Policy Communications, Belmont, MA

Lynne Stembridge, Executive Director, Hanford Education Action League, Spokane, WA

Editor – **Peter Gray**

Public Education Consultant – **Robert Schaeffer**

Secretary to the Council – **Richard Boone**, Director of the Project for Participatory Democracy, The Tides Foundation, San Francisco, CA



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For more information, please see the complete version of *FACING REALITY*, from which this summary was adapted by Peter Gray. The following people contributed sections of the original report:

David Albright, Senior Scientist and Director, Nuclear Weapons Production Project, Friends of the Earth, Washington, DC

Jackie Cabasso, Executive Director, Western States Legal Foundation, Oakland, CA

Tom Carpenter, Attorney and Director of the Citizens' Clinic, Government Accountability Project, Seattle, WA

Brian Costner, Executive Director, Energy Research Foundation, Columbia, SC

H. Jack Geiger, MD, Co-Chair, Task Force on the Health Risks of Nuclear Weapons Production, Physicians for Social Responsibility, Washington, DC

Peter Gray, Senior Science and Policy Writer, Nuclear Weapons Production Project, Friends of the Earth, Washington, DC

Don Hancock, Director, Nuclear Waste Safety Project, Southwest Research & Information Center, Albuquerque, NM

Marylia Kelley, Founding Member, Tri-Valley Citizens Against A Radioactive Environment, Livermore, CA

Daryl G. Kimball, Associate Director for Policy, Physicians for Social Responsibility, Washington, DC

Arjun Makhijani, PhD, President, Institute for Energy and Environmental Research, Takoma Park, MD

Gerald Pollet, JD, Executive Director, Heart of America Northwest, Seattle, WA

Dan W. Reicher, JD, Senior Attorney, Natural Resources Defense Council, Washington, DC

John Stroud, Co-Director, Project for Economic Conversion of Los Alamos National Laboratory, Concerned Citizens for Nuclear Safety, Santa Fe, NM

James D. Werner, Senior Environmental Engineer, Natural Resources Defense Council, Washington, DC

Tom A. Zamora, Senior Research Analyst, Nuclear Weapons Production Project, Friends of the Earth, Washington, DC

Names of organizations are for identification purposes only.

INTRODUCTION: Recipe for Disaster

Several groups of U.S. citizens recently went to Russia and Kazakhstan to learn about the other side of the Cold War. They brought horror stories back from the major centers of nuclear weapons work in the former Soviet Union. Lakes, rivers, and even the Arctic Ocean have been polluted by staggering quantities of radioactive waste. Nuclear test explosions and a major waste accident have made large areas of land uninhabitable. In their rush to counter the “American Threat,” Soviet officials ignored environmental, health, and safety considerations. They systematically lied to the people they were supposed to defend.

For most Americans, it is no surprise that the USSR mistreated its own citizens. But still unknown to many is that the U.S. side of the nuclear arms race paralleled the Soviet experience. The history of the “Nuclear Weapons Complex,” as it is called by its manager, the Department of Energy (DOE), is a tale of strategic overkill¹, massive contamination², health hazards³, and cost overruns.⁴

An expected 30-year attempt to contain the mess might cost 150-200 billion taxpayer dollars.⁵ The toll of damage to democratic processes and public trust, including lying to American citizens, cannot be measured. Three ingredients of disaster, prevalent since the 1940s, continue to drive our nuclear arms policy:

- **A cult of secrecy** Concealment of the 1940s Manhattan Project became a habit that spread a “national security” shield over every aspect of the nuclear arms program, far beyond any legitimate concerns about protecting weapons design details.
- **Conflict of interest** The careers and fortunes of managers and private contractors in the nuclear arms program have depended on endless development and manufacture of new nuclear warheads. Environmental, health, and safety standards are seen as annoying obstacles to “normal operations.”
- **Extremely hazardous materials** Our nuclear weapons program produces many of the most deadly substances ever identified, and handles them with inadequate concern for worker safety and for where the materials eventually go.

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A CONTAMINATION SAMPLER

- The **Fernald** Feed Materials Production Center (renamed Environmental Management Project) in **Ohio** emitted between 600,000 and 3,000,000 pounds of toxic uranium dust into the air and water. Known contamination of residential well water was kept secret for years during the 1980s.
- Plutonium processing at the **Rocky Flats** Plant in **Colorado** has contaminated the region's air and water with toxic and radioactive substances. Serious plutonium fires and plutonium accumulation in ventilation ducts have endangered plant workers and local populations.
- **Hanford** Reservation in **Washington** State has released massive quantities of radioactive isotopes into the air, soil, groundwater, and Columbia River. Dozens of huge tanks are filled with waste of unknown composition; some of them have generated compounds that risked causing a disastrous explosion. Thousands of cubic feet of highly radioactive reactor fuel rods were recently discovered buried in shallow trenches.
- **Los Alamos** National Laboratory in **New Mexico** has one of the world's largest radioactive dumps, containing more than 12,000,000 cubic feet of radioactive waste, and is still adding about 180,000 cubic feet per year. More than 2,000 contaminated sites have been identified, with an expected cleanup cost of more than \$2 billion.
- When a DOE biologist at **Oak Ridge** National Laboratory in **Tennessee** discovered extremely high levels of mercury in the local environment, he was reprimanded for "failure to perceive but reaucratically positive solutions." When the news leaked and ORNL was forced to do its own study, it found that 2.4 million pounds of mercury had been lost to the environment.
- At the **Idaho National Engineering Laboratory**, waste—including nearly 1,000 pounds of plutonium, more than 200 tons of uranium, and 90,000 gallons of organic solvents—was dumped into shallow trenches. This and other hazardous waste is seeping toward the Snake River Plain aquifer. From 1957 to 1963, scientists at INEL knowingly released 6 million curies of radioactivity into the atmosphere.
- Since 1960, **Lawrence Livermore** Laboratory in **California** has emitted tritium-contaminated water into the soil, and more than 750,000 curies of tritium into the air.
- In 1988, when workers at **Knolls** Atomic Power Laboratories in **New York** complained about radioactive contamination, General Electric, the site contractor, issued a "security newsletter" to all employees, threatening termination, \$100,000 fines, or life imprisonment if they spoke to outsiders about the plant.
- In May 1989, at the **Pantex** warhead assembly/disassembly plant in **Texas**, 40,000 curies of tritium gas were released, exposing five workers. The Advisory Committee on Nuclear Facility Safety reported that: "events are marked by confusion, misread instruments, and uncertain actions... It is still unclear that effective control of the situation by an adequately prepared response team ever took place."

A New Department of Energy?

DOE Secretary James Watkins has recognized a long record of environmental, safety, and health abuses; criticized his department's "management culture"; and promised to reform it. He has now conceded that there is no need to produce more of two crucial materials—plutonium and highly enriched uranium—for weapons. Watkins dropped the assumption that the arsenal must continue to hold 20,000 nuclear warheads, and slated several obsolete plants for permanent shutdown.

Old Attitudes Are Still in Place

However, at the same time the arms race was ending and the Soviet Union was collapsing, DOE:

- Lobbied to restart plutonium operations at Rocky Flats, Colorado despite a lack of need for new warheads;
- Refused to support a verifiable ban on producing plutonium and enriched uranium for weapons, even though there is no foreseeable need to make more;
- Poured billions of dollars into attempts to restart risky, obsolete tritium production reactors and build oversized new ones, even though more tritium will not be needed for several decades at least;
- Continued research and development of warheads that have no clear purpose;
- Blocked progress toward a Comprehensive Test Ban Treaty;
- Fought against legislation that would require DOE to comply with established environmental, health, and safety laws;
- Supported overriding states' rights in order to force them to accept radioactive waste dumps.

Presidents Bush and Yeltsin have agreed to cut each nation's strategic arsenal to 3,500 weapons or fewer. Yet DOE's proposal for the next century, "Complex 21," assumes a stockpile of up to 17,000 warheads. Although weapons production stalled several years ago, the research and production budget remains at more than seven billion dollars.

By focusing on theoretical risks—for example, that an enemy might attack if faced with fewer than 20,000 warheads—officials often failed to perceive immediate hazards. That tradition continues. The administration's refusal to end nuclear testing is a serious threat to Russian disarmament and democratic reform. Similarly, refusal to support a formal ban on making plutonium and highly enriched uranium for weapons undermines U.S. credibility. The United States cannot credibly ask other countries not to build nuclear arms if it continues to develop and test new weapons.

Toward A New Reality

In early 1992, experts from a wide array of national and grassroots organizations that focus on the nuclear arms industry wrote *FACING REALITY: The Future of the U.S. Nuclear Weapons Complex*. That report, from which this summary is condensed, contains the first comprehensive post-Cold War

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policy analysis and set of recommendations for the entire Complex. Some limitations suggested by the report are:

- The Complex should support a future arsenal of fewer than 3,000 warheads (instead of 3,000 to 17,000 as planned);
- An informed public should decide the purpose of any remaining weapons;
- Citizens must receive a clear explanation of why they should bear the costs and hazards of more nuclear arms production;
- All research and development of new weapons should end;
- Nuclear testing should be stopped for a year, saving hundreds of millions of dollars, demonstrating U.S. willingness to join Russia, Kazakhstan, and France in moving toward a global ban, and providing time for serious consideration of the need for any further tests.

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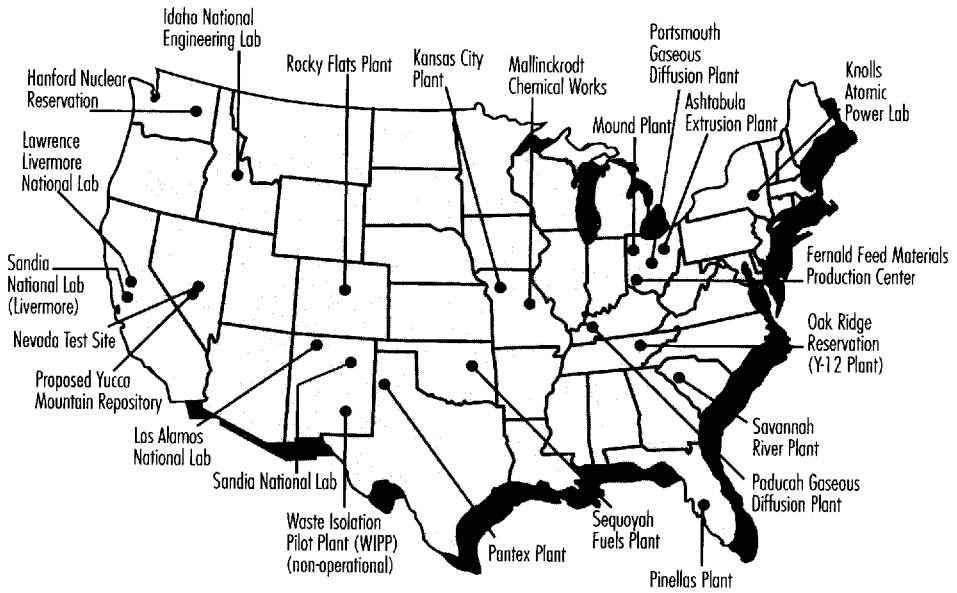
The end of Cold War-driven production means that:

- A unilateral halt in making plutonium and highly enriched uranium for weapons can be turned into support for a global, verifiable production ban;
- Plutonium recycling and fabrication are unnecessary for at least 5 to 10 years;
- Tritium production can be delayed at least 10 to 40 years;
- Warhead remanufacture can be delayed at least 5 to 10 years;
- Many billions of dollars can be saved by canceling unnecessary projects.

A Post Cold War Plan

The nation's new mission should be to:

- Shift national priorities away from arms production;
- Become, through example and diplomacy, an international leader in preventing the spread of nuclear weapons;
- Safely and efficiently close and decommission obsolete plants;
- Constructively employ displaced weapons specialists who might otherwise be recruited to spread nuclear weapons know-how;
- Safely and verifiably store dangerous materials that could be used to manufacture nuclear weapons;
- Efficiently manage numerous contaminated sites;
- Respond to the needs, particularly the health problems, of people who served on the front lines of the Cold War;
- Operate an "open government" that could win public trust.



THE LABORATORIES: Their Nuclear Weapons Work is Done

Taxpayer subsidized scientists at Livermore and Los Alamos—DOE's primary nuclear weapons laboratories—have been busy lobbying for new projects. For example: gigantic thermonuclear bombs for staving off asteroids⁶, new generations of "mini-nukes" for wars against Third World countries⁷, and electricity generated by thousands of underground nuclear explosions.⁸

The labs need to be reined in sharply. Their only legitimate nuclear weapons role should be that of a passive caretaker of the remaining arsenal as it is reduced.

The Administration has willingly cooperated with the scientists' desire to keep the money valves open. The 1.9 billion dollar fiscal year 1993 request for nuclear weapons research, development and testing is up eight percent from 1991 spending—before the breakup of the Soviet Union.

DOE's plan calls for research on a variety of new weapons.⁹ At best, these programs are a "wish list" for a world that no longer exists. At worst, they are consistent with Pentagon scenarios of a "new world order" in which the United States uses a nuclear threat to dominate global affairs.

These projects will cost the country more than just money. Both labs have already emitted large amounts of radioactive material. Some technologies they want to develop also pose serious proliferation risks. Instead, the labs should use their expertise to support non-proliferation and verifiable arms reductions.

NUCLEAR TESTING AFTER THE COLD WAR: What's Left to Do?

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The United States should declare a one-year moratorium and hold an open debate on the real needs, if any, for more tests.

Nearly all the world's nuclear test explosions now occur in Nevada—two of them in June 1992 during the week after Bush and Yeltsin agreed to cut their strategic arsenals to 3,500 weapons or fewer. President Bush continues to oppose ending nuclear testing or joining the suspensions declared by the former Soviet republics and France.

The favorite post-Cold War excuse for testing—although it has motivated a minority of actual tests—is warhead safety. The possibility that some warheads might scatter deadly plutonium in an accident is a legitimate concern, but the most risky weapons are already scheduled for retirement.

New handling procedures might suffice to improve safety for those that remain. And President Bush's decision to put strategic bomber weapons in secure storage and reduce the number of weapons on alert greatly reduces the risk of an accident.

Some of the actual reasons for current tests are even less compelling. A test that until recently was scheduled for late 1992 was of an X-ray laser weapon for a Star Wars project that had been essentially abandoned two years earlier. Other tests still planned are of weapons effects under "nuclear warfighting," a dangerous and discredited doctrine.

The United States should declare a one-year moratorium and hold an open debate on the real needs, if any, for more tests. The labs should be required to show that the benefits of every proposed future test exceed its economic, environmental, and proliferation costs.



Some of the subsidence craters from underground nuclear tests at Yucca Flat, Nevada.

ATMOSPHERIC TESTING: The Enduring Legacy

Tens of thousands of military people received heavy radiation doses during exercises using nuclear weapons. Similar numbers of civilians downwind of test sites were also exposed. During and after the 18-year period of U.S. atmospheric testing the Atomic Energy Commission lied about the risk—in sworn court testimony as well as official reassurances.

More than 500 above-ground tests (mostly U.S. and Soviet) contaminated the Earth with radioactive fallout that will cause cancer and genetic damage for thousands of years. Based on National Academy of Sciences cancer research, combined with United Nations fallout data, the cancer death toll from doses received by the year 2000 could be on the order of 400,000.¹⁰

Internal guidelines of the Atomic Energy Commission in the 1950s reveal a shocking disregard for public safety. The AEC tacitly approved of fallout doses 50 to 150 times higher than official U.S. radiation exposure limits of the time. Exposed populations were kept in the dark about this secret policy until documents were unearthed in court proceedings.¹¹ For decades the government refused to recognize the death and injury it caused, and only since 1990 has it grudgingly paid small sums of compensation.

The risks of underground testing are less direct but just as serious: every test weakens efforts to control nuclear proliferation and threatens to contaminate limited Nevada groundwater. The end of the Cold War has pulled the logical rug from under nuclear testing, but the nuclear weapons industry insists that the program is crucial to national security. Years of intense citizen opposition finally drove nuclear testing underground in 1963. Citizens must lead the way again – toward a comprehensive test ban

FISSILE MATERIALS: Time For A Verifiable Ban

The United States finally conceded that it will never need more “fissile materials” (plutonium and highly enriched uranium) for weapons. But it has refused to support a multinational production ban.

A verifiable fissile materials cutoff would build confidence in disarmament by ending Russian plutonium production. It would also ease fears that Russia might create a secret stockpile and use it to “break out” of an arms control treaty. By verifiably ending their own fissile materials production, the two largest nuclear-armed states would be far more credible when they call on other countries to do the same.

The United States has huge surpluses of both materials, which last forever in human terms.¹² These gluts will grow as arms agreements and initiatives take effect. Ignoring reality, DOE insisted until 1990 that more plutonium had to be pro-

duced. Officials still maintain that it is a valuable resource. However, since fissile materials are dangerous to handle, nearly impossible to dispose of, and might be stolen for weapons use, they have become liabilities rather than assets.

TRITIUM: No Need To Rush

DOE has wasted billions of dollars trying to restart obsolete reactors and build oversized new ones—to produce tritium that the country doesn't need. These efforts should be cut drastically, leaving only a modest research program.

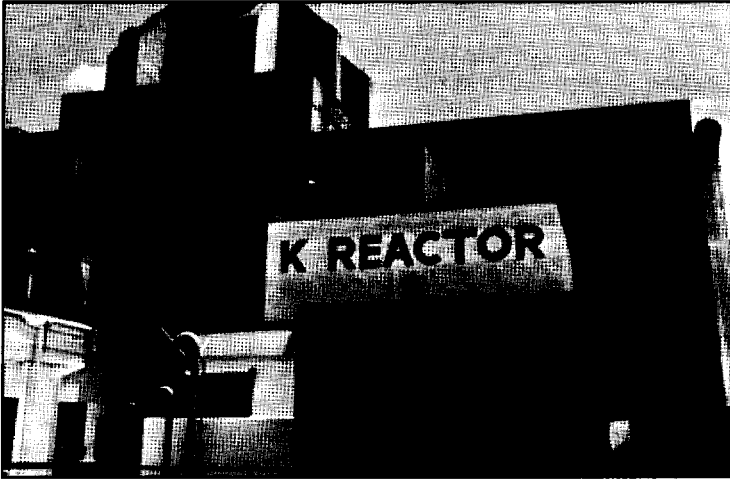
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Tritium, a radioactive form of hydrogen, is used to increase the power and reduce the size of nuclear weapons. With a decay half-life of 12.5 years, tritium must be periodically replenished as long as U.S. weapons rely on it. DOE has used this fact to raise fears of "unilateral nuclear disarmament" if it does not quickly resume tritium production.

The last three of five tritium production reactors (at the Savannah River Site) were shut down in 1988 after a National Academy of Sciences study found disturbing safety lapses, including signs of "acute aging" and an inability to respond properly to accidents. DOE asked Congress for \$250 million to repair and restart all three reactors by the end of 1988. By late 1992, the restart program had consumed more than \$2 billion. Yet only one reactor had gone through an operational testing program, and it had leaked radioactive coolant water into the Savannah River.

DOE is also pursuing construction of new reactors to replace the Savannah River units. Through fiscal year 1992, the New Production Reactor (NPR) program will have cost about \$1.1 billion, with another \$278 million requested for FY93. DOE's estimated total cost for a new tritium reactor is \$5.6 billion: history suggests a real pricetag several times higher.

The push for tritium has been rationalized by exaggerated national security "requirements." But adequate tritium has been "produced" in the past by simply dropping false arsenal assumptions and improving recycling efficiency. Even greater supplies will come through disarmament: cutting the stockpile from 20,000 to 5,000 weapons will postpone the need for production by some 25 years. If the stockpile shrinks to 1,000 warheads—the range of "finite deterrence" favored by a growing consensus of experts—tritium production could be delayed until at least the 2040's. Safer, cheaper methods could then be used if and when new tritium is needed.



U.S. Department of Energy

This production reactor at Savannah River first operated in 1954.

HEALTH EFFECTS RESEARCH: Make it More Honest

The nuclear weapons industry controls research into the effects of extremely radioactive and toxic materials it produces and handles. For half a century, the Complex has used its immunity from checks and balances to distort and conceal scientific research results.¹³

Keeping the health effects of radiation secret is irrelevant to national security, but often essential to bureaucratic self-preservation. This conflict of interest can be ended by taking the self-regulatory role away from DOE and declassifying its medical information.

Officials of the Complex have asserted that rarely, if ever, were there serious accidents or hazardous releases to the environment. They say that there were no real threats to public health. These statements have often proved false. But in a stream of cases, DOE has been hostile toward "whistleblowers" who report unusual health risks or question DOE assurances. Restoring responsible behavior and public trust requires:

- Supervision of radiation health research by a non-military agency that does not produce weapons, and oversight by qualified independent scientists and representatives of site workers and nearby communities;

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Keeping the health effects of radiation secret is irrelevant to national security, but often essential to bureaucratic self-preservation.

- Open access to DOE and contractor medical data;
- An adequately funded Comprehensive Epidemiologic Data Resource bank available to scientists, containing all relevant data from the Complex and its planned health monitoring system;
- Enabling the Occupational Safety and Health Administration (OSHA) and Environmental Protection Agency (EPA) to penalize or shut down DOE operations that violate public health standards;
- Weighing the supposed benefits of nuclear weapons against health and safety risks before any production is resumed.

WARHEAD DISMANTLEMENT: Verification Is Essential

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DOE plans to respond to recent arms reduction agreements by rapidly increasing its warhead disassembly rate to about 2,000 per year (compared to 280 dismantlements in FY87). While this is welcome news, the United States has no plans to dismantle weapons verifiably, and therefore is not in a position to monitor thousands of former Soviet warheads.

Russia has reportedly agreed not to reuse nuclear material from retired weapons in new ones, but to store it at sites subject to international monitoring, if the United States will abide by similar constraints. In the national interest, that offer should be accepted.

Unverified dismantlement could undermine arms reductions. The further dismantlement goes, the greater the unknowns will become. How many weapons have been destroyed? How many are left? How much nuclear material exists and how much has been removed from weapons? What will become of it? These anxieties will grow as stockpiles shrink.

Dismantlement could be accelerated by retiring and disabling weapons in larger numbers than can be entirely taken apart each year at the Pantex plant near Amarillo, Texas. Warheads can be separated from their delivery vehicles, made inoperable, sealed in special containers with tamper-proof tags, and kept in storage facilities open to bilateral or international inspection.

No one knows what to do with the crucial plutonium cores, or "pits," of warheads. DOE plans to continue storing pits at Pantex until it decides the fate of about 60 tons of plutonium to be removed from warheads by the early 2000's.

Since pits might be reused in weapons, either by the host government or a terrorist (or other unauthorized) group, they must be stored in a secure and strategically stabilizing way.

Adequate verification can establish a baseline of confidence for pursuing deeper arsenal cuts. Early attention to verification could also prevent misunderstandings of nuclear capability and intent in the event of a political reversal in the former Soviet republics.

WASTE STORAGE AND DISPOSAL: A Continuing Dilemma

After many years of frustration and billions of dollars spent, DOE has not found a technically and politically acceptable way to dispose of its vast backlog of radioactive waste. While

RADIOACTIVE WASTES AT DOE SITES (As of December 31, 1990)

VOLUME IN CUBIC METERS

Site	Stored		Buried	Disposed	Contam.	Total
	High Level	Transuranic	Transuranic	Low Level	Soil*	Volume
Fernald, OH				298,500		298,500
Hanford, WA	254,000	7,866	109,000	573,800	31,960	976,626
INEL, ID++	12,000	37,472	57,100	144,100	56,000	306,672
Los Alamos, NM		7,579	14,000	209,900	1,140	232,619
Mound, OH		222			106	328
Nevada Test Site		587		408,600		409,187
Oak Ridge, TN		1,974	6,200	439,100	13,000	460,274
Rocky Flats, CO		915				915
Savannah River, SC	132,000	3,992	4,534	612,800	38,000	791,326
West Valley, NY	1,230					1,230
Others			3	32,880		32,883
TOTAL	399,230	60,607	190,837	2,719,680	140,206	3,510,560

Source: Integrated Data Base for 1991 (DOE/RW-0006, Rev. 7), October 1991

Figures 2.1, 2.2, 4.4; Tables 3.2, 3.3, 3.4, 3.5, 4.8

*DOE'S "low" estimate; "High" estimates at INEL are 156,000; and 1,601,000 at Oak Ridge

++Does not include spent fuel stored at Idaho Chemical Processing Plant

Compiled by: Don Hancock, Southwest Research and Information Center

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The costs of waste disposal should appear at the "front end" of every nuclear waste generating process, rather than being passed on to taxpayers and future generations.

there is no cheap or easy way out of this mess, waste policy can be more rational. Materials should be categorized according to their actual long term hazards, additional waste generation should be minimized, and disposal costs should be paid up front.

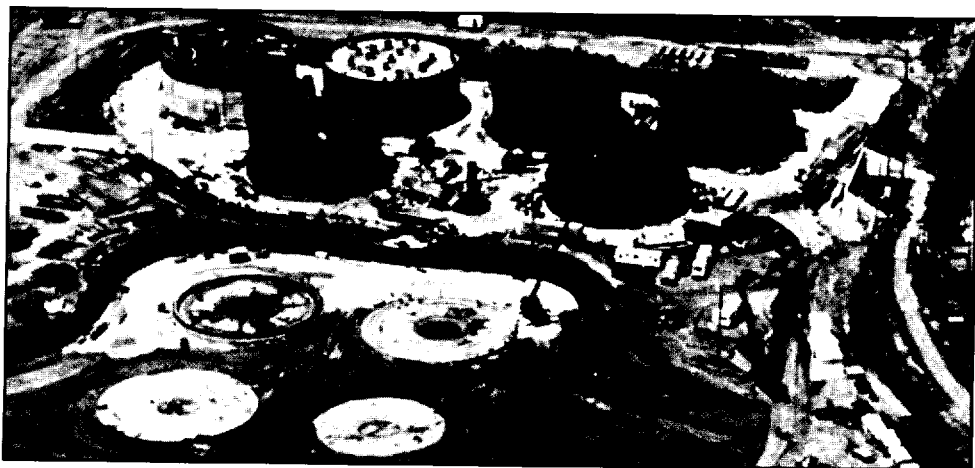
The Complex has produced about 125 million cubic feet of radioactive waste.¹⁴ For many years the types and amounts of waste were not properly recorded, and many dump locations are poorly mapped. "Disposal" often meant dumping waste into rivers and shallow trenches or pumping it down injection wells. Other materials were "disposed of" by releases into the air. Wastes were stored in plywood boxes, 55-gallon drums, or steel tanks. High-level waste is still stored in dozens of million-gallon tanks.

Radioactive wastes are officially defined by the processes that generated them.¹⁵ Instead, they should be classified according to four qualities that determine health hazard: type and intensity of radiation; longevity; dispersibility; and biological pathway.

Any management system based on faulty principles will be unnecessarily costly. Three billion dollars have been spent on a geologic disposal program, and expected real disposal costs have increased rapidly. At the Waste Isolation Pilot Plant (WIPP) dumpsite in New Mexico, DOE's cost estimates for the five-year period including the first years of operation went from \$0.53 billion in 1989 to \$1.1 billion in 1991. Yet huge inventories of plutonium-contaminated soil will be left out of WIPP, so the site will do little to prevent human exposure even if it eventually meets safety standards.

Nearly all radioactive waste comes from nuclear power and weapons production. The system for dealing with this material should:

- **Redefine radioactive wastes according to longevity and actual hazard.** For example, a new "long-lived" category should include all waste containing significant quantities of elements with half-lives longer than 20 to 25 years.¹⁶
- **Restructure waste management and disposal.** Consideration of specific sites should be deferred until health standards and scientific procedures are generally agreed upon. No siting, construction or operation of low-level disposal facilities should be allowed without comprehensive health-based EPA standards. Shallow burial should be banned. An independent agency should oversee waste handling.



High-level waste storage tanks being built at Savannah River in the early 1980's.

- **Realistically estimate disposal costs.** Costs should appear at the “front end” of every nuclear waste generating process, rather than being passed on to taxpayers and future generations.
- **Provide for extended onsite storage.** Reactor waste handling should reflect the likelihood that long-term isolation will not be available for decades. Funds for extended onsite storage should come from fees paid by consumers of nuclear-generated electricity. Obsolete reactors should be left intact for up to 100 years to reduce disposal requirements and risk, and to anticipate delays in longer term disposal.

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The record shows that DOE cannot now write an adequate cleanup plan, much less implement one.

CLEANUP: More Conflict of Interest

The record shows that DOE cannot now write an adequate cleanup plan, much less implement one. The department has failed to make good use of public participation or take outside advice except under political pressure.

Cleanup priorities must be set so as to minimize the risk of catastrophic accidents—such as high-level waste tank explosions—as well as controlling risk to future generations and restoring sites so that land and water can be used for other purposes. A better system would:

- Take all production activities out of the cleanup budget;
- Create a “dedicated cleanup account” used only for Environmental Restoration and Waste Management activities

- as defined by environmental laws and cleanup agreements;
- Set budget requests based upon publicly determined cleanup needs for each site as specified by the FY92 Defense Authorization Act;
- Ensure enough funding to meet short-term and long-term requirements of laws and agreements;
- Begin long term management of hazardous wastes including those from decontaminating and decommissioning weapons plants.

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“Cleanup” is a misnomer for management of the waste and pollution from nearly 50 years of nuclear weapons production. The task is better described as attempted containment of the Cold War legacy. Despite the many competent people within it, DOE lacks a serious commitment to sound environmental science. This stems from two kinds of conflict of interest: one within the department, and one having to do with its contractors.

DOE is charged with nuclear arms production and nuclear power promotion. These roles do not encourage full disclosure of operational risks or harm from past activities. Conflict of interest should be eliminated from the agency doing cleanup by either: removing all functions from DOE except cleanup; putting all cleanup functions under EPA; or creating a new cleanup agency.

Many DOE contractors, such as Westinghouse, want to promote nuclear power, or, like Martin Marietta, sell military hardware. This conflict of interest could be reduced by awarding cleanup work only to corporations that do not have nuclear construction or military production contracts, or by having the government itself do the work.

Any cleanup organization must be subject to strong oversight and to civilian laws and regulations. Each site should have an oversight board funded through charges imposed by state and EPA regulators. Site boards should reflect the diversity of interests affected by the sites.

Official oversight is also necessary. The failure of state and federal regulatory agencies to oversee DOE is a primary cause of the massive environmental problems created by half a century of nuclear weapons research and production. The EPA, OSHA, Nuclear Regulatory Commission, and state agencies are currently barred from complete oversight of Complex operations. Unless the Federal Facilities Compliance Act is passed, EPA and state agencies will re-

main unable to impose administrative orders, fines, or penalties on noncompliant DOE activities.

Effective oversight requires adequate funding. Yet the Administration has requested only 0.63 percent of the total Defense and Energy cleanup budget for EPA oversight activities. In contrast, private corporations restoring commercial waste sites pay an average of two to four percent of total cleanup costs for EPA oversight.

THE BATTLE FOR INFORMATION

Excessive secrecy allows government officials to hide activities for the sake of their budgets and careers. Meanwhile it drains the economy and undermines democracy. Information with no strategic content, including emissions and worker health data, is still kept secret. With more than 19,000 documents classified on an average day, the entire U.S. secrecy system needs a post-Cold War overhaul.¹⁷ All government information should be public except when disclosure could clearly threaten national security.

A partial remedy for needless secrecy is the 1966 Freedom of Information Act (FOIA). Investigators, journalists, and citizens have used the law to bring government information into the open. In the 1980s, FOIA requests and associated lawsuits exposed some of the worst crimes of the Complex. But even with FOIA, citizens must somehow know a document exists before they can ask for it. And unfortunately, DOE is charged with administering its own FOIA program.

Some public interest groups have also begun to cooperate with workers—known as whistleblowers—who expose health, safety, and environmental scandals at nuclear facilities. The nuclear arms industry goes to great lengths to silence whistleblowers and suppress unclassified but embarrassing information about its activities. Workers at the Knolls Atomic Power Laboratories near Albany, New York were warned by General Electric, the site contractor, not to make even casual comments on Knolls operations. The gag order threatened termination, a \$100,000 fine, or life imprisonment for any “deviation” from the policy. Yet people have risked their careers to speak out. Workers who expose illegal or dangerous activities perform a valuable public service—rarely with any prospect of personal gain. They must be protected from retaliation.

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STILL NO HUMAN JUSTICE

People injured by nuclear weapons activities receive inequitable treatment because DOE and its contractors have been exempt from liability. Members of Congress should be pressured to act in the national interest by revoking this protection and ensuring fairness for those who served on the front lines of the Cold War.

The communities and workers exposed to hazardous DOE emissions are calling for the same justice that citizens would expect if private companies had exposed them to danger. But the government has spent tens of millions of dollars defending its contractors from lawsuits, and DOE is essentially immune from the damage claims of citizens. Unless specifically waived by Congress, the concept of "sovereign immunity" protects DOE from legal action.

Several legislative proposals are aimed at helping nuclear weapons workers obtain justice from the government they served. Rep. David Skaggs has introduced a "Defense Nuclear Workers Bill of Rights Act," that would cover health reinsurance and radiation exposure compensation. The Oil, Chemical, and Atomic Workers union has proposed a more comprehensive "Worker Superfund," modeled after the GI Bill of Rights.

The GI Bill following World War II was a very successful investment in social justice as well as productivity. That example should be revisited as a prototype for fair treatment of nuclear weapons workers.

If managed properly, such a program might offer Complex employees the choice between: a) retraining and preference for cleanup and environmental restoration work; b) retraining at a higher education or job training school; or c) dislocated worker assistance benefits for one year. It could also provide the United States with committed, dedicated cleanup workers, and a well-educated workforce for other endeavors.

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CUTTING THE BUDGET

Despite a suspension of nuclear arms production, the Administration's Fiscal Year 1993 budget request is still geared for a high level of activity. The nuclear weapons research and production budget of \$7.5 billion could be cut by at least \$1.6 billion—22 percent—without threatening national security.

Near-term savings of 20-25 percent should be seen as minimal. Although the FY93 request is down nine percent from FY92, the dramatic decline in the need for DOE's military products makes further cuts imperative. Budget reductions should include:

- \$466 million from weapons Research, Development, and Testing, including a 50% cut in Weapons Development activities and a 25% reduction in the Technology Base;
- \$357 million from Weapons Production, including a 50% reduction in the weapons Production and Support budget.
- \$597 million from Nuclear Materials Production, including a 50% reduction in the reactor operations budget of the Savannah River K-reactor;
- \$254 million from the New Production Reactor program.

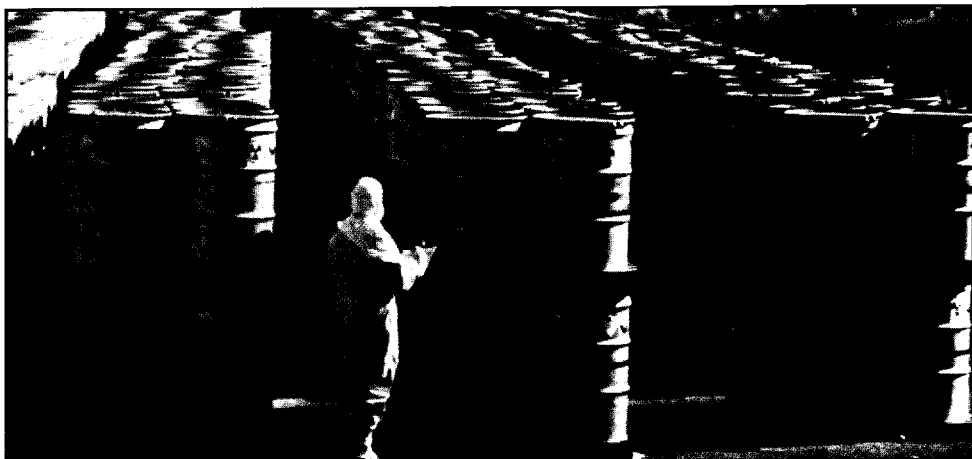
GAINING PUBLIC TRUST

DOE Secretary Watkins complains about the "litigious mischief" of states and citizens groups. He apparently fails to understand that lawsuits are almost inevitable in a program with serious compliance problems and virtually no public credibility. The courtroom is often the only place where citizens can influence DOE decisions. The efforts of grassroots and national citizens groups will continue to be essential. The Department of Energy should learn to cooperate.

A lack of public confidence in DOE's nuclear programs hinders post-Cold War work such as cleaning up the Complex. DOE must be pushed to acknowledge its past record, eliminate unnecessary secrecy, allow meaningful public participation, and deal fairly with independent experts. The federal government should also recognize the harm caused by pushing misguided legislation such as bills to override state regulatory authority in order to force Nevada to accept a waste dump.

Complex workers, concerned about potential job losses associated with ending production, have often viewed peace and environmental activists as their enemies. To make matters worse, contractors and DOE officials have exploited this animosity. However, plant workers and environmentalists do have common interests and should work on joint proposals for the future of the Complex.

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Dangerous radioactive materials are stored in barrels at Hanford.

The short-term economic effects of shutting down an obsolete industry will tempt politicians to maintain point-less funding in order to minimize controversy. However, working in the national interest can be compatible with making the peacetime transition as smooth as possible. Elected leaders must be willing to articulate the benefits of getting over the country's nuclear weapons complex: reducing the environmental and health hazards of bomb production; freeing resources to improve life for everyone; easing the threats of nuclear proliferation and terrorism; and creating a stronger, more open democracy.

CITIZEN INVOLVEMENT: Needed as Much as Ever

Massive spending, excessive secrecy, and conflict of interest have produced irrational policy, disregard for the public, lawlessness, and colossal waste (in both senses of the word). Although on a less devastating scale than the economic, social, and environmental catastrophes of the Soviet Union, the U.S. nuclear weapons industry has failed in similar ways. Both cases illustrate what happens when citizens are excluded from policy decisions.

On the other hand, informed opposition from national and grassroots groups helped end atmospheric testing, block construction of new plants, and prevent the manufacture of thousands of useless weapons during the past five years.

The Cold War is over, but the battle to curb DOE's

wasteful and dangerous activities continues. Official U.S. policy has not adapted to the real security threat of nuclear weapon proliferation. The government has yet to indicate that it can handle conversion to peacetime work or the enormous job of cleanup and waste disposal. Here are some ways for citizens to make themselves heard:

- **Become informed.** The endnotes of *FACING REALITY* give references to many published sources. Information can also be obtained from contributors to the report.
- **Work with others.** Through alliances such as the Military Production Network, grassroots organizations can learn about each others' problems and avoid "not in my backyard" tactics that could allow DOE to pit communities against each other. Sound policy requires that local concerns be seen in a national context.
- **Question the cult of secrecy.** A massively expanded classification system now pervades nearly all aspects of federal policy, with costly and often absurd results.¹⁸ The end of the Cold War was not enough to bring reform—citizens must demand a real overhaul.
- **Watch the watchdogs.** The Congressional committees charged with executive agency oversight all too often endorse agency plans—especially big-ticket and secret military ones—with little skepticism. Voters should pressure their representatives to be more responsible.

This is no time for complacency. The arms race may be over, but it is still too much business as usual for the nuclear weapons industry. Only sustained citizen pressure can ensure that the changes recommended in this report become reality.

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ENDNOTES

1. Among the best studies of U.S. and former Soviet nuclear overkill: Desmond Ball and Robert C. Toth, "Revising the SIOP," *International Security*, Spring 1990.
2. *Complex Cleanup: The Environmental Legacy of Nuclear Weapons Production*, Office of Technology Assessment, U.S. Congress, February 1991.
3. For example, radioactive emissions from the Hanford Reservation in Washington state exposed nearby residents to many thousands of times the "maximum safe level" set for atomic workers in the late 1940s.
4. For example, DOE's tritium production reactor restart effort consumed nearly \$3 billion by mid 1992, with only one reactor in limited operation. Four years earlier, officials had predicted that rehabilitating three reactors would cost \$250 million.
5. The General Accounting Office has estimated that cleaning up the weapons complex, combined with rebuilding it to DOE's specifications, could cost \$150 billion. Other official estimates are even higher.
6. R.L. Park, "Star Warriors on Sky Patrol," *New York Times*, March 25, 1992, page A23.
7. Arkin and Norris, "Tinynukes for Mini Minds," *Bulletin of the Atomic Scientists*, April 1992, page 24. Also, FY 1993 Congressional Budget Request, U.S. DOE, January, 1992, DOE/CR- 0006, page 34.
8. Abraham Szokc and Ralph W. Moir, "A Practical Route to Fusion Power," *Technology Review*, July 1991, page 21.
9. These include the Hypervelocity Aircraft Delivered Weapon; the strategic High Power Radio Frequency Weapon; low yield advanced electromagnetic radiation (EMR) weapons; weapons for use with stealth aircraft; and advanced earth penetrators for deeply buried targets.
10. International Physicians for the Prevention of Nuclear War and Institute for Energy and Environmental Research, *Radioactive Heaven and Earth*, 1991.
11. U.S. District Court Memorandum Opinion, Allen vs. USA, Civil No. C 79-0515-J, May 10, 1984. The AEC radiation safety committee's internal guidelines assumed that "any member of the general public may receive external exposure up to 25 rem [a measure of human exposure] without danger." Official U.S. standards for maximum annual radiation exposure allowed 0.5 rem for the general public in 1956, 0.17 rem by 1960.
12. Plutonium-239 and Uranium-235, the primary isotopes used in weapons, have half-lives of 24 thousand and 704 million years.
13. *Dead Reckoning: A Critical Review of the Department of Energy's Epidemiological Research*, Physicians for Social Responsibility, Washington, DC, 1992.
14. Integrated Data Base for 1991 (DOE/RW-0006, Rev. 7), October 1991. The waste contains more than a billion curies of radioactivity.
15. Arjun Makhijani and Scott Saleska, *High-level Dollars, Low-level Sense*, Apex Press, New York, 1992.
16. An isotope with a 25-year half-life would retain six percent of its radioactivity after 100 years.
17. Steven Aftergood, "The Perils of Government Secrecy," *Issues in Science and Technology*, Summer 1992. A highly recommended overview.
18. See note 17.

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