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VICE PRESIDENT,
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FUEL SUPPLY

May 7, 1996

U.S. Department of Energy
Office of Fissile Materials Disposition
c/o SAIC-PEIS
P.O. Box 23786
Washington, D.C. 20026-3786

SUBJECT: Storage and Disposition of Weapons-Usable Fissile Materials
Draft Programmatic Environmental Impact Statement
(DOE/EIS-0229-D)

The Nuclear Energy Institute[1] (NEI) appreciates the opportunity to comment on the Department of Energy's (DOE) Draft Programmatic Environmental Impact Statement (PEIS) for the Storage and Disposition of Weapons-Usable Fissile Materials (DOE/EIS-0229-D). NEI supports the efforts of DOE in identifying appropriate actions for the storage of all weapons-usable fissile materials and for the disposition of weapons-usable fissile material declared surplus to national defense needs. NEI encourages DOE to pursue those actions necessary to ensure that these weapons-usable materials are in a safe, controlled, and inspectable storage condition as soon as possible. Given the importance of implementing safe, efficient, and economical actions to dispose expeditiously of surplus weapons-usable fissile materials, we encourage DOE to rely to the greatest extent possible on the technical analysis and recommendations of the National Academy of Sciences as outlined in its 1994 publication, Management and Disposition of Excess Weapons Plutonium. By taking appropriate actions in a timely manner, the United States

[1] The Nuclear Energy Institute is the organization responsible for establishing unified nuclear industry policy on matters affecting the nuclear energy industry. NEI's purpose is to foster and encourage the continued safe utilization and development of nuclear energy to meet the nation's energy, environmental and economic goals. NEI represents over 250 companies and organizations worldwide, including electric utilities that own and operate nuclear power plants, nuclear plant equipment suppliers, engineering/construction firms, nuclear fuel cycle companies, and others in the nuclear energy industry.

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can lead by example in eliminating what NAS called "a clear and present danger to national and international security."

In response to the requirements of the National Environmental Policy Act of 1969, as amended, this draft PEIS analyzes various long-term storage and disposition alternatives. For the disposition of surplus plutonium, nine action alternatives are identified and categorized as either deep borehole burial, immobilization of plutonium for disposal, or burn in reactors as mixed-oxide (MOX) fuel. NEI agrees with DOE in pursuing the "spent fuel standard" as the most appropriate standard for managing the risks associated with surplus weapons-grade plutonium. As NAS states "...none of the options for long-term disposition of excess weapons plutonium can be expected to substantially reduce the inventories of excess plutonium from nuclear weapons for a least a decade." Therefore, we urge you to concentrate your resources on alternatives that will bring results in the shortest timeframe possible at reasonable cost. 1/01.05.00

NEI cautions against the utilization of ICRP and NCRP models to attempt to estimate actual impacts of low levels of radiation exposure to the public and workers. These models were developed to be conservative and to accommodate uncertainties in knowledge of the health impacts at low radiation exposures. The proper use of these models is to assess potential risks associated with one policy option relative to other options, and as a result, to make informed risk management decisions. 2/09.09.08

NEI recognizes that more than one option for the disposition of excess-weapons plutonium will be needed to adequately address all surplus weapons-usable material. As DOE acknowledges, existing surplus plutonium comes in various forms, and some of these forms may not be suitable for conversion to MOX fuel. Therefore, the strategy for disposition of surplus weapons-usable plutonium may involve a combination of disposition alternatives. NEI supports the findings of NAS indicating that the two most promising alternatives for the purpose of meeting the spent fuel standard are the use of surplus plutonium as MOX fuel and the vitrification option. 3/08.03.01

NEI supports the disposition of surplus plutonium as MOX fuel in commercial reactors as the most viable method of attaining the spent fuel standard and therefore, significantly reducing the security risks of this weapons-usable material. Disposal of plutonium using the "MOX option" can be accomplished in a timely manner and lies within the bounds of existing technology. DOE must be aware, however, that the final decision to burn surplus weapons plutonium in commercial reactors rests with individual electric utility companies and as such, a predictable and reliable schedule for fuel supply will be critical to their decision-making process.

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01 05 00 **Comment Number 1**

Comment noted.

09 09 08 **Comment Number 2**

The human health effects response to low-level radiation exposure is still disputed in the scientific community. The International Commission of Radiological Protection (ICRP) and NCRP, two widely respected and accepted scientific organizations, support using the linear-non-threshold approach for estimating human health risks for low-level radiation exposure. Some suggest that this estimation is too conservative while others believe that radiation effects would be greater at low-level radiation exposures. However, the ICRP and NCRP approach is the most widely used method to estimate the radiation health risk and has long been employed by regulatory agencies in the United States. It was appropriate to use this method in the PEIS.

08 03 01 **Comment Number 3**

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

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DOE must resolve a number of institutional issues, including the fact that the United States does not have a facility to fabricate MOX fuel, before it can expect reasonable participation from these companies. If MOX fuel is to be manufactured in the United States, reactor burning of weapons-usable plutonium will not begin for an additional five to ten years, which will be needed to build and license a MOX fabrication facility. The option of using excess European capacity to fabricate MOX fuel is not included in the draft PEIS, but may well be the most expeditious method of disposing of this material and should be evaluated as part of the PEIS. 4/01.00.00

As stated previously, before any company will agree to burn weapons-usable plutonium in its reactors, it will require a firm commitment from the federal government that the material would be delivered as and when promised. Security of fuel supply is of utmost importance to electric utilities and without it, DOE cannot expect long-term utility participation in obtaining these all important national security goals. 5/13.00.00

In closing, we wish to reiterate that the United States has an opportunity to demonstrate leadership to the rest of the world by implementing actions that will result in the near term disposal of surplus weapons plutonium. The world has accepted the validity of the spent fuel standard as a fully adequate non-proliferation deterrent. 6/01.06.00 Aggressive implementation by the United States of the MOX and vitrification options to achieve the spent fuel standard and to dispose of surplus weapons-usable plutonium should be pursued expeditiously and achieved as soon as possible. Since there will be significant licensing and regulatory issues associated with the successful implementation of the MOX fuel option, we encourage DOE to develop an approach that maximizes industry involvement. 7/06.06.08

Thank you for the opportunity to comment and we look forward to our continued participation in this activity.

Sincerely,

Patricia J. Helz for MSF

Marvin S. Fertel

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01 00 00 **Comment Number 4**

The use of European MOX fuel fabrication is an option analyzed under the Existing LWR Alternative (see Section 2.1.4, under the Reactor Category).

13 00 00 **Comment Number 5**

Comment noted.

01 06 00 **Comment Number 6**

Comment noted.

06 06 08 **Comment Number 7**

Comment noted. If the Reactor Alternative using MOX fuel is selected, negotiations with the appropriate reactor owners would include commitments for MOX fuel supply.