

WAND Take Action!

MOX: THE PLUTONIUM MENACE



**MOX in reactors doesn't
get rid of plutonium
—it just leads to more.**

Texas, Colorado, Washington, California, New Mexico and Idaho. Other materials will be shipped to, from, and through additional states. MOX would be shipped to reactors in North and South Carolina and possibly other states in the future. In other words, MOX would impact millions of us.

Why is it bad?

More Nuclear Waste: MOX creates plutonium-contaminated waste. The Savannah River Site already has 34 million gallons of highly radioactive liquid waste with no place to go.

More Risk: Reactors weren't designed for weapons MOX and it makes them more hazardous to operate. Worse, a severe accident at a MOX reactor would cause more cancer deaths than an accident involving regular uranium fuel.

Terrorist Threat: Before MOX is used in a reactor, the plutonium in the fuel can be fairly easily removed and used in a weapon.

More Plutonium: MOX encourages the production of plutonium. If the DOE builds a "weapons MOX" plant, the commercial nuclear industry will then use it to make "commercial MOX." (Congress has already proposed it.) But commercial MOX depends on making new plutonium and the process to make it creates massive amounts of liquid radioactive waste. So a program that was supposed to get rid of plutonium actually leads to more of it.

Plutonium, the key ingredient of nuclear bombs, is one of the most toxic substances ever made—even minute amounts can be lethal. Because it poses such extreme safety and health risks, plutonium should be isolated from people and the environment and handled in as safe a way as possible.

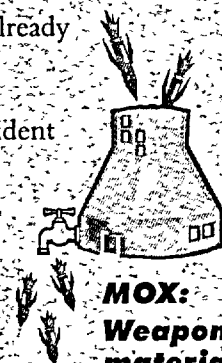
But the Department of Energy (DOE) has a dangerous plan to use it as a nuclear reactor fuel called "MOX," taking plutonium from dismantled nuclear weapons and using it in commercial reactors. The nuclear industry wants to follow suit by making new plutonium to turn into MOX fuel as well. **It's a bad idea that needs to be stopped.**

What is MOX?

MOX stands for "mixed oxide fuel" and is made from a mixture of plutonium and uranium. One type of MOX, that made with so-called "commercial" plutonium, is currently used in Europe. Another type, made from plutonium from weapons, is being proposed by the U.S. as a way to "get rid of" surplus military plutonium, but it's never been tried before and no reactor was designed to use it. Nor does it get rid of plutonium. The U.S. does not currently use either type, but "weapons MOX" would usher in both.

In Whose Backyard?

If the Department of Energy (DOE) gets its way, a plutonium fuel (MOX) factory would be built on the Georgia-South Carolina border at the Savannah River Site nuclear weapons facility. A plant to convert the plutonium from weapons form would also be built. Plutonium would be shipped there from



**MOX:
Weapons
material in,
weapons
material out**



WOMEN'S ACTION FOR NEW DIRECTIONS EDUCATION FUND

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Foundation, Turner Foundation, The John Merck Fund, Compton Foundation and The Sapelo Foundation for their support.

CREATING CHANGE:

What you can do to help WAND stop MOX!

Stay Informed! Sign up for WAND's MOX Bulletin Board. Contact: mox@wand.org.

Raise Your Voice! Contact your members of Congress and urge them to Stop MOX! Capitol switchboard: (202) 224-3121.

Tell a Friend! The public has been kept in the dark about MOX—Help us spread the word!

Get more information and learn more about this issue: Find fact sheets and helpful links at: www.nixmox.org.

Contact us: Pat Ortmeier, Field Director for Nuclear Issues, (406) 327-0785 or mox@wand.org.

Get Connected!

Great resources available
online
from WAND.



Check out WAND's website at www.wand.org.

Sign up for WAND's *Women Take Action! Bulletin Board*—a weekly email of news and information. Contact: membership@wand.org. For weekly updates on congressional issues, sign up for WAND's *Capitol Hill Action Alerts*. Contact wand@wand.org.

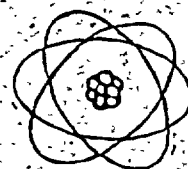
MOX leads to the production of plutonium, which creates millions of gallons of highly radioactive waste.



More Money: MOX means money and lots of it. It requires multiple facilities to create it, extra processing to purify it, modifications to reactors to burn it, special containers to ship it, extra security to store it, and subsidies to get nuclear utilities to use it. As of mid-2001, MOX was slated to cost taxpayers over \$3 billion.

A Better Idea

Plutonium can also be managed by immobilizing it, which produces less waste, is far cheaper and safer, and does not lead to more plutonium. With immobilization, the plutonium is converted into a ceramic puck to minimize the risk of its release into the environment, then embedded in highly radioactive glass to prevent theft. Unlike MOX, it can be used to handle *all* types of plutonium, thus saving money and reducing processing steps and worker exposure.



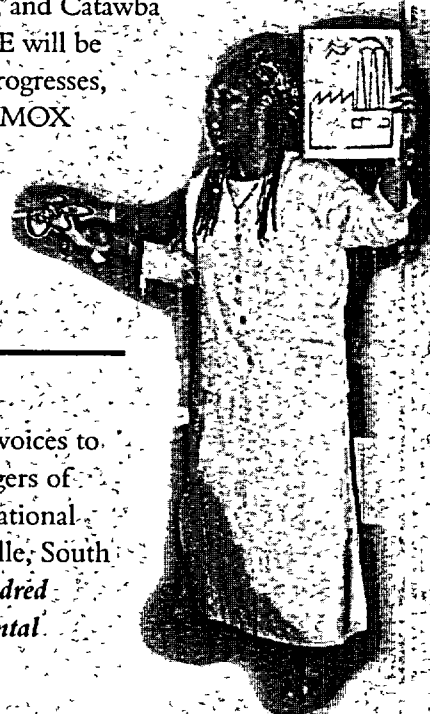
But in its rush toward MOX the DOE has all but abandoned this option. Funding has been cut to zero, researchers laid off, and construction contracts cancelled. Meanwhile the MOX budget has increased dramatically. More funding for immobilization and research into other non-MOX options for disposing of weapons plutonium is sorely needed.

Plutonium Fuel in a Reactor Near YOU?

Four reactors are currently slated for weapons MOX use. (Duke Energy's McGuire Units 1 and 2 in North Carolina, and Catawba Units 1 and 2 in South Carolina.) But DOE will be looking for more reactors if the program progresses, and bills in Congress calling for *commercial* MOX imply that it would be a good choice for *any* nuclear reactor. If you don't want plutonium fuel powering *your* home, stand up and say no to MOX!

Saying No to MOX!

WAND helps women raise their voices to educate the public about the dangers of plutonium, such as at the International Nix MOX Day event in Blacksville, South Carolina. Pictured here is Dr. Mildred McCain, Citizens for Environmental Justice, Savannah, GA.



Get Involved!

I am interested in being involved in WAND's work in the following ways:

___ WAND E-mail Network

Receive WAND e-mail bulletins and periodic e-mail actions from Capitol Hill, offering timely information and action opportunities.

___ Women Take Action on the Federal Budget

Work with WAND to bring a WTA federal budget briefing to your community.

___ WAND Chapters

Participate in the local WAND chapter in your community.

___ WiLL Lobby Corps

Work collaboratively with women state legislators on WAND and WiLL issues and activities.

___ Women Take Action for Real Security

Join this dynamic national education campaign, created in response to events on and following September 11th. Campaign materials and discussion guides are available.

___ Circle of Scribes

Write letters to the editor, helping to voice WAND's message. Tips and model letters are available.

___ The Pledge Program

Contribute to WAND's Pledge Program, sustaining projects and programs through regular monthly donations. Contributions vary in amount, and every gift is important.

___ STAND

Involve students in your community with WAND's work.

___ WAND PAC

Support progressive women candidates running for U.S. Congress.

Programs of WAND

WILL (Women Legislators' Lobby) is a multi-partisan network of women state legislators working to influence federal policy. One-third of all women state legislators are members of WILL, representing approximately 33 million constituents nationwide.

STAND (Students Take Action for New Directions) offers young women a community within WAND to address peace and justice issues in their schools and communities.

Partners are organizations working with WAND to channel excessive military spending toward unmet human and environmental needs and to address nuclear issues and violence against women. There are more than 600 WAND Partners in 33 states.

Membership Development facilitates the involvement of individual members in activities and programs WAND. WAND has members and supporters in every state.

Chapters sponsor community events, attend conferences and coalition meetings, write letters and op eds, and communicate WAND's message to elected officials.

WAND PAC, WAND's political action committee, supports progressive women candidates for the U.S. Congress who are members of WAND or WILL.

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Women.

Peace.

Power.



"The world is very alarming. It looks hopeless . . . The question is: How do you want to live out the days? Do you want to suffer through them or live joyfully, all the time doing this precious work to address the monumental problems we have?"

- Arlene Victor, co-founder of WAND's Metro Detroit chapter and president of WAND's Board of Directors 1993-1996

What We Do

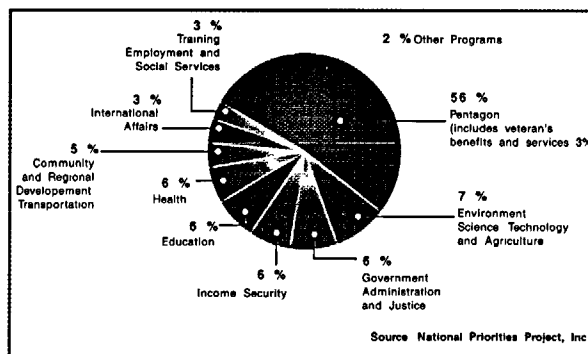
WAND empowers women to act politically to reduce violence and militarism, and redirect excessive military resources toward unmet human and environmental needs.

WAND's national network of progressive women legislators, community leaders, local activists, and students forms a powerful coalition reaching millions of women nationwide.

WAND works to:

- Empower women to act politically, encourage women's leadership and bring more women into the public policy arena to further WAND's goals;
- Eliminate the testing, production, sale and use of weapons of mass destruction;
- Clean up the environmental effects of nuclear weapons production;
- End the culture of violence in our society and prevent violence against women.

2003 Proposed Federal Discretionary Budget



The Cold War is over, yet the Pentagon continues to consume over half of all discretionary spending, while domestic programs are cut.

How We Do It

WAND works through:

- Local chapter activities and community forums
- Networking with partner organizations
- Interactive budget workshops
- Training in public speaking, lobbying, fundraising, media skills and organizing
- National conferences
- Utilizing local and national media
- Issue briefings for elected officials
- Connecting WAND members with elected officials
- Resolutions introduced by WiLL members in state legislatures nationwide

Electing Women To Congress

Of the 60 women serving in the 107th U.S. Congress, 32 were former WiLL or WAND members or other WAND-supported women. WAND and WiLL women in the 106th Congress voted progressively 90% of the time on issues of peace, the environment, children, women's health, and gun violence.

"It is important that we have moms in the United States Senate, and daughters and sisters, as well as dads. There's a different set of experiences that women bring that are important in decision making."

- U.S. Senator Debbie Stabenow (MI)

Join Us!

Be part of a powerful community leading our country to a secure future. You can make a difference!

Name _____

Address _____

City _____ State _____ Zip _____

Phone (____) _____ E-mail _____

How did you learn about WAND? _____

☐ I want to join WAND.

☐ I am a woman state legislator and want to join the Women Legislators' Lobby (WiLL).

☐ I am a high school or college student and want to join Students Take Action for New Directions (STAND).

☐ I would like to give a donation of support, \$_____.

☐ My organization may be interested in becoming a WAND Partner.

Organization _____

Contact _____

Phone/email _____

Membership Dues:

Membership dues are not tax deductible.

WAND values your membership. Suggested annual dues:

☐ \$35 (WAND and WiLL) ☐ \$5 (Students)

☐ Other amount \$_____

☐ Enclosed is my check payable to WAND in the amount of \$_____

-OR-

☐ Please bill \$_____ to my

☐ Visa ☐ Mastercard

Card # _____ Exp. Date _____

Signature _____

Please mail this panel with your check to:

WAND National Field Office
464 Cherokee Ave SE, Suite 201
Atlanta, GA 30312

Thank you and welcome to the WAND community!

PSR *monitor*

PHYSICIANS FOR SOCIAL RESPONSIBILITY

Plutonium Resolution

Dealing with the Legacy of Cold War Nuclear Weapons Production

After decades of building up their nuclear arsenals, the United States and Russia have begun to reduce the weapons in their stockpile, and to dismantle many of the warheads they retire. But dismantling nuclear weapons will not end the nuclear danger. As weapons are dismantled, the former adversaries are grappling with how to deal with "fissile materials" used to make these bombs — highly enriched uranium (HEU) and plutonium. Fissile materials from dismantled nuclear weapons combined with the already enormous global stockpiles of these elements present a multitude of very real dangers to international security including nuclear proliferation and terrorism. There is currently enough fissile material in the world to make 230,000 nuclear bombs.¹

In January 1994 President Bill Clinton and Russian President Boris Yeltsin declared their commitment to work together toward the goal of irreversible nuclear arms reductions and tasked their experts to jointly "study options for the long-term disposition of fissile materials,

particularly of plutonium, taking into account the issues of nonproliferation, environmental protection, safety, and technical and economic factors."² It was determined that the best way to deal with the building blocks of nuclear weapons is to change them into materials that can no longer be used for this purpose.

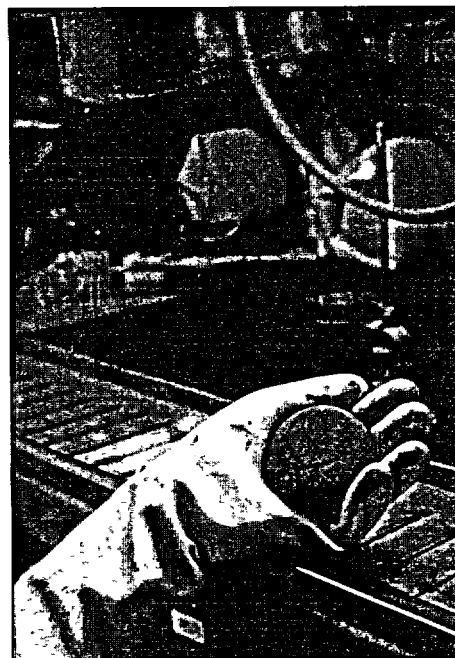
FISSILE MATERIALS: EFFECTS ON HEALTH AND THE ENVIRONMENT

Apart from proliferation risks posed by fissile materials, these toxic radioactive products have already harmed human health and the environment with impacts that will last for generations. The legacy of production and processing of plutonium and HEU can be seen at contaminated U.S. nuclear weapons complex sites and at similar facilities throughout the world. Increased cancers, birth defects and a myriad of other health impacts have been observed in workers and the surrounding communities at many of these sites.^{a,b} Even the Department of Energy (DOE) has admitted that weapons workers were put at risk during the mass production of nuclear bombs.^c

^a *Dead Reckoning* Physicians for Social Responsibility. Washington, 1992.

^b *Nuclear Wastelands* International Physicians for the Prevention of Nuclear War and The Institute for Energy and Environmental Research Washington 1995.

^c *Energy Department Issues Final Paducah Safety and Health Investigation Report* U.S. Department of Energy, February 10, 2000



Although it may look harmless, this small plutonium pit is enough to make a nuclear bomb.

The U.S. and Russia agreed to blend HEU into a low-enriched form. Once blended down, uranium cannot be used in nuclear weapons without being enriched.

Converting plutonium into a form not readily usable for nuclear weapons has proved more difficult. Only a few pounds of plutonium are needed for a nuclear bomb, and a mere speck can be devastating to human health. These dangers are compounded by the fact that plutonium will remain radioactive for thousands of years.

Continued on page 2

Inside this issue...

p 2 MOX VS. URANIUM FUEL

p 3 PLUTONIUM DISPOSITION
IN THE U.S.

p 4 WHY MOX IS A BAD IDEA

PLUTONIUM RESOLUTION

Continued from page 1

Despite the obvious security and economic concerns associated with plutonium, Russian policymakers have regarded it as a valuable energy and economic resource. Currently the U.S. and Russia are working in parallel to implement disposition of about 50 metric tons of plutonium each. This amount is considered "surplus to defense needs."³ Two approaches have evolved:

- 1) Mixing plutonium with uranium and making fuel for nuclear reactors. This is referred to as mixed oxide or MOX fuel.
- 2) Immobilizing plutonium by mixing it with molten glass or ceramic.

What is MOX?

Mixed oxide fuel or MOX is plutonium fuel that can be used in commercial nuclear reactors to generate electricity. MOX is created by combining plutonium oxide powder with uranium oxide which is later turned into fuel pellets. Most of the world's nuclear reactors currently operate on uranium fuel. The U.S. and Russia plan to begin fueling reactors with MOX fuel, made from weapons-grade plutonium. This has never been done before on a large scale.

MOX Fuel VS. Uranium Fuel

The experimental weapons-grade fuel that is proposed for use in commercial reactors is different than the uranium fuel usually used in the reactors. MOX fuel generates more high energy particles — increasing the heat of core temperatures and the rate of damage to key reactor parts. These differences are likely to make control and maintenance of reactors using weapons-grade MOX fuel more difficult, and they could also make reactor modifications necessary. Moreover

PLUTONIUM AND ITS EFFECTS ON HEALTH

Plutonium is a highly carcinogenic radioactive heavy metal. Only a few pounds of plutonium are needed to make a nuclear bomb. The stockpiles of plutonium in the world today are a result of military (building nuclear weapons) and commercial (generating nuclear power) nuclear programs of the last fifty years. While there are 15 different plutonium isotopes, weapons-grade plutonium is primarily made up of plutonium-239, which has a half-life of 24,000 years and remains hazardous for 240,000 years. (Half-life is the time it takes for half a given amount of radioactive material to decay away into other elements).

Plutonium-239 (Pu-239) emits primarily alpha radiation that does not penetrate the skin. Outside of the body Pu-239 is not as dangerous as some other radioactive elements, but it is uniquely deadly inside your body. Tiny particles of plutonium bombard cells with alpha radiation, causing chromosomal damage which may result in cancer and other chronic conditions. Most dangerous is inhalation of small particles of plutonium. Inhalation of as little as one one-hundredth of an ounce of plutonium can cause lung cancer with nearly 100% probability.^a Plutonium tends to attack the liver and attach to non-calcified areas of the bone, affecting blood formation. In addition to carcinogenic effects, plutonium is likely to disrupt reproductive cells, causing mutations passed on through future generations.

Plutonium is very hot and highly chemically reactive, posing health dangers in storage, handling and transport. For example, plutonium metal is flammable if exposed to air. Fire is especially dangerous because it converts plutonium into small airborne particles. Plutonium is highly fissionable which is why it is so valuable in the production of nuclear weapons.

^a S. Fetter and F. von Hippel: 1990. The hazard from plutonium dispersal by nuclear warhead accidents. *Science and Global Security* 2 21-41.

in the unlikely event of an accident at a MOX-fueled reactor, the public health consequences would be far more devastating. This is because MOX-fueled reactors contain greater quantities of hazardous radioisotopes, like plutonium, americium, and curium, than do plants using only uranium fuel. According to a recent Nuclear Control Institute study, an accident at a nuclear reactor using weapons-grade MOX fuel could cause 20-25 % more cancer deaths than a similar mishap at a uranium-fueled reactor.⁴

MOX fabrication is a hazardous process with handling and execution that exposes workers to many health risks. One such hazard is plutonium dust's tendency to stick to surfaces. This creates difficulties in accounting for missing plutonium. For example, at a Japanese pilot MOX fabrication plant in 1994 more than enough plutonium for

eight bombs was unaccounted for and even after spending \$100 million cleaning out the plant, at least one bomb's worth of plutonium is still missing.⁵

Another Way: Immobilization

Immobilization is the embedding of plutonium within the structure of a durable, solid material. The Department of Energy (DOE) plans to immobilize approximately 17 metric tons of plutonium, about one third of the declared surplus. This is the portion of plutonium that cannot be utilized as MOX: scrap metals, and other forms not suitable for MOX fabrication. However that which is slated for MOX is suitable for immobilization.

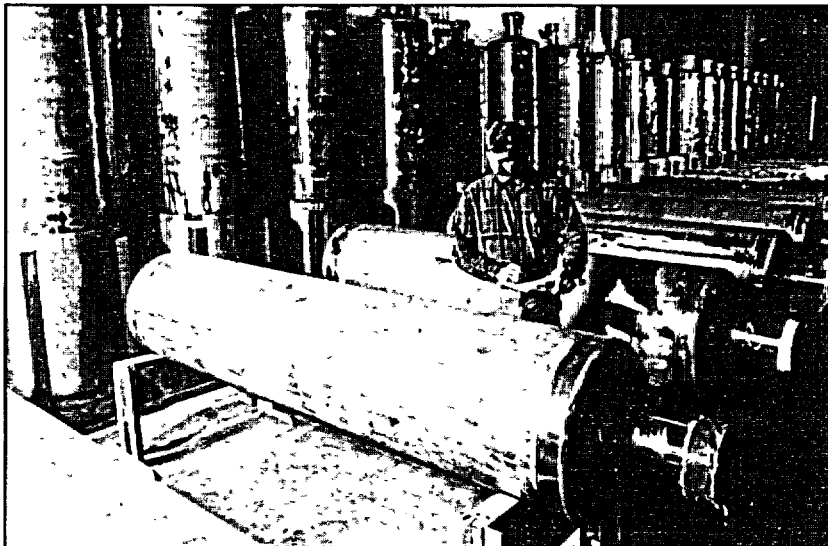
DOE's preferred method of immobilization is called the "Can in Canister" method. The plan calls for plutonium to be bonded in either ceramic or glass pucks and loaded

into small stainless steel cans. The cans would be put into large canisters 2 feet in diameter and 10 feet high. Canisters would be filled with molten glass containing high-level nuclear waste. This creates a radioactive barrier making the plutonium much less accessible to theft or diversion. The selected location for the immobilization facility is at the Savannah River Site (SRS) in South Carolina where the immobilization technology is already being employed to isolate high-level waste. DOE plans to store immobilized plutonium with similar high-level waste canisters at SRS and to eventually isolate it in a geologic repository.

Commercial/Civilian Reprocessing Programs

Reprocessing is the separation of fissile materials (plutonium and uranium) from spent fuel (fuel that has been used in a nuclear reactor). Reprocessing was an integral part of weapons production programs throughout the Cold War. The U.S. operated 14 reactors and 8 reprocessing plants to produce plutonium for nuclear weapons. The other nuclear weapons states — China, France, Russia,

and the United Kingdom — also began reprocessing to build their nuclear arsenals. Although reprocessing for nuclear weapons purposes is drawing to a close, civilian or commercial reprocessing programs — for the purpose of using plutonium as reactor fuel — have expanded. Britain, France, India, Japan and Russia all have gotten



An inspector examines empty storage canisters designed to isolate high-level waste. These same canisters will be used to immobilize plutonium in the United States.

involved in the civilian reprocessing business. Japan and Germany utilize reprocessing services of other countries (France and Britain) and have the plutonium MOX fuel returned home for use in their reactors. Controversial shipments of MOX fuel from Britain to Japan began last fall.⁶⁷

Generally, the intention of reprocessing programs is to separate plutonium that can be used in MOX fuel. The United States has a long-standing policy against reprocessing for obvious non-proliferation reasons, a policy that would be severely compromised by the MOX program. Commercial reprocessing programs encourage

the creation of a plutonium economy in which plutonium is regarded as a valuable commodity to be bought and sold on the world market. Plutonium programs have faced opposition in many communities near facilities and along transport routes. A U.S. decision to pursue MOX would revive dying and uneconomical plutonium programs on a global scale.

Plutonium Disposition In The U.S.

Currently the DOE intends to convert approximately 33 metric tons (mostly plutonium pits) of the U.S. "surplus" plutonium into MOX fuel for use in commercial nuclear reactors. The remaining surplus plutonium including residues and other forms not suitable for MOX will be immobilized in ceramic pucks. The DOE has contracted with a consortium of nuclear utility companies including Duke Power, Virginia Power, Cogema, and Stone and Webster, to carry out the MOX process. Because MOX will be used in commercial nuclear reactors, the Nuclear Regulatory Commission (NRC) will be responsible for licensing and regulating the reactors and the MOX fabrication facility.

Continued on page 4

WHY IMMOBILIZATION?

- **IMMOBILIZATION SENDS A CLEAR MESSAGE** to other countries that plutonium is a liability and should be treated as waste. It supports U.S. non-proliferation and anti-reprocessing policies.
- **AN IMMOBILIZATION PROGRAM WOULD LESSEN THE CAPITAL INVESTMENT** needed to dispose of surplus plutonium, as it is already necessary to immobilize much of the plutonium that cannot be made into MOX.
- **IMMOBILIZATION PROMOTES CLEAN-UP ACTIVITIES** by strengthening the clean-up infrastructure and advancing specific clean-up technologies for plutonium. MOX is a production activity. By pursuing an immobilization program the DOE would allow the Savannah River Plant in particular to focus on clean-up activities, rather than production activities.

PLUTONIUM RESOLUTIONS

Continued from page 3

The current plan calls for surplus military plutonium to be sent to the Savannah River Site (SRS) in South Carolina, for use in the fabrication of MOX fuel. SRS has also been chosen as the location for developing the immobilization facility.⁸

Once the plutonium pits arrive at SRS, it is likely that they will need to be stored for a period of time. Ultimately workers are to convert the pits into plutonium oxide and combine that with uranium oxide. The combined or mixed oxide is made into fuel pellets and placed into fuel rods for use in reactors. The MOX fuel is scheduled to be shipped to three commercial nuclear power sites (two reactors will be used at each site): North Anna Power Station in Louisa County, Virginia; McGuire Nuclear Station in Mecklenburg County, North Carolina; or Catawba Nuclear Station in York County, South Carolina. The plutonium in these shipments is more vulnerable to theft and diversion because it is easier to extract from fresh MOX than from spent nuclear fuel.

The U.S. DOE has declared it will pursue a parallel MOX program with Russia to encourage plutonium disposition efforts. This is based on the notion that Russia may not eliminate its plutonium stockpile at all if the United States implements only immobilization. Russia could decide to store its stockpile of weapons plutonium indefinitely, an outcome the United States should work to avoid.

Plutonium Disposition In Russia

The Russian government has deemed MOX a national treasure that will enable the country to meet future energy needs. Although use of plutonium fuel is favored by Minatom⁹, the program

faces many challenges and strong public opposition. While there are some pilot-scale MOX fabrication facilities, a larger, full-scale facility will be needed to carry out the proposed MOX program in Russia. There are 8 operating reactors that could potentially be used for MOX. Most of these reactors are old, pose safety concerns and could require expensive modifications. Russia would like to build new reactors, including breeder reactors¹⁰, which actually create more plutonium, but cannot possibly afford the expense. Other Russian plutonium processing facilities and breeder reactors have been stopped in the 1980's and 90's because of costs and public opposition.

Although Russian policy makers are resistant at this time to immobilization as a disposition option, the U.S. should encourage some use of immobilization in the hopes of expanding the Russian program.

In Russia the immobilization method could be carried out with less transport and fewer safety risks than MOX. It would be less expensive and take less time to complete. Although Russian policy makers are resistant at this time to immobilization as a disposition option, the U.S. should encourage some use of immobilization in the hopes of expanding the Russian program. This could be done by increasing funding for immobilization and by stepping up the U.S. program to immobilize plutonium.¹¹

U.S./Russian discussions have already begun on the bilateral plan for plutonium disposition. Both

WHY MOX IS A BAD IDEA

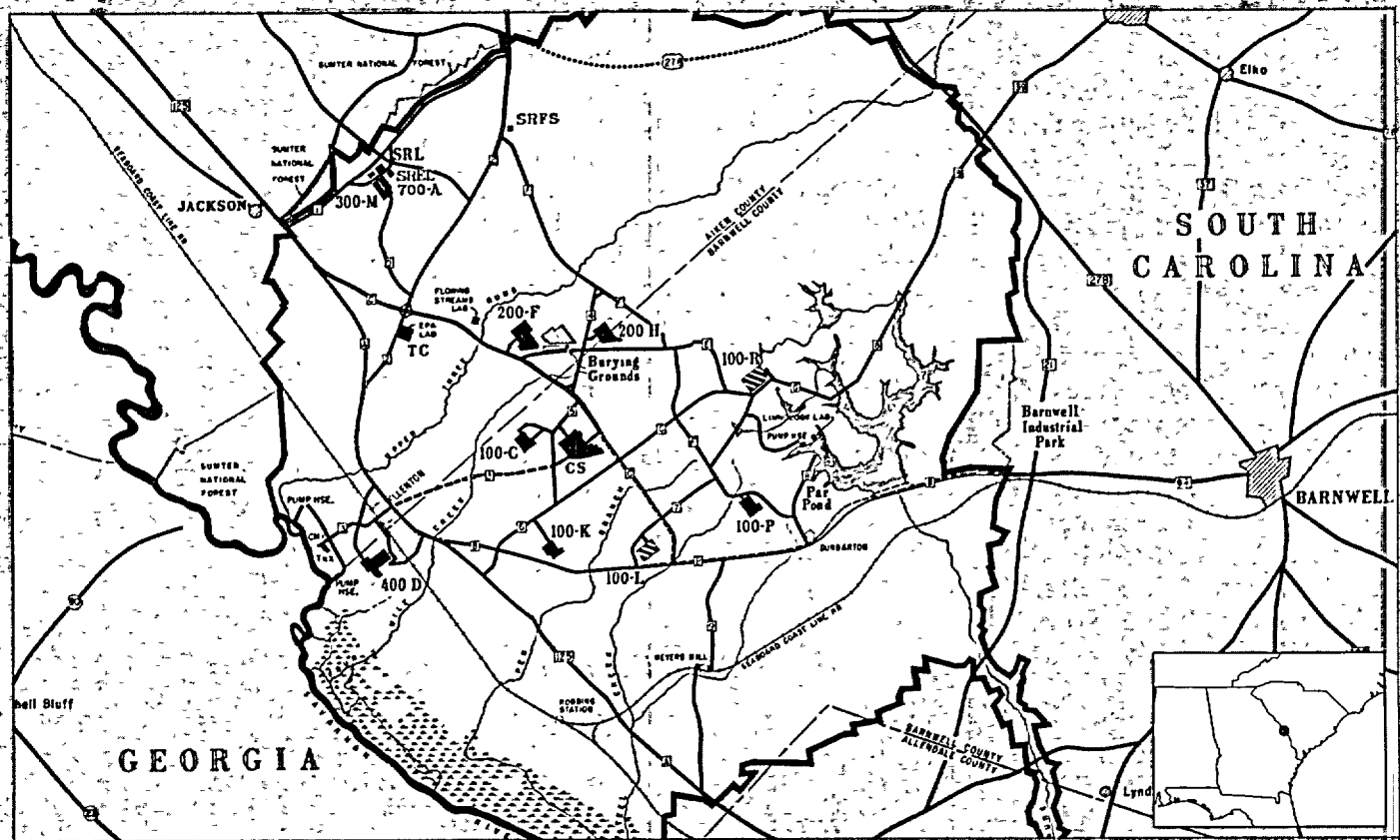
- **MOX IS A DANGEROUS PROLIFERATION RISK.** Use of MOX in the U.S. sends the wrong signal to Russia and the rest of the world: that the United States regards plutonium as a valuable energy source rather than a dangerous waste. A MOX program supports the infrastructure of plutonium fuel worldwide, which could lead to increased worldwide trade of plutonium and greater risks to international security, public health and the environment.
- **MOX USE IN THE UNITED STATES ENDANGERS PUBLIC HEALTH AND THE ENVIRONMENT.** Plutonium is so lethal that just a speck can cause cancer in humans. More transportation, handling and processing of plutonium fuel will be required for MOX, than with the immobilization option.
- **MOX FUEL IS SEVERAL TIMES MORE EXPENSIVE** than the standard low-enriched uranium fuel used widely in commercial reactors.
- **MOX IS NOT NEEDED OR WANTED.** Immobilization of high-level waste is now successfully underway at the Savannah River Plant in South Carolina. Immobilization can handle a wider variety of surplus plutonium forms (residues, oxides, metals, etc.), as compared to MOX. MOX and plutonium processing programs in the U.S., Europe, Japan and Canada have all faced strong opposition from local communities.^{a,b,c}

^a Statement of Non-Governmental Organizations on Plutonium Disposition, updated June 17, 1999

^b Don't Recycle Plutonium. *The Atlanta Constitution* Tuesday Dec 7, 1999.

^c Connor, Steve. Plutonium Must Go Back to UK, Say Japanese. *The Independent* 11 February 2000, London, p 4

SAVANNAH RIVER SITE, AIKEN, SOUTH CAROLINA



The DOE's Savannah River Site (SRS) encompasses 354 square miles located near Aiken, South Carolina on the Savannah River bordering Georgia. SRS was constructed in the early 1950s to produce basic materials used in nuclear weapons, primarily tritium and plutonium-239. Reprocessing in facilities, known as canyons, has been a major part of SRS operations over the years. These canyons remain operational.

Plutonium would be shipped from throughout DOE's weapons complex to SRS. Three major facilities will be constructed at SRS for both the plutonium immobilization and MOX plans.

¹ DOE Fact Sheet Surplus Plutonium Disposition Program, June 11, 1999

- 1) **Pit Disassembly and Conversion Facility:** to convert plutonium pits to oxides. Construction projected to begin in 2001, completed mid-2005, with operations beginning in 2006.
- 2) **Immobilization Facility:** Design projected to begin in 2000 with construction in 2002 and operations in 2006.
- 3) **MOX Fabrication Facility:** Beginning now with fuel development, testing and qualification. The Nuclear Regulatory Commission licensing process begins this year. Construction is scheduled for 2002. ** Construction will only proceed if there is "significant progress with Russia on plutonium disposition"¹

sides are clear that Russian progress is contingent upon funding from the U.S. to proceed. Congress appropriated in the fiscal year 2000 budget, \$200 million to be used for Russian expenditures related to the plutonium disposition agreement. ♦

¹ *The Challenges of Fissile Material Control* Washington Inst for Science and Intl Security Washington 1999, p. 1.

² Statement of U.S. President Bill Clinton and Russian President Boris Yeltsin on Nonproliferation of Weapons of Mass Destruction and The Means of Their Delivery, January 14, 1994

³ In 1995, the United States declared 50 metric tons of its 100 ton plutonium stockpile surplus. Russia has declared "up to" 50 metric tons of its 150 ton stockpile surplus.

⁴ Lyman, Ed. Public Health Consequences of Substituting Mixed Oxide Fuel for Uranium Fuel in Light Water Reactors. *Journal of Science and Global Security* Spring 2000

⁵ Astounding Discrepancy of 70 Kilograms of Plutonium Warrants Shutdown of Troubled Nuclear Fuel Plant in Japan. Washington Nuclear Control Institute, May 1994

⁶ KEPCO finds British firm fabricated MOX fuel data. *The Daily Yomiuri* 2 March 2000, Tokyo, p. 2

⁷ Connor, Steve. Plutonium Must Go Back to UK, Say Japanese. *The Independent* 11 February 2000, London, p. 4

⁸ Surplus Plutonium Disposition Final Draft Environmental Impact Statement (DOE/EIS-0283) Washington U.S. Department of Energy, November 1999

⁹ Minatom is the Ministry for Atomic Energy of the Russian Federation. Minatom is responsible for Russian nuclear weapons production, testing and disposal.

¹⁰ A breeder reactor is designed to produce more fissile material (plutonium) than it consumes. Use of these reactors undermines the stated goal of reducing the world's supply of surplus plutonium.

¹¹ Canning Plutonium Cheaper and Faster. *Bulletin of Atomic Scientists* May/June 1999

ACTION ALERT

The U.S. Must Take the Lead

Educate Congress and your Community about the Dangers of the MOX Program.

The United States and Russia are finally ready to deal with the products left over from the Cold War. The Department of Energy has publicly acknowledged that workers who handled these materials were put at risk. Everyone agrees that fissile materials present a problem that will last for thousands of years, however there is no consensus on the best strategy to lessen the danger.

At each step of the process, MOX poses hazards and costs that no government should accept. To pursue a large scale MOX fuel strategy would endanger public health and the environment for years to come. Plutonium is one of the most deadly substances known, and it remains radioactive for thousands of years. It should be safely isolated not turned into a commodity for the world market. MOX is not the answer. The U.S. is in a position to exercise strong leadership in developing and utilizing the immobilization

process for the disposition of plutonium worldwide. It is time for U.S. leaders to take decisive steps to protect future generations. It is time to say no to MOX.

What You Can Do

1 Educate Members of Congress about MOX. Write to your members of Congress and tell them why MOX is a bad idea. Let them know that the public does not support a project that would pose serious threats to security, public health and the environment. Urge them to support funding for immobilization efforts and to be critical of MOX funding proposals.

2 Raise awareness of the issue at the local level by speaking out at community forums or writing a letter to the editor of your local newspaper. Contact PSR National for further briefing materials or sample letters to the editor. Check out our website at www.psr.org.

Contact Information

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U.S. Senate
Washington, DC 20510
Capitol Switchboard: (202) 224-3121

or

[Your Representative]
U.S. House of Representatives
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6 ♦ PSR MONITOR

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