



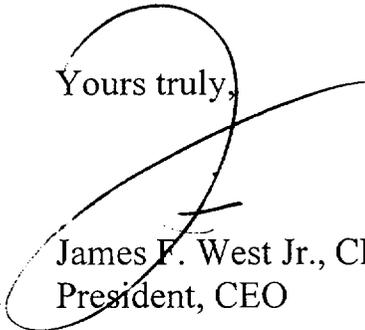
The Augusta Metro Chamber of Commerce and the businesses it represents recognize the Savannah River Site (SRS) as an outstanding community citizen that continuously demonstrates its commitment to employee, public and environmental safety. It has an unequalled history in safety and is always a leader in all safety categories.

The role of SRS in our national security through the production of materials used in our nuclear weapons cannot be overstated. It is only fitting that the Department of Energy (DOE) has chosen SRS as home of the Plutonium Disposition Program and is preparing to transport this nuclear material back to SRS for disposition in the Mixed Oxide Fuel Program.

As the overseer and approver of the MOX facility design, construction and operation, we believe the Nuclear Regulatory Commission will continue the great traditions of safety at SRS. Any risks, associated with this facility and program, are inherently low and acceptable especially when compared to those we readily accept in our daily lives. The importance of this mission to our national and international security is tremendous. The Augusta Metro Chamber is proud to be part of the community with SRS, and fully support the site and its missions.

Thank you for this opportunity to provide this input.

Yours truly,



James F. West Jr., CED  
President, CEO

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# City of Aiken

Post Office Box 1177  
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Fred B. Cavanaugh  
Mayor

## MOX Public Scoping Meeting

Mr. Chairman, my name is Fred Cavanaugh and I'm very fortunate to serve as the Mayor of the City of Aiken, the home of over 25,000 citizens and located close to the SRS. On behalf of our city council I welcome you to our community and thank you for holding this very important meeting to discuss the MOX project. We applaud you for soliciting public comment, be it support, questions or concerns.

I'm here tonight to voice my support for the MOX project. My hope and desire is that it will proceed without delay. To my knowledge, it is the best option for disposing of our nation's excess weapons grade plutonium.

As I think about the MOX project, I have to ask three (3) questions. First, is it needed? If we want to reduce the tremendous quantity of excess plutonium in the world and create a safer environment for civilization then the answer is yes. It's my understanding that Russia has agreed to use only the MOX process-and that is predicated on the expectation that the U.S. will also use the same process.

Second, does the technology and experience exist such that the MOX project can be constructed and operated safely and cost effectively? I think the answer is yes. For almost 50 years the employees of the Savannah River Site have played a major role in providing the defense materials needed to help win the Cold War – in many ways they have not been adequately recognized for the contributions they made. As a citizen of this great nation and Mayor of Aiken, I appreciate their dedication and commitment to the safekeeping of our country. We are equally proud of their safety record. Just recently, on March 26, the WSRC employees reached a significant safety milestone of 10 million hours worked without an injury resulting in time away from work. This Safety milestone marks the 5<sup>th</sup> time Westinghouse Savannah River Company employees have reached this milestone since 1989!

I think that with SRS's talented workforce in partnership with Duke, Cogema, Stone & Webster (DCS), they will safely convert the excess material into energy - making use of the excess plutonium by fabricating it into fuel for commercial reactors to produce electricity. In Europe, over 30 reactors are operating with MOX fuel. It is certainly not a new science, nor is it unproven. I have full confidence in the NRC and its oversight and approval role in this project.

And, third, is there community support for the MOX project? Based on the great community support over the years for the SRS in general, I would say yes. In my view, our community support is great because the SRS and employees have proven that the work at the site can be accomplished successfully and safely – not only from a physical standpoint, but environmentally also. Our communities know that the Site management and their employees are extremely safety conscious, and that gives us a good feeling about the safety of our citizens in our communities. The real proof lies in their performance over the years.

In summary, I'd like to close by saying that I moved to Aiken in 1953 and I know first hand of the safety attitude and performance at the SRS and the talented pool of employees. I am very concerned about the disposition of the excess weapons grade plutonium. We need to properly dispose of this material to insure that it doesn't get in the hands of terrorists and/or rogue nations. I urge you to support the approval of this process and its location at the SRS.

Again, thank you for providing this opportunity for comments.

A handwritten signature in black ink, appearing to read "Fred B. Cavanaugh". The signature is fluid and cursive, with a prominent initial "F" and a long, sweeping tail.

Fred B. Cavanaugh

April 17, 2001

STATEMENT ON MOX  
ENVIRONMENTAL IMPACT STATEMENT

MOX Public Scoping Meeting  
April 17, 2001

Good evening, ladies and/or gentlemen. I am pleased that you have allowed community feedback/input at your scoping meeting on the licensing of the MOX Fuel Fabrication Facility. My Name is David Walker and I am President of the Aiken Branch NAACP that is comprised of several hundred members. I fully support the MOX program as the best option for disposing of our surplus plutonium.

As a citizen of this community, I recognize that SRS is one of the safest facilities in the nuclear complex. This has been demonstrated by a long history of safety in the handling of plutonium. Based on this safe record and the experience at SRS and the technical experience and expertise of Duke-Cogema Stone & Webster consortium companies, we believe that the facility should operate with the highest degree of safety and environmental concern.

We support the MOX program and welcome the economic benefit that the project will bring to the Aiken area and SRS.

I wanted to take a few minutes to provide comments at this meeting. Should you need to contact me regarding questions, I have attached a telephone number to these comments. Again, thank you for the opportunity.

Rev. David Walker, President  
Aiken Branch NAACP  
803-502-0170



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## **STATEMENT ON MOX ENVIRONMENTAL IMPACT STATEMENT**

### **MOX Public Scoping Meeting April 17, 2001**

First, let me thank you for allowing us to comment at this scoping meeting. My name is Mal McKibben, and I am Executive Director of Citizens for Nuclear Technology Awareness (CNTA). CNTA is a grass-roots citizens group, the largest such group in the nation involved in pro-nuclear advocacy and public education. About 80% of our 2000 members have, or had, nuclear careers, but the other 20% are community leaders or private citizens in the Aiken/Augusta area.

We, and the communities we represent, fully support the MOX program as the best option for disposing of our surplus plutonium. We also believe NRC's announced licensing plan is appropriate. We are convinced that the safety and environmental effects of construction and operation of the MOX fuel fabrication facility will be very acceptable.

The citizens of this area recognize that the technologies to be used in this facility are decades old, and proven to be safe. In the U.S., tons of MOX fuel was manufactured with weapons grade plutonium, irradiated in test reactors, then examined. In Europe, at this time, over 30 reactors are operating with MOX fuel. Based on all that successful experience and the combined experience and expertise of the DCS consortium companies, and the decades of safe handling of plutonium at SRS, we believe that the facility should have an outstanding safety and environmental record. The final assurance of that is our confidence that NRC will conduct a thorough and rigorous investigation during the licensing process.

We have observed that most of the "issues" raised by the antinuclear community are simply not relevant to the NRC task. We commend NRC's balanced, and I want to assure you that CNTA can be counted on to provide factual and objective input to NRC during the licensing process.

Thank you.

**W. GREG RYBERG**  
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April 17, 2001

Mr. Richard A. Meserve  
Chairman, Nuclear Regulatory Commission  
One White Flat North  
11555 Rockville Pike  
Rockville, MD 20852-2738

Dear Chairman Meserve:

I appreciate the Nuclear Regulatory Commission holding this hearing in North Augusta on the Mixed Oxide (MOX) Fuel Fabrication Facility Project at the Savannah River Site (SRS). I want you to know that this community, as demonstrated at every meeting concerning the Plutonium Disposition Program, fully supports the project and program.

Since SRS produced much of the material, which will now be converted to MOX for disposition in the Duke Energy nuclear reactors, it is the right decision to have the MOX facility at SRS. This will build upon the excellent safety record established at SRS over the last 50 years and utilize the experience and expertise there. I commend the Department of Energy on this decision.

SRS continues to be an excellent community citizen. Those of us who know and understand its missions fully support the site, its employees and its programs. The SRS has the most capable staff of employees who are unwavering when it comes to the safe handling of nuclear materials. Our daily life involves risk. These risks often expose us to more risk than the operation carried out at the SRS. Those that fight against MOX and the SRS are not from the community and are unfamiliar with our long-standing operation of a safe nuclear facility.

The NRC is new to SRS and I encourage you to listen to those of us who have lived in this community for quite some time and who will continue to live in this community into the future. As stated earlier, our acceptance and support for SRS and the Plutonium Disposition Program are unwavering.

Thank you for this opportunity to provide input.

Sincerely,

A handwritten signature in cursive script, appearing to read "W. Greg Ryberg".  
W. Greg Ryberg  
Senate District 24



## House of Representatives

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April 17, 2001

Dr. Richard A. Meserve, Chairman  
U.S. Nuclear Regulatory Commission  
One White Flint North  
11555 Rockville Pike  
Rockville, MD 20852-2738

Dear Mr. Meserve:

As a Georgia State Representative and resident of Augusta, Georgia, I would like to express my support for the Savannah River Site (SRS) and the Mixed Oxide (MOX) Fuel Fabrication Facility to be located there.

The importance of the plutonium disposition program to our national and international security under which the MOX fuel mission lies can not be over emphasized. The fact that SRS produced and processed much of the plutonium used in our weapons gives them the experience and expertise to handle this new mission. The Department of Energy locating it there was the right decision. The historical record of safety excellence at SRS serves as more evidence that the decision was correct for our nation. The involvement of the Nuclear Regulatory Commission in its oversight and approval role relative to the MOX facility will make this great safety record even greater.

I and this community fully support SRS and the MOX fuel mission. Any opposition to MOX Fuel and SRS will come from outside this community. We know that plutonium can be safely handled and processed, and based on the excellent record of the Department of Energy, can be transported safely and securely. Any actual risks are minimal and acceptable. The NRC study on the risk of transporting spent fuel certainly validates this position. I ask that the EIS for this project accurately reflect the support of this community.

I appreciate the Nuclear Regulatory Commission holding the public hearing in North Augusta and allowing me the opportunity to voice my support.

Sincerely,

Representative Sue Burmeister

LINDSEY GRAHAM  
3C DISTRICT, SOUTH CAROLINA

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JUDICIARY COMMITTEE

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Congress of the United States  
House of Representatives  
Washington, DC 20515-4003

April 17, 2001

Richard A. Meserve  
Chairman  
Nuclear Regulatory Commission  
2120 L St NW  
Washington, DC 20003

Dear Chairman Meserve,

I regret that I will be unable to attend either of your public hearings on the Department of Energy's Excess Weapons Material Disposition Program. This program is of critical importance to the nation as a means of eliminating the threat that excess weapons grade material poses, to the region as an economic driver, and to the Savannah River Site (SRS) as a final disposition for its stores of plutonium. I believe that this program represents the ultimate example of "turning swords into plowshares," and feel that the European model of MOX production proves that this program can be run with minimal impact on the environment.

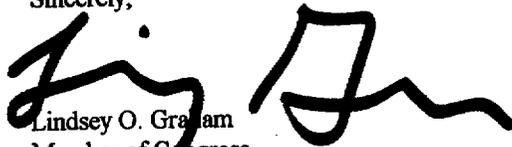
I have strongly advocated for this program since first becoming acquainted with it as a freshman congressman in 1995. It takes billions and billions of dollars in infrastructure to build the facilities capable of manufacturing these materials, but frankly it takes only one good thief or one crooked general to steal enough material to build a weapon. With the limited safeguards and security given these materials in Russia and the dismal economic situation there, I believe any reasonable person looking at this issue would agree with the National Academy of Sciences and the Center for Strategic and International Studies, both of whom found these materials in Russia to be a "clear and present danger" to the United States. The American program is important to bring our Russian counterparts along, but it is also important to the long term environmental remediation program at the Savannah River Site.

The Savannah River Site as you are aware is scheduled to begin accepting plutonium laced materials and plutonium pits from the Rocky Flats Facility in Colorado beginning this summer. MOX plays an important role in the disposition strategy for those materials. Without MOX, SRS may become a long term storage facility for plutonium, a scenario that neither the congressional delegation nor the State's government supports.

We know that MOX can be done safely as the European record shows. I am confident that you and the commission will make a full study of the impacts of the Plutonium Disposition Program and its requisite facilities, and in the final analysis you will approve the licensure and construction of these important facilities.

Again, I apologize for not being available in person and thank you for your time.

Sincerely,

  
Lindsey O. Graham  
Member of Congress

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Comments at Public Meeting April 17, 2001 to the Nuclear Regulatory Commission

My name is Lark Jones. I am a practicing attorney and the Mayor of North Augusta, South Carolina. I have resided here my entire life which is now in excess of 51 years. I was here before the Savannah River Site was built, I know the Site will be here long after I am gone.

I come here tonight, individually and on behalf of my City, to tell you that our community fully supports MOX fuel missions at SRS. Recent problems associated with electricity shortages in California and other states, as well as the dramatic price increases in petroleum products have created a new awareness for the need for alternative energy sources. I believe that SRS has capable leadership, employees and if given the resources and authority, can successfully manage and handle the MOX fuels mission. Such missions, when successfully managed, could lead the way to new and better energy technologies.

While I am not intimately knowledgeable of all the nuances of the nuclear industry, I can tell you that the communities in this area have confidence in the Site, respect its work and safety record. I am confident, the CSRA will welcome and support any mission given to it.

A few months ago, SRS celebrated its 50<sup>th</sup> anniversary, I was pleased to be present at a number of events. Much was made of the heroism of local persons who were moved from their homes to allow construction of the site. I also learned step by step how the first nuclear device was built and how the group known as the Manhattan Project were heroes as well. These persons as well as thousands of SRS employees have created a legacy of service and patriotism that still exists today.

The nuclear industry of the past has created responsibilities and obligations for the future. What better way to solve those problems and fulfill those responsibilities than positive action. Now is the time, SRS is the place, our community is ready to support this mission.

Thank you,



Lark W. Jones



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## **STATEMENT ON MOX ENVIRONMENTAL IMPACT STATEMENT**

### **MOX Public Scoping Meeting April 17, 2001**

First, let me thank you for allowing us to comment at this scoping meeting. My name is Mal McKibben, and I am Executive Director of Citizens for Nuclear Technology Awareness (CNTA). CNTA is a grass-roots citizens group, the largest such group in the nation involved in pro-nuclear advocacy and public education. About 80% of our 2000 members have, or had, nuclear careers, but the other 20% are community leaders or private citizens in the Aiken/Augusta area.

We, and the communities we represent, fully support the MOX program as the best option for disposing of our surplus plutonium. We also believe NRC's announced licensing plan is appropriate. We are convinced that the safety and environmental effects of construction and operation of the MOX fuel fabrication facility will be very acceptable.

The citizens of this area recognize that the technologies to be used in this facility are decades old, and proven to be safe. In the U.S., tons of MOX fuel was manufactured with weapons grade plutonium, irradiated in test reactors, then examined. In Europe, at this time, over 30 reactors are operating with MOX fuel. Based on all that successful experience and the combined experience and expertise of the DCS consortium companies, and the decades of safe handling of plutonium at SRS, we believe that the facility should have an outstanding safety and environmental record. The final assurance of that is our confidence that NRC will conduct a thorough and rigorous investigation during the licensing process.

We have observed that most of the "issues" raised by the antinuclear community are simply not relevant to the NRC task. We commend NRC's balanced, and I want to assure you that CNTA can be counted on to provide factual and objective input to NRC during the licensing process.

Thank you.

# BLUE RIDGE ENVIRONMENTAL DEFENSE LEAGUE

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www.BREDL.org ~ PO Box 88 Glendale Springs, North Carolina 28629 ~ Phone (336) 982-2691 ~ Fax (336) 982-2954 ~ BREDL@skybest.com

## **Comments of Janet Marsh Zeller to the Nuclear Regulatory Commission Scoping Meeting on a Mixed Oxide Fuel Fabrication Facility North Augusta, South Carolina**

April 17, 2001

My name is Janet Zeller. I am Executive Director of the Blue Ridge Environmental Defense League, a league of community groups dedicated to environmental justice and democracy and to public health protection. We have six offices including Aiken, SC and Charlotte, NC.

Before outlining specific recommendations for plutonium fuel factory scoping, I present some vital project overviews:

**1) Supplemental EIS.** The Blue Ridge Environmental Defense League has asked that the US Department of Energy complete a supplemental Environmental Impact Statement before the plutonium fuel factory program proceeds. The people of North and South Carolina have a moving target--a project that changes dramatically and frequently with Duke, Cogema, Stone & Webster submitting changes with DOE failing to conduct adequate reviews and assessments. Blue Ridge Environmental Defense League formally requests that the US NRC require a Supplemental EIS.

**2) Independent Audit.** The entire history of the NRC demonstrates the Commission's close ties with nuclear utilities, its regulated community. Chairman Richard Meserve's February 2001 letter to Vice President Cheney carves out an expanded role for NRC in the promotion of new nuclear power plants. The Meserve letter lays out plans for NRC activism in limiting nuclear industry liability and eliminating regulatory obstacles. Coupled with the level of secrecy infused in the plutonium fuel project, the less than independent picture which the Chairman paints of the NRC leaves the public with no one to trust.

By itself, the NRC cannot conduct an independent licensing procedure. On behalf of the Blue Ridge Environmental Defense League Board of Directors, I request that NRC seek an independent project audit from a special ad hoc commission. We recommend that this independent review follow the pattern outlined by the National Resource Council in its March 1998 report advocating

*One person speaking alone may not be heard,  
but many people speaking with one voice cannot be ignored.*

Comments of Janet Marsh Zeller  
North Augusta, SC  
April 17, 2001  
Page 2

independent review of DOE's plutonium project. This independent project audit is a prerequisite for scoping and the independent commission should have a continuing role if the plutonium fuel project proceeds.

**3) Full EPA Regulatory Role.** Both scientific integrity and public confidence require that NRC welcome the full regulatory role for the US Environmental Protection Agency in the plutonium fuel project. That a private consortium plans to construct and operate the fuel factory is enough justification for full EPA involvement. The people of the southeast need the health based standards and the water and air protection which EPA regulations and enforcement would provide. One-in-a-million South Carolinians dying from plutonium fuel factory exposures instead of one-in-ten-thousand or one-in-a-hundred is not too much to ask.

**4) Separate reactors scoping.** We are grateful to the NRC for scheduling the May 8 scoping meeting in Charlotte and for the recognition that the proposed plutonium fuel factory has offsite impacts in the reactor communities near Catawba and McGuire. However, the Charlotte meeting must not replace or curtail a full NRC scoping process on the proposed use of plutonium at the Duke reactors. The Charlotte scoping meeting should be used to address the effects of the fuel factory only.

Scoping for the proposed DCS plutonium fuel factory should include but not be limited to the following:

1) The NRC must evaluate immobilization and any other alternative for plutonium fuel disposition. The DOE has abrogated its responsibility by producing a flawed EIS. NRC must provide a detailed assessment of the risks and benefits of each alternative.

2) The NRC must conduct a comprehensive analysis of the immediate and long term effects of the unprecedented dual nature of the fuel factory project. The regulatory entanglements and the multiple jurisdictions of the NRC regulating a private facility at the publicly-owned DOE regulated Savannah River Site creates a nightmare of agency responsibilities which may result in inadequate government oversight.

*One person speaking alone may not be heard,  
but many people speaking with one voice cannot be ignored.*

Comments of Janet Marsh Zeller  
North Augusta, SC  
April 17, 2001  
Page 3

3) The NRC must evaluate the harm to the public caused by project secrecy including detailed rationales behind granting DCS requests for labeling pertinent technical information *proprietary*. NRC should evaluate both the diminution of the public's right to know and the barriers to full public review.

4) The NRC must produce detailed accident scenarios and their environmental and health consequences. DOE has abrogated this responsibility especially with regard to high activity nuclear waste.

5) The NRC must include a clear and complete assessment of the plutonium fuel factory and foreign and domestic terrorism. Again the DOE has failed to do a full EIS.

6) The NRC must evaluate the offsite impacts for transportation corridor communities and reactor communities of the plutonium fuel factory. This assessment should include political and financial pressures for reactor plutonium fuel licensing which the existence of an operating plutonium fuel factory would pose.

7) NRC should evaluate the harm to American ratepayers and other electric utilities of subsidizing Duke Energy in a partially deregulated economy. NRC should evaluate the effects of yet another taxpayer subsidy for nuclear power in preference to other types of energy production.

*One person speaking alone may not be heard,  
but many people speaking with one voice cannot be ignored.*

# BLUE RIDGE ENVIRONMENTAL DEFENSE LEAGUE

PO Box 88 ~ Glendale Springs, North Carolina 28629 ~ Phone (336) 982-2691 ~ Fax (336) 982-2954 ~ Email: BREDL@skybest.com

## Comments of Louis A. Zeller before the Nuclear Regulatory Commission Scoping Meeting on a Mixed Oxide Fuel Fabrication Facility North Augusta, South Carolina April 17, 2001

My name is Louis Zeller and I am Coordinator of the Blue Ridge Environmental Defense League Southern Anti-plutonium Campaign. I appreciate this opportunity to provide information to the Nuclear Regulatory Commission.

To be perfectly clear, The Blue Ridge Environmental Defense League opposes the use of plutonium fuel in commercial nuclear power reactors. While we support the goal of putting plutonium into non-weapons usable form, we believe that the use of plutonium as a reactor fuel is wrong for environmental, economic, public health, and national security reasons. However, we do recommend that the NRC consider the following.

**The Nuclear Regulatory Commission must evaluate the international implications of a plutonium fuel factory.** We do not believe that the new facilities proposed for SRS serve only disarmament and non-proliferation goals; some could be used for either civilian and military purposes. For example, chemical processing facilities for plutonium fuel can also be used to make plutonium pits for nuclear weapons. The surplus plutonium fuel project is a joint venture of the United States and Russia. Statements by both governments indicate they have plans to build new weapons facilities even as they speak of disarmament. By encouraging a plutonium economy in Russia and the United States, the plutonium fuel program undermines international agreements for nuclear non-proliferation.

Plutonium fuel facility licensing should not be confined to technical issues alone. Any decision by the Nuclear Regulatory Commission to approve this project would have profound impacts on the environment, on nuclear non-proliferation and disarmament, and on energy policy for many decades. Also, whether this project flies or fails depends on the cooperation of the Russian people and their government. Therefore, before making any decision, we request that NRC conduct a thorough investigation into the global impacts of the entire project. As this decision will have far-reaching effects on the nations of the world, this investigation should include many opportunities for public hearings and other types of public input, both here and abroad.

**The Duke Cogema Stone and Webster (DCS) plutonium factory license application is fatally flawed and should be rejected.** We call upon NRC to halt the plutonium fuel facility project because of the massively increased estimates in liquid radioactive waste generation during plutonium purification operations and the failure of Duke Cogema Stone and Webster (DCS) to formulate a plan for treating and disposing of the waste. DOE officials have reported that the agency anticipates a number of changes of this magnitude during the design phase of the project. This explanation is insufficient. DOE has overlooked the contractual obligations under

which Duke, Cogema, Stone and Webster have to manage all radioactive waste; NRC simply cannot look the other way. At a minimum, NRC should require DOE to complete a supplemental Environmental Impact Statement before proceeding with the project. Also, Blue Ridge Environmental Defense League advocates reallocating hundreds of millions of dollars to restore funding for plutonium storage and immobilization.

- ⊗ We hereby request that the NRC reject DCS' Construction Authorization Request for the following reasons:
1. DCS is attempting to evade NRC oversight of the radioactive waste management;
  2. DCS justified its failure to submit an emergency management plan by claiming that the public radiation dose during a major accident would be within regulatory limits--even though the regulatory limits are 5-6 times greater than the average annual "background" radiation dose;
  3. DCS based its application on the environmental compliance history of Savannah River Site, not on its own environmental record;
  4. The plutonium fuel factory has no licensed customers for its product;
  5. DCS submitted a financial report to the NRC for Fiscal Year 1999 but has yet to submit a financial report for Fiscal year 2000.

**NRC should evaluate the impact of existing radioactive contamination at SRS on the plutonium fuel project.** Millions of gallons of high level liquid radioactive waste are stored at SRS awaiting solidification. The 50 to 100 million curies of tritium which were released through air pollution stacks over the decades continue to fall back to earth as radioactive tritiated water, contaminating the region's well-water and agricultural products.

The Defense Nuclear Facilities Safety Board (DNFSB) has already identified several technical problems at SRS:

- Its failure to stabilize the 4000 pounds of plutonium metals, oxides, and residues in a manner that meets long-term plutonium storage criteria;
- The refusal to call highly enriched uranium in volatile solutions a waste product;
- A shortage of places to store high level liquid waste--resulting in an effort to pour more waste into leaking 1950's era waste tanks

#### **NRC Should Investigate DOE's Inaccuracies about Plutonium Purification Plant.**

According to a report by Blue Ridge Environmental Defense League's SRS Project Coordinator Don Moniak, the major issue raised was the massive increase in radioactive liquid waste to be generated during "plutonium polishing" operations in the plutonium fuel factory. "Plutonium oxide polishing" is the public relations term for the chemical purification of plutonium powder, using silver nitrate and nitric and oxalic acids, in order to strip away unwanted impurities like gallium, highly enriched uranium, and highly radioactive americium. DOE reported only 130 gallons of liquid transuranic waste in November 1999, but its contractor, Duke-Cogema-Stone and Webster, estimated 89,000 gallons a year of "high activity liquid alpha radioactive waste" in December 2000, and another 214,000 gallons a year of "low-level waste." Much of the high alpha activity waste would be laced with dangerous amounts of intensely radioactive Americium, and all of it is considered a new waste form never handled before at SRS. The Nuclear

Regulatory Commission must consider the full impact of these changes. NRC cannot allow DCS attempt to use a shell game to evade oversight by shifting the waste problem to another SRS facility.

**NRC Should Compete A Full Financial Review of Plutonium Fuel Program.** A full financial accounting of the plutonium fuel project must be completed and submitted to public review. A July 28, 2000 letter from the Director of Nuclear Regulatory Research at the Nuclear Regulatory Commission to the President of the American Nuclear Society described a \$280 billion Advanced Transmutation of Waste project. NRC's review should include the billions of dollars for plutonium fuel facilities, and the long term plans for a \$280 billion waste transmutation project which looms as a nuclear phoenix rising from the radioactive ashes of SRS. !

^ **The DOE National Nuclear Security Administration Is the Wrong Agency for a Civilian Nuclear Fuel Program.** NRC should re-evaluate the reversal of a twenty-five year policy prohibiting the use of plutonium in reactors would put a strategically valuable and dangerous material which is now in the hands the armed forces under the control of electric utilities. In 1999 Congress enacted the National Nuclear Security Administration Act which created a new DOE agency with the following mission (emphasis added):

TITLE XXXII-- NATIONAL NUCLEAR SECURITY ADMINISTRATION  
SEC. 3215. DEPUTY ADMINISTRATOR FOR DEFENSE NUCLEAR  
NONPROLIFERATION. (a) In General.--There is in the Administration a Deputy  
Administrator for Defense Nuclear Nonproliferation, who is appointed by the  
President, by and with the advice and consent of the Senate. (b) Duties.--Subject  
to the authority, direction, and control of the Administrator, the Deputy  
Administrator for Defense Nuclear Nonproliferation shall perform such duties and  
exercise such powers as the Administrator may prescribe, including the following:  
(1) Preventing the spread of materials, technology, and expertise relating to  
weapons of mass destruction. (2) Detecting the proliferation of weapons of mass  
destruction worldwide. (3) *Eliminating inventories of surplus fissile materials  
usable for nuclear weapons.* (4) Providing for international nuclear safety.

The nuclear weapons production complex under NNSA consists of Savannah River Site Tritium Production and site for a DOE/NNSA

- Plutonium (MOX) Fuel fabrication factory
- Plutonium pit disassembly and conversion plant
- Plutonium immobilization plant
- Highly Enriched Uranium downblending plant for HEU at SRS;
- Industrial scale plutonium pit production/fabrication capability (100-500 new pits/year starting sometime after 2010 or so).

However, the use of plutonium oxide fuel in commercial power reactors will not significantly reduce the amount of plutonium. Nuclear reactors produce plutonium where none existed before. A typical commercial reactor produces 500 pounds of plutonium a year. Government contractors have estimated that using plutonium oxide in commercial reactors would reduce the total plutonium by only 1%.

- ✘ Furthermore, plutonium oxide fuel would be a valuable target. The secrecy and defense measures which the military uses to transport plutonium would have to be duplicated by every domestic utility company using plutonium fuel. Also, the transport of the plutonium fuel to reactor sites would add to the risk of accidental release of radiation.
- ✘ In the 1970's the United States rejected plutonium fuel and breeder reactors because of the environmental and proliferation dangers. Throughout the administrations of Presidents Ford, Carter, Reagan, and Bush, the policy of the Federal Government banned the use of plutonium in commercial nuclear power plants due to the risk that the plutonium could be diverted to terrorists and to nations that have not renounced the use of nuclear weapons.
- ✓ In the 21<sup>st</sup> Century we face a new and more complex international security picture. What the United States decides both to do and not to do with dismantled warheads will affect international stability far into the next century. Plutonium fueled reactors and other technologies which combine military and domestic uses of fissionable materials would create an impossibly complicated proliferation puzzle.

**MOX FUEL HEARING**  
**Comments by Mayor Bob Young**  
**April 17, 2001**

Good Evening.

I am Bob Young, Mayor of Augusta.. I come this evening both as the chief elected official of a city of 200,000 people and as a long-time member of this community.

Those of us who know the Savannah River Site and many of the employees who work there and those who have now retired are extremely proud of the role SRS has played in our national defense. We are equally proud of the history and record of safety, both to the employees and the public, as well as to the environment.

Having made much of the material at SRS that was used in our nation's nuclear weapons, SRS has been chosen by the Department of Energy to take that material and now convert it to material not readily usable in weapons.

There is no better location to do this work than at SRS, making use of the years of experience and expertise, unique in our nation.

Making use of the excess plutonium by fabricating it into fuel for commercial reactors to make electricity is the right thing to do. It is *not* a new science, nor is it unproven. I have full confidence in the Nuclear Regulatory Commission and its oversight and approval role in this project.

I fully understand the transportation required to move this material to and from SRS and any risks associated with it. When put into proper perspective, these risks are much less than most which we readily accept - in the past, present and future. The radiation exposure to us is about the same as a dental x-ray.

As for the risks associated with the trucks moving this material, I would rather be on the road with one of these trucks than with the gasoline tankers we see everyday on the highways. This reference is based on historical facts and data. I challenge anyone to review the Department of Transportation

data for themselves and compare it to the exemplary transportation record of the Department of Energy.

Our community knows and understands these risks as well as the missions and programs at SRS and fully supports both the existing work and that associated with the new missions – one of which is the topic of these hearings.

You should know that I, and others here tonight supporting this work, speak from an informed position. SRS shares with us the good and the bad.

Finally, let me add a word about the opponents of the MOX fuel mission. They certainly have every right to be heard. However, I ask this panel to decide whether they really represent the feelings of the people who live and work and raise their families in this community.

I think you'll find that most of them, while well meaning, have driven here from areas far away from here. I find it interesting that to generate opposition, one has to go outside of the area and plant a few people here to give the *appearance* of community. I hope you will not be fooled by them.

Thank you for scheduling this hearing tonight. MOX fuel is the right mission, now is the right time, and Savannah River Site is the right place.

**Comments on MOX EIS at 4/17/01 EIS Scoping Meeting**

By W. Lee Poe, Jr.  
807 E. Rollingwood Rd.  
Aiken, SC 29801

I want to thank you for coming to North Augusta to receive stakeholders input on the MOX FFF. I am glad to see this process begin. There has been total silent between DOE-DCS and stakeholders on this subject since it was announced in January 2000. I hope communications between the stakeholders and NRC is open so we stakeholders will understand what is planned. My hope is that communications between DOE-DCS and stakeholders will improve significantly. I have had good relationships with SRS (both DOE and their subcontractors) on other SRS issues in the past. This plutonium disposition has been the exception.

Now to comments that should be useful to this EIS. I will number my comments to simplify reference to them.

1. Two reports pertinent to this EIS (the construction authorization request – dated 2/28/01 and the DCS Environmental Report – dated 12/19/00) should be made available to stakeholders who request copies and I request a copy.
2. The supplemental information provided by NRC states that the EIS would address only site-specific impacts. It goes on to state that DOE has already address generic impacts of the program. The No Action Alternative must discuss the impacts on US-Russian relations; security of the plutonium, etc. if the No Action Alternative is adopted. Otherwise it will be an insufficient alternative. Provide an adequate restatement of these and other necessary issues for the No Action Alternative.
3. The first paragraph in the Background describes immobilization of 8.4 MT Pu and incorporation into the vitrified High Level Waste. From what I read, this project has been canceled. I have seen nothing official on this or the impacts it may have on the amount of plutonium to be fabricated into MOX fuel. What are the political implications of DOE canceling this project on international relations? The NRC, by including this discussion of this defunct disposal method in your Supplemental Information sheet lowers your credibility in the MOX area.
4. The Supplemental Information states there will be a single Alternative for MOX operation. I recommend that several alternatives that involve different quantities of Pu be evaluated in the EIS. This allows the EIS to provide the NEPA coverage for the action if either the quantity is reduced below the 25.6 MT Pu (listed on page 3) or if the quantity is increased to cover additional Pu made surplus by DOE.
5. The Supplemental Information sheet lists 17 areas to be discussed in the EIS. It goes on to state that some areas may be added or areas deleted based on this scoping process. I think it important to identify those areas I want to see in the EIS. Inorder to do this quickly I numbered them from the top down. I think the following are very important to this EIS. 1, 2, 5, 6, 8, 11, 12, 13, & 16.
6. The above list of impact areas should be expanded to include: 1) interactions of this project between DCS, DOE, & NRC and the remainder of SRS activities (both

- political and technical issues); 2) construction, operation and closure and removal impacts must be included.
7. EIS should include commitments showing how closure and removal will be affected. How will they be funded and what is the terminal facility/site condition when the MOX FFF is no longer needed. These terminal conditions should be compared with present condition for the site of the MOX FFF.
  8. Clear definition of the various parts of the MOX FFF should be defined in the EIS and the amount and type of waste generated by each should be included. (This may be partly included in impact area 2.) Start, annual quantities and types, completion schedule for waste generation should be specified.
  9. Several NRC/stakeholder meetings should be scheduled between now and Feb 02 when the draft EIS is scheduled to be issued. These meetings should educate the stakeholders on the proposed plant and allow adequate time for understanding of the issues.
  10. The MOX web page seems to contain a lot of information but getting to it and downloading the information is a formidable task. Simplify this problem or put the information in a local reading room. I see the ADAM process is supposed to simplify downloading of this information. I am not sure I want to load that software on my computer. If the process is good, provide a computer containing all of the necessary software in the local reading room so it can be used to down load that information.
  11. Help stakeholders understand the safety issues associated with the MOX FFF. For example the schedule shows the NRC Safety Evaluation Report being issued in April 2002. As evaluation of this safety progresses, DCS and NRC should brief stakeholders of the findings. Don't wait a year to educate us.



Fred E. Humes  
Director

Statement for the Record  
Mixed Oxide Fuels Fabrication Facility  
Environmental Impact Statement Scoping Meeting  
Nuclear Regulatory Commission  
April 17, 2001

My name is Ernest S. Chaput and I represent the Economic Development Partnership of Aiken and Edgefield Counties, South Carolina. The Aiken community has a long and rich history of supporting nuclear programs at the Department of Energy's Savannah River Site and the EDP has often provided comment on nuclear activities proposed for our area. We have long supported the Department of Energy's Surplus Plutonium Disposition program and the MOX facility in particular. While we have been frustrated with the slow pace of this priority program, we are pleased that the facility has now entered the licensing phase.

The Aiken community is proud of our important role in winning the cold war by producing plutonium and tritium for national defense, however the job is only half done. Now that we no longer need the large numbers of nuclear weapons to assure the peace, it is equally important that excess fissile materials be rendered unusable for use in weapons of mass destruction to the maximum extent possible. Using excess plutonium as the fissile fuel in a nuclear reactor is the only practical way of significantly reducing plutonium's effectiveness in a nuclear explosive device. Disposing of the burned plutonium as spent fuel presents the most difficult path for reclaiming the residual, degraded fissile material. A single pass mixed oxide fuel cycle provides us with the greatest opportunity for assuring that excess plutonium will not reappear as a headline announcing an act of nuclear terrorism or nuclear blackmail. It is our responsibility to future generations to achieve that goal.

← add lib  
comments  
at this  
point

Our government and the government of Russia have wisely chosen the mixed oxide fuel cycle to render excess plutonium unusable for weapons of mass destruction. Our government has also wisely selected the Savannah River Site (SRS) for the conversion and fabrication of excess plutonium into MOX fuel assemblies that will be used to fuel nuclear reactors. The Savannah River Site has the most modern and complete nuclear infrastructure in the United States. Its large limited access land area and best in class security forces provide the highest level of protection for these sensitive materials. Locating the MOX fabricating facility on the SRS closely couples the recovery of plutonium from dismantled weapons and the storage of excess plutonium to the fuel fabrication process – further enhancing an already safe and secure activity.

As you prepare the scope of the Environmental Impact Statement for construction and operation of a mixed oxide fuel fabrication on the Savannah River Site, we recommend that the following be included:

1. The benefits of a MOX fabrication facility are of worldwide importance. A “no action” alternative is unacceptable. If a “no action” alternative must be considered, then we recommend that it include the environmental and human impacts resulting from an act of nuclear terrorism.
2. That maximum credit be given to the Department of Energy’s process for retaining a competent world-class industrial team for building and operating this project.
3. That appropriate consideration be given to the extensive and modern nuclear infrastructure within which the MOX facility will be placed. The safety, environmental and security programs at SRS set the standard for excellence.

Thank you for the opportunity to provide input to your very important activity.

# French Report Doubts Merits of Reprocessing and MOX

BY ANNIE MAKHIJANI

Nuclear proponents like to point to France as the success story of nuclear energy. Nuclear power plants generate 75 to 80 percent of France's electricity and this is often held up as a symbol of the presumed wide acceptance of nuclear energy among the French public.<sup>1</sup> However, since the late 1980s, when the French government first tried to start local investigations for possible repository sites, one of the public's top concerns has been the management of nuclear waste. This concern has, in turn, fueled a debate regarding the phase-out of nuclear power. Within this context the more narrow, but crucial, debate of putting an end to reprocessing has for the first time received official consideration.

A July 2000 report, entitled *Etude économique prospective de la filière électrique nucléaire* ("The Economic Prospects of the Nuclear Electricity Sector"), was commissioned by the French Prime Minister, Lionel Jospin, to provide the government<sup>2</sup> with an economic analysis of nuclear power, including reprocessing and the use of MOX (mixed [plutonium and uranium] oxide) fuel.<sup>3</sup> The report is known as the Charpin report, after its primary author, Jean-Michel Charpin, who is the head of the Commissariat du Plan.<sup>4</sup> The other two co-authors are Benjamin Dessus, Director of the ECODEV (Ecodéveloppement) program at the Centre National de Recherche Scientifique,<sup>5</sup> and René Pellat, Haut Commissaire à l'énergie atomique (Commissioner of the Atomic Energy Commission).

Given the diverse constituencies represented by the authors, including the French nuclear establishment, the report must be viewed as something of an official technical consensus document. In the introduction of the report, the authors state that:

*"We did not try to define the most desirable outcomes, even less how to get there. Therefore, this study does not make any recommendation. [...] Our ambition was not to guide the choices of the authorities, or even to influence public opinion. It was to allow the necessary democratic debate to take place on the basis of verified information and explicit technical, economic and environmental reasoning."*

Although the report did not make any recommendations, its two main conclusions regarding reprocessing are clear. They are, moreover, based on data furnished by the nuclear industry itself. First, reprocessing and MOX fuel use are uneconomical and will remain so for the foreseeable future. Second, reprocessing and MOX

fuel use will contribute little to the reduction of the inventory of the transuranic radionuclides in waste, including plutonium.

The report is structured to show a comparative economic analysis of possible various modes of electricity generation. It also evaluates the long-term impact of those options on the environment, notably carbon dioxide emissions. What follows is a summary of Chapter I of the report, "Pour la France: l'héritage du passé" ("Regarding France: the legacy of the past"), in which the two conclusions regarding reprocessing are reached. In order to put the report in context, we first provide a quick overview of the electricity sector and MOX fuel use in France.

## Electricity production in France

The overall electricity production in France in 1997 was 481 TWh (terawatt-hours)<sup>6</sup>, with 376 TWh (78 percent) coming from the nuclear sector. The civilian nuclear sector is comprised of 58 pressurized water reactors. Of these, 20 are currently using MOX, 8 can be modified to use MOX but are not presently using it, and the remaining 30 reactors use UO<sub>2</sub> (uranium dioxide) fuel and cannot be modified to use MOX.

The reactors that are loaded with MOX use a 30 percent MOX core. The rest of the fuel is low enriched uranium. The MOX load of these 20 reactors is comprised of almost all the plutonium that is separated from French spent fuel. Table 1 shows the total amount of spent fuel unloaded from French reactors and the amount of that which is reprocessed. Were MOX to be loaded into all twenty-eight reactors that can use it, all of the approximately 1,100 metric tons of UO<sub>2</sub> spent fuel generated annually in France could be reprocessed.

**TABLE 1: TYPES AND AMOUNT OF FUEL REPROCESSED IN FRANCE**

Type of spent fuel	Annual unloading, in metric tons	Amount reprocessed, in metric tons
UO <sub>2</sub>	~ 1100	850
MOX	~ 100	0
TOTAL	1200	850

Source: Commission Nationale d'Evaluation Relative aux recherches sur la gestion des déchets radioactifs, Instituée par la loi 91-1381 du 30 décembre 1991, Rapport d'Evaluation N°4, October 1998.

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There is, however, a considerable backlog of unused separated plutonium that is stored in France, since the extensive use of MOX is far more recent than commercial reprocessing.

### The scenarios

The report did its analysis by constructing seven scenarios. Six of these postulate various future levels of reprocessing and MOX fuel use. These are basically divided into two sets of three scenarios each, which differ only in the assumed life for the reactors (41 versus 45 years). The seventh, called S7, is a fictitious scenario that estimates the price of electricity in France assuming that reprocessing had never been initiated.

The difference in the assumed average lifetime is so small that we focus discussion here only on the second set, S4 through S6, which assume a reactor lifetime of 45 years. This is the assumption also made in the no-reprocessing scenario and therefore allows a comparison of the costs of various levels of reprocessing with no reprocessing.

Scenarios S4 through S6 involve the following assumptions:

- ▶ Scenario S4 assumes that reprocessing would stop in 2010.
- ▶ S5 corresponds to the current situation in France, in which 70% of the spent fuel is reprocessed and the extracted plutonium is fabricated into MOX and irradiated in 20 reactors.
- ▶ S6 corresponds to the situation where all newly generated spent fuel (but not the past stocks of the unprocessed spent fuel) is reprocessed and the extracted plutonium is fabricated into MOX and irradiated in 28 reactors.

Note that no scenario assumes an early halt to reprocessing. The report notes that before rejecting it, the authors had contemplated a scenario involving the termination of reprocessing in 2001, date for the

renewing of Electricité de France's reprocessing contracts. The rationale given for not considering an early halt to reprocessing is that a sudden stop would entail numerous technical (storage of irradiated fuel), social, and legal problems. Roland Lagarde, who is Environment Minister Dominique Voynet's point person on this, has recently broached the possibility of ending reprocessing in 2002.

### Economic analysis

Table 2 summarizes the costs of scenarios S4 to S7, where the same 45-year lifetime per reactor is assumed. The costs shown include deferred decommissioning costs. (Immediate decommissioning is more expensive.) All cost figures are in constant 1999 French francs.

Several conclusions can be drawn from these results. It is clear that France would have been far better off economically without reprocessing. The cumulative cost difference between the nuclear establishment's desire for full reprocessing and no reprocessing amounts to 165 billion francs (about \$25 billion, assuming 6.55 francs = one US dollar). This amounts to a difference of about 3.7 billion francs per year (about \$560 million), averaged out over the entire assumed life (45 years) of all the reactors. However, MOX is used in only some reactors and for only a portion of the life of these reactors. Hence, the cost difference between the full reprocessing and no reprocessing scenarios per reactor using MOX per year of MOX use is roughly \$50 million (including the related reprocessing costs).

Stopping reprocessing in 2010 would save almost 40 billion francs cumulatively (\$6 billion) whereas increasing the plutonium reuse from 70 to 100% of the UO<sub>2</sub>

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**TABLE 2: ELECTRICITY COST AND GENERATION UNDER DIFFERENT REPROCESSING SCHEMES IN FRANCE**

Scenario	S4 (end reprocessing in 2010)	S5 (70 % reprocessing)	S6 (full reprocessing)	S7 (no reprocessing)
Cumulative cost, billions of francs	2,888	2,910	2,927	2,762
Total cumulative electricity generation, billion kilowatt-hour (billion kWh)	20,238	20,238	20,238	20,238
Average cost of electricity, in centimes/kWh	14.27	14.38	14.46	13.65

Notes: The dollar-franc exchange rates fluctuate. An approximate conversion may be made by assuming one US dollar is approximately equal to one euro. The euro and franc have a fixed relationship at 1 euro = 6.55 francs. One centime = 0.15 cents.

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spent fuel generated annually would cost an extra 17 billion francs (\$2.6 billion). Unfortunately, the figures for stopping reprocessing in 2001 or 2002 are not given. But an extrapolation from the figures given indicates that the savings would be considerably higher.

### Material balance analysis

Table 3 shows the projected stocks of plutonium and americium at the end of reactor operating lifetimes, assumed to be 45 years, in metric tons.

**TABLE 3: QUANTITIES OF PLUTONIUM AND AMERICIUM CONTAINED IN UNREPROCESSED SPENT FUEL (UO<sub>2</sub> AND MOX) GENERATED UNDER VARIOUS REPROCESSING SCHEMES IN FRANCE**

Scenario	S4 (End reprocessing in 2010)	S5 (70% reprocessing)	S6 (full reprocessing)	S7 (no reprocessing)
Final stock of plutonium and americium, in metric tons	602	555	514	667

Note: Americium contributes only a few percent to the quantities listed.

Hence maximum reprocessing compared to no reprocessing reduces the plutonium stock by only 153 metric tons (S6 versus S7), or only about 23%. The difference in plutonium stock between phasing out reprocessing by 2010 and full reprocessing is even smaller (15%). The reasons that reprocessing has only small impacts on plutonium stocks are:

- ▶ Spent MOX fuel still contains a large amount of residual plutonium.
- ▶ France has a backlog of separated plutonium from the long period when it had no reactors or few reactors using MOX.<sup>7</sup> France does not have the reactor capacity to use this backlog. Moreover, aged plutonium contains americium-241, a strong gamma emitter resulting from the decay of plutonium-241. Its presence is a hazard to workers and would necessitate its removal from the plutonium prior to MOX fabrication.
- ▶ France's plan to use large amounts of plutonium in breeder reactors has fallen apart because of the severe technical problems and the very high costs of the breeder reactor program. France has permanently shut down its star of this program, the Superphénix, by far the largest breeder reactor in the world, well ahead of the original schedule.

- ▶ There is plutonium in the spent fuel that France does not plan to reprocess, because it could not use the plutonium without engaging in a transmutation program.<sup>8</sup>

### IEER conclusions

The Charpin report provides the public with first detailed look at the official data on reprocessing and MOX fuel use in France. Its conclusions clearly point the way towards an early end to reprocessing since no significant problem in the energy or waste management sectors can be addressed by it. A rapid phase-out of

reprocessing and therefore MOX fuel use would appear to be in the economic interest of Electricité de France, which, like utilities elsewhere, is facing an era of deregulation and competition. The company that would be opposed to such a policy would

be Cogéma, the primarily government owned company which operates all of France's reprocessing and MOX fuel fabrication plants.

- 1 See, for example, Frontline documentary, "Nuclear Reaction" aired on PBS on April 15, 1997.
- 2 The current French government is a coalition of five left-leaning parties, including the Socialist and Green parties. The Environment Ministry is headed by a Green Party member, Dominique Voynet.
- 3 Jean-Michel Charpin, Benjamin Dessus and René Pellat, *Étude économique prospective de la filière électrique nucléaire*, La Documentation française, July 2000. This report can be found on the web in French at <http://www.plan.gouv.fr>.
- 4 The Commissariat du Plan reports to the Prime Minister. Its mission is to help guide public choices on economic and social issues by producing expert studies.
- 5 The CNRS is government-affiliated, and has branches in various regions of France. It conducts research in many fields, including physical and biological sciences, health, as well as economics and social sciences.
- 6 One terawatt is one trillion watts ( $10^{12}$  or 1,000,000,000,000 watts).
- 7 At the end of 1996, this backlog was approximately 35 tons. If foreign plutonium is included, the figure increases to about 65 tons.
- 8 IEER's analysis of transmutation as a waste management method — including environmental, waste management, cost, and proliferation concerns — is summarized in *Science for Democratic Action*, vol. 8 no. 3 (May 2000), on the web at: [http://www.ieer.org/sdfiles/vol\\_8/8-3/transm.html](http://www.ieer.org/sdfiles/vol_8/8-3/transm.html).

**FRIENDS FOR A SAFE TOMORROW  
(FFAST)**

**MISSION STATEMENT:**

**To ensure Environmental Justice by providing educational awareness and involvement of Minority (African-American), Low-Income communities and others who are impacted by the operations of DOE facilities and other facilities which could have an adverse impact on safety, Health, and the environment.**

**VISION: To have an educated minority and low-income community who will come to the table with the technical knowledge and understanding to assist in the decision making of a safe and healthy environment.**

**To collaborate with DOE, WSRC, EPA, SCDHEC, CAB, CNTA, and other agencies and organizations to educate and involve the Minority and low-income Communities as true partners in the continuous effort to keep the environment safe while operating nuclear, chemical, and manufacturing facilities.**

**OBJECTIVES:**

- 1. Partner with CAB – Citizens Advisory Board**
- 2. Partner with CNTA – Citizens for Nuclear Technology Awareness.**
- 3. To involve elected officials and community leaders from each community impacted**
- 4. To involve Faith Based Organizations in the education process.**
- 5. Partner with HBCU's (Historically Black Colleges and Universities), colleges, universities, and technical colleges, to educate minority communities of the opportunities for students at DOE sites.**
- 6. Partner with colleges, universities, and technical colleges for education and assistance of health impact of employees and residents living near nuclear, chemical, and other industries verses the health status of the rest of the population.**
- 7. Educate and safe guard the minority and low-income community from environmental harm.**
- 8. Provide a forum for communities to provide feedback as it relates to environmental issues with DOE/WSRC, chemical, and other manufacturing industries.**
- 9. Provide education on how to locate data and information provided by DOE and others.**

10. **Provide feedback to DOE/WSRC and others as it relates to minority and low-income concerns on Health and Environment.**
11. **To inform the community of job opportunities that are available at DOE/WSRC sites and other industries.**
12. **Educate the minority and low-income community on the history of SRS, origin, safety, and value to United States.**

*S. Suther*  
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# commentary

## Say no to MOX

BY BRITA LARSEN CLARK

The military-industrial complex is at it again as spinmeister. This time, the idea is to turn "swords into plowshares" by using plutonium from nuclear warheads to generate electric power.

The plan involves using weapons-grade plutonium to manufacture fuel for commercial reactors. The fuel — called MOX, for "mixed-oxide" fuel — combines highly enriched uranium with plutonium reprocessed from dismantled nuclear weapons.

The Southeastern United States would be the region most directly affected by a plan to use MOX. The Savannah River site in South Carolina has been chosen to reprocess the plutonium and fabricate MOX fuel. In North and South Carolina, Duke Energy has been given the go-ahead by the Department of Energy to begin planning for the use of weapons-grade plutonium fuel.

The Catawba Nuclear Station near Rock Hill, S.C., and the McGuire Plant near Charlotte, N.C., have been chosen for the MOX-fueled nuclear reactors. Trucks would transport plutonium to the Savannah River site from DOE sites in the West, using our interstate highways. Shipments of the processed fuel to the reactor sites would move the same way.

At first glance, using our stockpiled plutonium in this way doesn't necessarily seem so bad ... if you don't mind nuclear power — and plenty of folks don't. After all, we have to do *something* with all that stuff, don't we? Well, yes. But MOX fuel in our reactors would be a terrible mistake. Here's why:

- Present reactors were never designed with plutonium fuel in mind. Extensive, costly and untested revamping would be necessary.

- The MOX fuel generates more high-energy particles than the currently used uranium fuel. This will accelerate the rate of damage to key reactor parts. The containment vessel, for example, will become brittle sooner and be less reliable for confining radiation in an emergency.

- Because plutonium-laced fuel generates more high-energy neutrons, the rate of the nuclear reaction will increase and become harder to control. Conventional control rods cannot be inserted fast enough when reactions proceed in nanoseconds. This makes a runaway nuclear "event" more likely.

- A recent study by the Nuclear Control Institute finds that an accident at a reactor fueled with MOX could cause 25 to 30 percent more fatal cancers than an identical incident at a uranium-fueled

reactor. This is because MOX fuel will create more of the dangerous transuranic elements.

- Processing weapons plutonium into MOX would create huge amounts of high-level nuclear waste, for which we have no means of safe, long-term storage. Also, this is an inherently dirty process, and further contamination of the Savannah River site and its workers would be inevitable.

- To produce MOX, plutonium will be transported by truck to the Savannah River site in Aiken, S.C., for reprocessing, and the finished fuel then trucked to selected reactor sites. This presents serious security risks regarding the possibility of theft or terrorist activity, because the plutonium in MOX can be extracted for use in nuclear weapons. There is also the potential for accidents en route. The transport canisters now in use have been called "mobile Chernobyls," because they leak radiation and cannot be relied on to stay intact in the event of a major collision.

- Interestingly, MOX will not "use up" our stockpiled plutonium after all. Though a small amount will be expended in energy production, plutonium will also be created in the process — along with a host of other toxic elements — when the uranium in the mixed-oxide fuel is converted to new plutonium.

- Plutonium disposition is closely linked to international efforts to control the spread of nuclear arms. A U.S. plutonium-fuel program would undercut a decades-long policy aimed at restricting the proliferation of nuclear weapons. It would signal U.S. approval of plutonium reprocessing, and support plutonium production in Russia as well. A MOX program could lead to world trade in plutonium, with greatly increased risks to international security, public health and the environment.

You may be wondering why Duke Energy, known as a responsible member of the utility industry, would even consider using MOX fuel in its facilities. It's the same old answer: money. The DOE is planning to pay them, with your tax dollars, to use plutonium fuel. Using our money to prop up aging nuclear facilities is a form of corporate welfare that works against everyone's best interests.

Of course, we still face the question of surplus

plutonium disposition. What *are* we going to do with the stuff, to keep it safely contained and unavailable for the next 240 million years? The most promising alternative is immobilization, in which plutonium is embedded in canisters filled with molten glass containing high-level nuclear waste.

This would isolate the plutonium from the environment and create a radioactive barrier that would make the plutonium much less vulnerable to theft or diversion.

If you would like to help stop the threat of plutonium fuel in our commercial power reactors, contact our senators, Jesse Helms and John Edwards, and our Congressional representative, Charles Taylor (all through the U.S. Capital switchboard, (202) 224-3121). Urge them to support funding for more immobilization and to block funding for MOX. Let them know that you do not want our public health, environment and national security placed at risk.

Also contact Duke Energy, especially if you are a stockholder, to protest this dangerous MOX proposal. The contact person is Cathy Roche, Director of External Relations, P.O. Box 1244, Charlotte, NC 28202. Her e-mail address is [csroche@duke-energy.com](mailto:csroche@duke-energy.com).

To learn more about MOX, contact the Nuclear Information and Resource Center. We are fortunate that NIRS Southeast Coordinator Mary Fox Olsen has moved her office to Asheville. Mary is a nationally known expert on nuclear issues, especially MOX, and you can reach her at (828) 251-2060 or [nirs.se@mind-spring.com](mailto:nirs.se@mind-spring.com). The national-office Web site address is [www.nirs.org](http://www.nirs.org).

The Blue Ridge Environmental Defense League also has an excellent Web site ([www.bredl.org](http://www.bredl.org)) where you can learn more about the international NIX-MOX coalition.

*Sept. 28 has been set aside as the international day of MOX protest. Clark and others will distribute literature about the dangers of MOX on that day, between 10 a.m. and 2 p.m., at Earth Fare.*

*Brita L. Clark, president of the Asheville branch of the Women's International League for Peace and Freedom, also serves on the North Carolina Peace Action State Board.*

MOUNTAIN EXPRESS, ASHEVILLE, NC  
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Chernobyl Nuclear Power Station near Pripyat, Ukraine (then in the USSR), exploded on April 26, 1986. The release of radiation as a plume of radioactive smoke continued for more than 10 days.

The images below are based on data collected during this massive release of radioactivity to our environment.



Credit: ARAC

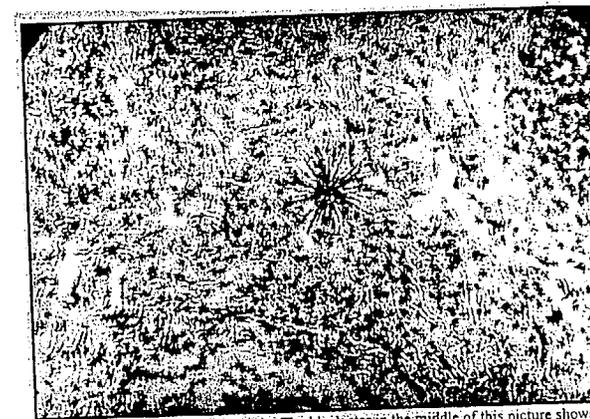
Source: "Chernobyl, 10 Years On, Radiological and Health Impact," 1996, Nuclear Energy Agency, Organisation for Economic Cooperation and Development

Nuclear Information & Resource Service Southeast, P.O. Box 7586 Asheville, North Carolina 28802  
828-251-2060 fax 828-236-3489 nirs.sc@mindspring.com <http://www.nirs.org>

Closing the Circle on the Splitting of the At.



Finished plutonium metal. Plutonium must be handled and stored in small quantities like this to prevent it from spontaneously starting a nuclear chain reaction. Rocky Flats, Colorado. January 8, 1974.



Particle of plutonium in lung tissue. The black star in the middle of this picture shows tracks made by alpha rays emitted from a particle of plutonium in the lung tissue of an animal. Alpha rays do not travel far, but once inside the body they can penetrate the more than 10,000 cells within their range. Magnification 500 times. Lawrence Radiation Laboratory Berkeley, California. September 20, 1982.