GERRELLS, ELSWORTH, SAN JOSE, CA
PAGE 1 OF 8

May 7, 1996

U.S. Department of Energy
Office of Fissile Materials Disposition
P.O. Box 23786
Washington, DC 20026-3786.

Dear Sirs:

My comments on the February 1996 Draft Programmatic Environment Impact Statement for the Disposition of Weapons-Usable Fissile Materials are attached.

Yours Truly,

Elsworth Gerrells

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F-038

Comments on DRAFT Programmatic Environmental Impact Statement for the Storage and Disposition of Weapons Useable Fissile Materials

(Comments apply to the storage and disposition of excess weapons plutonium.)

Timeliness, Reliability, Costs -Risk Effectiveness

The PEIS fails to take into account the potential costs and environmental impact of the most significant risk factor associated with the plutonium disposition program. That is the risk and impact of the divergence or theft of that weapons useable material from the Russian stockpile. 1/01.06.00

Programs underway to establish a better inventory and more reliable physical security over the Russian weapon materials are potentially piecemeal and band-aid activities with uncertain results.

At an April 8,1996 CSIS forum in Washington DC chaired by Dr. James Schlesinger, some key findings with respect to the threat of nuclear material in Russia included:

- threat is escalating,
- desperate, corrupt insiders are a serious threat
- military controls lessening
- finances are short
- trafficking trend is upward
- the threat outpacing security improvements, even with U.S. financial help
- smuggling routes are numerous, shifting through the Caucasus, Europe, Central Asia
- Russian organized crime is involved now - a dangerous mix of power, greed, corrupt officials/military
- countermeasures are expensive - a need to secure at the source
- protection at source paramount, but post-theft measures needed also
- neutralization is worst option - when conducted abroad, political and safety risks abound, capabilities limited.

Recommendations by the task force included:

- sustained funding and long term vision
- institutional measures
- bilateral safeguards (for material removed from warheads)
- the U.S. needs development of an indigenous safeguards culture in the former Soviet Union - not brought in from Los Alamos and put there

At the forum, Mr. Graham Allison urged that focus should be the "loose nukes" (the bomb-making nuclear materials). He concluded we are living on borrowed time.

F-038

01 06 00 Comment Number 1

The purpose of the Proposed Action is, in part, to establish the technical and program infrastructure that will enable the United States to take unilateral action or negotiate reciprocal actions with other nations for the disposition of surplus weapons-usable Pu. This PEIS addresses the environmental impacts of the reasonable alternatives for DOE's Proposed Action. Analyses of the cost, schedule, technical, and Nonproliferation Policy impacts are described in separate documents to support DOE's ROD. The documents related to technical, cost, and schedule analyses were made available for public review beginning in July 1996. The nonproliferation analysis was made available to the public beginning in October 1996. DOE also conducted a series of public meetings, prior to the issuance of the Final PEIS, to discuss the analysis of the Nonproliferation Policy as it relates to the Proposed Action and alternatives.

Comments on DRAFT Programmatic Environmental Impact Statement for the Storage and Disposition of Weapons Useable Fissile Materials

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Programs underway to establish a better inventory and more reliable physical security over the Russian weapon materials are potentially piecemeal and band-aid activities with uncertain results.

At an April 6,1996 CSIS forum in Washington DC chaired by Dr. James Schlesinger, some key findings with respect to the threat of nuclear material in Russia included:

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F-038

Record of Decision. Therefore these cost differentials between options under consideration should be meaningless when compared to the cost of the proliferation and threat risk. In that context, the overriding cost-benefit analysis clearly makes the most effective, reliable and timely solution available the desirable option. An overriding cost-benefit advantage of the light water reactor option is its assurance that the threat to national security could be reliably and effectively addressed in the short time frame intended, and the light water reactor option should therefore merit DOE support, and given those same considerations, other widespread public and political support. 2/08.03.01

Recognizing this, the National Academy of Sciences urged that costs should not be a major factor in getting on with the Pu disposition program and that a timely and reliable response should be primary.

The environmental impact of a clandestine nuclear device even if only hidden or if exploded in a U.S. city, would have an overwhelming environmental impact compared to some of the trivial issues being studied and elevated to equal consideration in the PEIS. Even a credible threat of a nuclear device by a sub-national terrorist group could cause serious social dislocation.

Timeliness, reliability, and cost-risk effectiveness do not appear to be valued in DOE's PEIS evaluation. Since early 1994 and again since then, the National Academy of Sciences has strongly urged the DOE to expedite the disposition activity. They recognize the "clear and present danger" of divergence or "breakout" of Russian nuclear material. 3/08.03.00

DOE's actions to-date do not reflect the sense of urgency or timeliness in implementing a meaningful disposition program as recommended by the National Academy. Since 1993, resources have been directed to studies, and then more studies, and time and money have been expended on consideration of options with little real potential or technical value and with high technical, cost, and schedule risks. The PEIS and ROD originally advertised by DOE as intended for expedited completion in mid-1996, has been underfunded and most likely, intentionally delayed until after the presidential elections. Even now, resources are being committed or used by DOE on prototype technical activities which could have little real impact on accelerating a meaningful disposition effort but which appear to be undertaken to facilitate the opportunity to make grand but bogus claims of progress, solely to further political purposes in an election year. The PEIS spends years and millions of dollars considering endangered wildlife species and the minute distinctions of potential economic discrimination between the various options. DOE would be better to consider the impact of the delay and underfunding that has occurred in the disposition program on the economic discrimination that would befall all the citizens of any major population center targeted by a terrorist nuclear device, and also the risk that the citizens of that target location could become another endangered species. 4/01.00.00 5/08.00.00

F-038

08 03 01 Comment Number 2

The Department of Energy acknowledges the commentor's support for the Existing LWR Alternative. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

08 03 00 Comment Number 3

The time required to implement and complete the Proposed Action under each of the alternatives is included in this PEIS. A detailed schedule, reliability, and cost information have been included in a separate Technical Summary Report. Information on environmental impacts in this PEIS along with technical, cost and schedule information in the Technical Summary Reports, and other information will be provided to the decisionmaker.

01 00 00 Comment Number 4

The schedule analysis, along with the cost, technical, and Nonproliferation Policy analyses on the Proposed Action and reasonable alternatives, is presented in separate documents to support the DOE's ROD. The documents related to technical, cost, and schedule analyses were available for public review beginning in July 1996. The nonproliferation analysis was made available to the public beginning in October 1996. The ROD is expected in late 1996.

08 00 00 Comment Number 5

Comment noted.

GERRELLS, ELSWORTH, SAN JOSE, CA
PAGE 5 OF 8

DOE's technical staff clearly and very early identified a dual track approach of (1) converting the bulk of the excess weapons useable Pu materials to mixed oxide fuel and dispositioning it in existing LWRs, and 2) developing some form of vitrification technology for encapsulating smaller quantities of low level Pu from waste steams and scrape Pu that are not suitable for LWR fuel. These are the best available mix of technology and industrially reliable capabilities.

DOE funding should be directed toward accelerating the LWR option which addresses the bulk and weapons useable material while also sustaining a lower level of vitrification activities to address the smaller quantity and less-useable, and therefore less threatening, Pu wastes. 6/08.03.01

Consideration of Vitrification as a single solution for all U.S. excess material does not represent a credible or reliable and unrecoverable option. There are serious environmental and nuclear criticality uncertainties associated with the vitrification of large quantities of fissionable material. 7/08.03.01

There are also so may developmental uncertainties and production reliability concerns with all vitrification options such that the risk of it never providing a reliable bulk conversion option are very great. The vitrification options are considered experimental even by those who advocate their development. There is significant risk in the cost and schedule and successful resolution of technical issues even in an R&D phase in bringing those options to a prototype state. The costs, schedule and program risks are even greater when the prototype technology needs to be expanded and relied upon for the production disposition mission. If the eventually industrial reliability might be only 35-60 % , would it be viable ? Can DOE truly expect to estimate what the O&M costs of production are for a vitrification program ? 8/05.01.08

Furthermore, DOE's own scientists at LANL have published that recovery of Pu from vitrified forms is a simple chemical process and easily achievable. This makes vitrification less of a barrier than the LWR spent fuel option and also must have less credibility for encouraging a reciprocal bilateral program with Russia for that same reason. Therefore, the bulk of the weapons usable material should be dispositioned by the LWR option which is the only option that achieves an isotopic change of weapons usage forms of plutonium and increases the undesirable Pu 240 content and reduces overall the amount of Pu by about 1/3 in a once through cycle. 6/08.03.01 cont.

Proliferation and Technology Issues

At a guest lecture tour through the U.S. in April '96 by a noted expert on Plutonium, Prof. Wolfgang Stoll of Germany; Professor Stoll offered a foreign view of U.S. non-proliferation tactics.

Prof. Stoll offered that the U.S. is undermining its ability to achieve a timely disposition program for weapons usable materials if it rejects MOX fuel technology as a means of

F-038

08 03 01 Comment Number 6

The Department of Energy acknowledges the commentor's support for the implementation of both the Reactor and Immobilization Alternatives. Decisions on disposition will be made based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

08 03 01 Comment Number 7

The Department of Energy acknowledges the commentor's opposition to the Vitrification Alternative. Decisions on disposition of weapons-usable fissile materials will be made based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

05 01 08 Comment Number 8

Further information on the technical viability, schedule, and costs of the Immobilization Alternatives is provided in the Technical Summary Report and related Immobilization Alternative Summary Reports published in July 1996.

dispositioning weapons materials. There is reluctance by some to proceed with disposition of weapons material through burning of MOX because of misinformed expectation by anti-nuclear idealists that if the U.S. does not use the technology, then it will also not be used by others for commercial purposes. Prof. Stoll assured his American audience that other nations are already far ahead of the U.S. in MOX fuel technology, commercial use, and experience with it, and that they will continue to pursue and use that technology to meet their spent fuel disposal and long term energy independence commitments and plans in safeguarded and proliferation resistant programs.

In fact, by not participating in MOX technology, the U.S. is abandoning it's technological leadership to others and will cease to have a voice or influence over the non-proliferation considerations of those programs. The U.S. expectations were characterized as naive, as the U.S. very mistakenly expects the rest of the world to unfailingly march to the beat of our drum. It was suggested that, instead, the U.S. would have much more influence and control over MOX technology by being the technology leader in that discipline, and where the U.S. might be able to turn technical support on or off to control the use of the technology in appropriately safeguarded and non-proliferation committed programs.

In subsequent discussions, it was noted that facilities and production processes for MOX fuel that would be used in a U.S. disposition program could be designed so it would be highly impractical to consider the use of those same facilities for the highly irradiated recycled Pu that would be considered if a commercial MOX program were intended. Furthermore, the facility could be designed for convenient decontamination from low exposure weapons grade Pu and built-in decommission considerations could be designed in so that could be readily achieved upon termination of the disposition program. It is also relevant to explain to the political opponents of LWR disposition that the U.S. disposition program is going to be limited program with only a few plants participating into order to achieve rapid and reliable disposition of weapons for a strategic non-proliferation goal and it is in no way oriented to promote the commercial use of MOX. There are "professional " protest lobbies (Greenpeace for one) that would decry any and all DOE disposition options and especially the LWR option; while others recognize the facility of the LWR option and decry the environment risks of geological disposal of vitrification products. Yet they offer no alternate solution to the environmental threat of doing nothing and the role they play in further delaying meaningful disposition.

Involved locales and common sense public good

Some professional environmental protesters would have the DOE abandon consideration of all near term options and spend additional decades in R&D on "still unidentified, ultimate disposition methods" which, of course, must have no potential for environmental impact. Pursuing a longer term solution for the much less threatening proliferation risk from reactor grade plutonium, instead of focusing on the near term

GERRELLS, ELSWORTH, SAN JOSE, CA
PAGE 7 OF 8

security issues stemming from weapons grade plutonium, could result in the proverbial "locking of the barn door after the horses are stolen".

Few activities, if any, undertaken in modern industrial society have no risk. Society chooses to drive automobiles despite 50,000 traffic fatalities yearly. The risks of no action and action too long delayed are much greater than those highly improbable risks that some would demand we avoid in arriving at a record of decision and getting on with the program as expediently as practical. 9/08.03.01

When the general public and their political representatives are given these facts through public meetings and other information initiatives which the Department of Energy should be undertaking, and when they are made aware that the use of MOX fuel in reactors to convert weapons usable materials to spent fuel is a quick, reasonable and practical solution to the threat of diversion and otherwise relatively easy reuse that might be achieved with other options, the LWR option should win broad public and political acceptance.

Public responses at PEIS public scoping meetings in 1995 and this year's draft PEIS comment meeting have clearly demonstrated broad community support in those locales that are candidates for Pu disposition activities. There have been significant expressions of state and local level political and public support. The candidate communities are knowledgeable of the real nature of the plutonium hazard, (not the hyped hysterics that some portray) have favorable experience with plutonium activities, are comfortable with the real issues of plutonium handling and processing activities which will be common to all disposition options, and are confident in the ability of well-managed organizations to conduct the program safely and in an environmentally sound way. Particular locations which have had poor experiences with DOE facilities, or those with a well-established culture of opposition by special interests to DOE and nuclear-related operations are clearly not being considered as sites for program activities and should therefore not be a factor. A key, therefore, to achieving an accurate and meaningful public consensus lies in appropriately identifying and obtaining a consensus of those local and regional stakeholders who are truly affected. 10/08.02.00

Because U.S. national security is potentially affected by a lack of action as much as by specific actions taken in addressing this excess weapons material threat, special interests and/or bias and ideological critics who would seek to block the program with protests in the name of having "a higher vision " than the rest of us, or even by legal challenges, despite it otherwise being a broad-based acceptable solution, are doing a gross disservice to our county. The overwhelming public interest clearly lies in implementing an effective and timely solution. A solution which has broad public and political consensus, which is being hampered by a limited special interest challenge, has a strong argument for passing over those objections, especially when they are clearly politically motivated, largely procedural, filled with slanted and inflammatory "scare tactic rhetoric" or otherwise without substantive merit, considering the all the risks and options.

F-038

08 03 01 Comment Number 9

The Department of Energy acknowledges the commentor's opposition to the No Action Alternative. Decisions on storage of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

08 02 00 Comment Number 10

Comment noted. However, the storage and disposition of weapons-usable Pu is an issue of national interest. NEPA requires full public participation, and all comments receive equal consideration.

DOE disposition actions must remain focused on the nature and potential of the immediate threat of divergence of weapons useable materials and the timeliness and reliability of the response and solution to the threat offered by the proposed options, and not on "micro" issues of cost, support or non-support of nuclear power, value or use of the Pu material, and local or regional economic or political interests. | 11/01.03.00

The LWR option would seem to be the only credible option for the U.S. to offer the Russians to enter into a bilateral program. Anything that does less, does nothing to reduce the threat of diversion of Russian material which will remain at risk until converted into a form not readily useable in weapons. | 12/01.03.00

F-038

01 03 00 Comment Number 11

Comment noted.

01 03 00 Comment Number 12

Comment noted. All Reactor Alternatives analyzed in the PEIS are viable options that would serve the same purpose the commentor described.