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Mr. Timothy A. Frazier  
GNEP PEIS Document Manager  
Office of Nuclear Energy  
U.S. Department of Energy  
1000 Independence Avenue, SW  
Washington, DC 20585-0119  
*Via e-mail to [GNEP-PEIS@nuclear.energy.gov](mailto:GNEP-PEIS@nuclear.energy.gov)*

Mr. Frasier:

We respectfully submit these scoping comments for the Global Nuclear Energy Partnership (GNEP) Programmatic Environmental Impact Statement (PEIS) (DOE/EIS-0396). At first glance, it appears that the public is being provided a chance to have an impact on GNEP, but we wonder if the American public will actually be a member of this partnership. This question arises upon examination of the GNEP website (<http://www.gnep.energy.gov/>). A true partner would be apprised of the actual problems and unknowns involved in a new program and not treated like the mark of a used car salesman.

For instance, the so-called “Proliferation-Resistant Recycling” webpage,<sup>1</sup> clearly a marketing gimmick and sales pitch, states, “Under the Global Nuclear Energy Partnership (GNEP), recycling would comprise uranium extraction (UREX+) that would accomplish the following...Extract short-lived fission products, cesium and strontium, and prepare them for decay storage until they meet the requirements for disposal as low-level waste.” What this page fails to explain is what is meant by “decay storage.” Based on 30 years of operation, billions of curies of this high-level waste would be accumulated.<sup>2</sup> As this strontium-90 and cesium-137 is also thermally hot, the decay storage would first mean storage in a water pool for 30 to 50 years, followed by another 200+ years of storage. These processes are not classified and we request total transparency. We also request that when something is not known, that this information be stated. GNEP is all about plutonium reprocessing, not “recycling.”

Please post the transcripts of the public scoping meetings on your website. The American public has a right to read and understand the full range of public debate.

In order for the public to make meaningful comments on the draft PEIS, please make all reference documents available to the public on your website as soon as possible, but at a minimum they must be available when the comment period on the draft begins. In our experience, cited reference documents form the foundation for all Department of Energy

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<sup>1</sup> See <http://www.gnep.energy.gov/gnepProliferationResistantRecycling.html>

<sup>2</sup> Robert Alvarez, Radioactive Wastes and the Global Nuclear Energy Partnership, Institute for Policy Studies, 2007 p. 15

(DOE) NEPA processes, but yet the Department is often negligent in making those reference documents available in a publicly accessible and convenient fashion.

**The PEIS must comprehensively address the long-term consequences of the fully implemented GNEP proposal.**

GNEP involves a programmatic proposal as well as subsequent project-specific proposals. The programmatic proposal is to reprocess spent nuclear fuel (SNF) to try to destroy the long-lived radioactive components of that SNF. GNEP includes project-specific proposals to construct and operate three facilities:

- 1) A **nuclear fuel recycling (reprocessing) center**, which would separate SNF into its reusable components and waste components and manufacture new nuclear fuel using reusable components;
- 2) An **advanced recycling reactor**, which would destroy long-lived radioactive elements in the new fuel while generating electricity; and
- 3) An **advanced fuel cycle research facility**, which would perform research into SNF reprocessing processes and other aspects of advanced nuclear fuel cycles.

We believe it is essential that all of the environmental consequences of the GNEP program as a whole be fully assessed at this stage.

DOE's January 4, 2007 Notice of Intent (NOI) in the Federal Register states that the PEIS will evaluate the programmatic elements of GNEP. However, the NOI does not specifically describe what aspects of GNEP will be considered programmatic and therefore subject to evaluation in the PEIS. The NOI describes the programmatic proposal as a plan *to begin* to recycle spent fuel and destroy the long-lived radioactive components of that spent fuel. It is inappropriate to define the proposal as a plan to begin spent fuel reprocessing, which suggests that the PEIS would evaluate only the initial phase of the proposed GNEP program. DOE's National Environmental Policy Act (NEPA) regulations define a PEIS as a broad-scope EIS that identifies and assesses the environmental impacts of a DOE program, not merely the initial stages of such a program.

The GNEP PEIS must programmatically review the entire and complete GNEP proposal to establish a closed fuel-cycle by recycling spent nuclear fuel, as described in the NOI. While DOE is not required to address site-specific impacts beyond those it identifies in the project-specific portion of the NOI, sufficient information is currently available to generically evaluate the environmental risks and benefits of large-scale implementation of reprocessing technology for an extended time frame, which should be sufficient to address the inherently long-term nature of nuclear risks. Such analysis is fundamental to the purpose of a PEIS.

While we support in principle the concept of recycling, we have no reason to believe at this point that nuclear waste reprocessing as proposed in the GNEP initiative qualifies as such. Based on currently available information, we are very concerned that implementation of GNEP would do little or nothing to solve the problem of long-term nuclear waste management, and would risk severe environmental consequences at high cost with very minimal actual public benefit.

**We Request A Review Process Without Prejudice.**

We are concerned that resources have already been irretrievably allocated to GNEP and towards selling GNEP. Recently, DOE hosted an international ministerial meeting, bringing together some of the nuclear fuel cycle States to discuss GNEP and its path forward toward increasing the use of nuclear power worldwide. U.S. Secretary of Energy Bodman announced that DOE and senior energy officials from some of the world's leading economies have issued a joint statement in support of the Global Nuclear Energy Partnership and nuclear energy cooperation. The People's Republic of China, France, Japan, Russia and the United States issued the Joint Statement, which addresses the prospects for international cooperation in "peaceful" uses of nuclear energy, including technical aspects, especially in the framework of GNEP. What version of GNEP was discussed? How can a joint statement in favor of GNEP be issued for a program that does not have a Record of Decision? Will the fact that the U.S. and several other nations have declared their support for GNEP prejudice the outcome of the PEIS process?

**We request public independent review of the GNEP Siting Studies.**

The U.S. Department of Energy announced that the Global Nuclear Energy Partnership Site Characterization Reports conducted by eleven commercial and public consortia cost \$10,458,242. These eleven sites generated reports about themselves with money awarded to them by DOE. Please provide an independent review of all these reports. Is it possible that none of these sites is acceptable, or does the fact that money was spent for these reports ensure that the final selection will be made from this list? This independent review should be made public before any site is selected.

**We request that the GNEP PEIS be better defined.**

DOE recently announced that it will provide up to \$60 million, over two years, to engage industry experts in the conceptual design of the initial nuclear fuel recycling center and advanced recycling reactor as part of GNEP. Studies from this Funding Opportunity Announcement (FOA) will include scope, schedule and cost information of the proposed facilities and will also identify technological needs that will be used to inform and effectively and efficiently implement GNEP's Research & Development activities. This FOA is intended to promote and develop nuclear industry expertise that DOE could use to make GNEP a reality. It seeks applicants to provide conceptual design studies, technology roadmaps, and business and communications plans essential to GNEP's initial development. The applicants would also be asked to explore the technical and business parameters that would support the design, construction, and operation of GNEP's initial nuclear fuel recycling center and advanced recycling reactor. How can a PEIS continue for a program that has not even been conceptually designed?

**The Proposed Alternatives are inadequate and incomplete.**

An EIS with only two narrowly framed alternatives does not comply with NEPA. A greater diversity of alternatives should be analyzed.

Although nuclear energy may be considered to provide a bridge to reduced carbon emissions, a cradle to grave analysis of the complete impact suggests it is far from being a "clean" source. The impact of mining and refining of uranium; radioactive emissions to air and water during operations; accumulation or transport of highly radioactive spent fuel; the need for decontamination, demolition and disposal of structures after functional lifespan; and the

health effects on miners, operators and neighbors are all significant adverse hallmarks of this industry.

We ask for clarification on what aspects of GNEP will be considered “programmatic.” The GNEP PEIS must identify and assess the environmental impact of the entire program and its long-term risks and consequences. Considering the track record of previous reprocessing efforts in the U.S. and abroad, communities hosting the reprocessing facility should be made aware of the risk of contamination and the resulting costs of health care and cleanup.

**The Purpose and Need are framed too narrowly to conform to NEPA requirements.**

The “Purpose and Need” should be framed generally so that genuine alternatives can be considered for safely resolving the accumulation of spent nuclear fuel at power plants. Basing the decision to do or not do a program because of too narrowly focused purpose is contrary to NEPA and does not comport with the law.<sup>3</sup>

True alternatives for safe storage must be identified and analyzed. However, DOE must not consider any alternatives that would dispose of the waste in such a way that it is irretrievable. Given the possibility of future innovations, which may provide for safer disposal or of discoveries of greater risks at any one site than previously foreseen, it is necessary *ipso facto* that all disposal options be reversible. Although many alternatives may exist, at a minimum DOE must consider Hardened On Site Storage (HOSS) at existing nuclear facilities as an alternative. If the management of spent nuclear fuel is acknowledged as a need to be addressed by this Program then additional alternatives, such as HOSS, should be considered as a solution to the more broadly framed need (for more, please see below).

The purpose and need of this proposal must be broadened so that genuine alternatives can be considered for safe disposal of the spent nuclear fuel accumulating at power plants and resolving the nations energy needs.

Similarly, if reducing carbon emissions is part of the stated purpose of the program, then we call for an analysis of a Global Non-Nuclear Energy Partnership alternative to reducing greenhouse emissions.

**Hardened On-Site Storage (HOSS) should be considered as an alternative.**

As noted above, when the purpose and need for the project is defined sufficiently broadly, alternative means of addressing the problem of accumulating nuclear waste besides GNEP must necessarily be considered in the PEIS. Any number of such alternatives may exist, but at a minimum HOSS at existing nuclear facilities should be considered. HOSS is a presently available technology that could make storage of high-level waste at its current locations significantly less vulnerable to accident or terrorist attack, without the proliferation and transportation risks associated with the GNEP proposal. Yucca Mountain is not expected to receive waste until a date significantly far off in the future. HOSS should be considered as a means of enhancing the safety of on-site storage prior to the opening of Yucca Mountain, as well as the on- site storage that will continue to be necessary afterward given that facility’s limited capacity.

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<sup>3</sup> Simmons v. U.S. Army Corps of Engineers, 120 F.3d 664 (7<sup>th</sup> Cir, 1997)

**Long-term costs must be more thoroughly analyzed.**

As government subsidies represent the commitment of the irretrievable resource of taxpayer's dollars, analyses of projected costs for elements of the GNEP program and real alternatives must be central to the PEIS.

What is the comparison of costs to build enough nuclear power plants to replace carbon-emitting plants vs. the costs of the same capacity for solar or wind-powered energy generation? Please calculate the costs of building the plants, reprocessing facilities, fission product decay storage, shallow land disposal of spent solvents, krypton compressed gas decay storage, any necessary geologic disposal facilities, transportation of SNF and reprocessing waste, operation expenses, health costs for treatment of occupational illnesses and accident victims and the costs of security for temporary and decay storage facilities for the duration of storage interval. Please compare that to other, safer means of generating energy by completing a credible cost benefit analysis.

The GNEP PEIS must fully analyze the cost to taxpayers for compensation to workers at the GNEP facilities for illnesses contracted as a result of their activities as well as full "cradle-to-grave" cost of cleanup and DD&D of the facilities at their expected end of use.

**The GNEP PEIS must thoroughly consider the risks of contamination, accidents and acts of terrorism that could result from the long-term storage of highly radioactive material at proposed facilities.**

We are concerned that GNEP as proposed would not resolve the problem of risks associated with on-site storage of spent nuclear materials, but would simply transfer the storage location, thus adding transportation risks to the storage risks.

The DOE issued Department-wide guidance on December 1, 2006 entitled "Need to Consider Intentional Destructive Acts in NEPA Documents." We note first that DOE should do the right thing and issue final guidance, especially given the many NEPA processes, from nationwide programmatic environmental impact statements to site-specific environmental assessments that are now currently scheduled. But for now the interim guidance states, "DOE National Environmental Policy Act (NEPA) documents, including environmental impact statements (EISs) and environmental assessments (EAs), should explicitly address potential environmental consequences of intentional destructive acts (i.e., acts of sabotage or terrorism)." This GNEP PEIS should respond to the Ninth Circuit Order and new DOE guidance by analyzing intentional destructive acts during transportation of the SNF, interim storage while awaiting reprocessing, the plutonium reprocessing itself, and particularly decay storage of fission products. We respectfully suggest that DOE should include analyses of Intentional Destructive Acts in all future DOE NEPA processes.

What will the impacts be from an accident or terrorist attack at GNEP? What emergency response services are going to be available should this happen?

What will be the impacts of an accident or attack during transportation? What emergency response services are going to be available should this happen?

How will the GNEP PEIS address Design Basis Threats?

Nuclear technology can well be a target for terrorism, and GNEP could very well exacerbate existing terrorism locally, regionally and internationally. The presence of the United States in other countries has had a long history of being a prime terrorist target. How would GNEP,

controlled by the United States, be an exception to this well-known fact? Any and all possible terrorism attacks must be considered. Please include an analysis of possible terrorist attacks on the GNEP facilities and on transports for the nuclear waste. Please include an analysis of how terrorism could be encouraged by GNEP. Moreover, why does the United States plan to fight the war on terror and simultaneously create new potential terrorist targets?

Nuclear technology is prone to accidents. Any and all facility and transport accidents must be considered in the GNEP proposal. We request that all accident scenarios be explored. Please include analysis of the impacts from an accident such as Chernobyl. How will the global public be protected from such scenarios? Please consider the accident at Mayak, where the Russian reprocessing facility exploded. In 1957 a waste tank at the Soviet Union's Mayak reprocessing facility near Kyshtym exploded contaminating almost 6,000 square miles. The release from this explosion was the largest in a whole series of discharges of all forms of radioactive waste to the environment in this area. Please provide written protocol and procedures for emergency responders within a 50-mile radius.

**The PEIS is not ripe for evaluation without more details on reprocessing methods and specifications for purity of separated components.**

It has been stated that the GNEP program will use an aqueous reprocessing method developed at Argonne National Laboratory called UREX+<sup>4</sup> that will involve five solvent extraction steps (UREX, CDC-PEG, NPEX, TRUEX, Cyanex 301), which thus far has only been demonstrated at small scale in hot cells at the lab. The Argonne Model for Universal Solvent Extraction (AMUSE) did not match analytical results when uranium loading of the solvent was high. "... a stable solvent system is still required for actinide/lanthanide separations - Cyanex 301 will work at the laboratory scale, but its stability makes it an unlikely candidate for industrial processing."<sup>5</sup>

It is unlikely that a true assessment of the environmental impact of large-scale implementation of a GNEP reprocessing method can be done until the exact method is defined. The PEIS is not ripe for evaluation without precise knowledge of solvents and processes to be used or of the realistic purity of the resulting separated components. We note that a high degree of purity of technetium, americium and curium is required in order for success in transmutation and fast reactor fuel. If processing the fuel to this degree of purity proves to be prohibitively costly, what will be done with the unusable separated material? Will the fuel for the fast reactors be fabricated at the reprocessing facility or will the separated materials be shipped to a fabrication facility?

**Fast reactors do not yet exist to utilize "Advanced Fuel." Therefore, the PEIS must describe and analyze where fabricated fuels and separated materials will be stored until they can be used.**

In the proposed GNEP scheme, the transuranic actinides would be destroyed by recycling them to power reactors, where they would be fissioned and thus converted to shorter-

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<sup>4</sup> George Vandegrift et al., Design and Demonstration of the UREX+ Process Using Spent Nuclear Fuel, Argonne National Laboratory, U.S. Department of Energy, June 2004.

<sup>5</sup> Ibid.

lived products. Complete destruction of actinides is not feasible in conventional light water power reactors, so specialized fast-neutron “burner” reactors—possibly a great many of them—must be built for this purpose. According to one estimate, it would take one 300 megawatt (MWe) burner reactor to mop up the actinides discharged by three or four 1,000 MWe light water reactors. If so, the United States would need 25-30 of these reactors just to deal with the actinides from existing U.S. reactors. And since not even advanced burner reactors are capable of destroying all actinides in a single pass, spent burner reactor fuel would have to be reprocessed and recycled several times before the actinides could be reduced significantly.

Taking into account past experience, how long will it take to design, build and test this fleet of reactors? Where will the separated materials or fabricated transmutation fuel be stored until then? How much material will be stored?

**Monitoring of the GNEP facilities must be specified in the PEIS.**

Details should be included on how environmental, safety and security monitoring will be performed and who will do it. The costs of monitoring must be included in the projects.

**What alternative locations are being considered for the AFC Research Facility?**

According to the DOE description of the GNEP program, Los Alamos National Lab is a potential site for an Advanced Fuel Cycle Research Facility. That facility will do research and development on a process for separating constituents of spent nuclear fuel, prepare samples of candidate fuels from some of the separated materials, test the materials and then dispose of the rest of the separated materials. These candidate fuels will be tested in a fast neutron flux environment created by the proton beam accelerator at the Los Alamos Neutron Science Center. This “Materials Test Station” is intended to simulate the conditions that will exist in the proposed, but not yet realized, fast burner reactor.

“To understand how to fabricate robust transmutation fuel, Los Alamos is using the unique resources in its Plutonium Facility and Materials Science Laboratory to develop advanced ceramic fuels. After being tested on a small number of samples, the same processes will be scaled up to higher volumes, using safe remote techniques in ‘hot cells’ at the Laboratory’s Chemistry and Metallurgy Research Facility.”<sup>6</sup> Please list all the consequences of these activities.

**How much spent fuel will be shipped to the AFC Research Facility?**

When one of the undersigned commentators asked a DOE official at the Los Alamos GNEP public scoping meeting how much SNF could potentially come to the AFC Research Facility, the official’s reply was “Up to 100 metric tons.” The draft GNEP PEIS should disclose in writing how much SNF could come to the AFC Research Facility. If SNF were transported to the Los Alamos National Laboratory (LANL), where would it be stored? Would it be stored at Technical Area-55 (site of plutonium pit production), the existing Material Science Laboratory, and/or the “Chemical and Metallurgical Research Replacement Project” (CMRR; an advanced plutonium facility now under construction), or the proposed future Radiological Sciences Institute?

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<sup>6</sup> Los Alamos Science and Technology Magazine, January 2007 <http://lanl.gov/science/1663/global.php>

Will the listed amounts of “Materials At Risk” and the accident scenarios in the current draft LANL Site-Wide Environmental Impact Statement (SWEIS) be adjusted to account for this? How much/what kind of waste will be generated from fuel development and testing process? Where will it be disposed of?

“The Materials Test Station proposed for the Los Alamos Neutron Science Center [LANSCE], will expose candidate fuels and cladding materials to copious amounts of fast neutrons... mimicking the extreme conditions found in the advanced burner reactor.”<sup>7</sup> If the selected research facility is not LANL, will fuel candidate samples be shipped to LANL for testing in the fast neutron environment of the Material Test Station at LANSCE?

During the R&D of the transmutation process, separated americium, curium and possibly technetium will be tested to determine if they can be successfully transmuted to other elements for disposal. What will be the disposal path for irradiated fuel candidate samples, cladding materials and any irradiated structural materials? What waste byproducts will be produced, where will they be disposed of, and what are the related costs?

**Decay storage of billions of curies of separated strontium and cesium for hundreds of years creates a large, lethal liability for the sites, with the potential for accidents, spills, seismic damage, intentional destructive acts and terrorism.**

It is estimated that after 30 years of reprocessing spent fuel, 7.5 to 12.4 billion curies of strontium and cesium fission products will accumulate at the reprocessing facility.<sup>8</sup> This is a very large, very lethal source of radiation.<sup>9</sup> And sounds like a very, very bad idea. Is DOE fully informing the communities interested in hosting the reprocessing facility of the catastrophic potential for contamination from accidents, structural deficiencies or acts of terrorism? If not, the draft GNEP PEIS must do so. What level of security will be needed to protect this decay storage from Intentional Destructive Acts?

A cumulative impact analysis must include transportation and decay storage.

**The Timeline for this PEIS must be stated.**

The draft PEIS must include a timeline for the GNEP proposal. This timeline must show the commencement and conclusion of activities at all three facilities relative to one another, including construction, material transfer, waste removal, operations and D&D. In particular it must indicate where along this continuum R&D is expected to be completed, when international elements are intended to begin, and the anticipated conclusion of the GNEP project as a whole, with all projected cleanup and DD&D costs. It is fiscally irresponsible for the government to embark on this huge and potentially harmful program without doing so.

GNEP will have little or no impact on the first group of new U.S. nuclear power plants now in the planning stage. The full actinide recycle scheme envisaged by GNEP could not be

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<sup>7</sup> Ibid.

<sup>8</sup> Robert Alvarez, *Radioactive Wastes and the Global Nuclear Energy Partnership*, Institute for Policy Studies, April 2007, p. 15

<sup>9</sup> In 2003 the National Research Council’s Board on Radioactive Waste Management referred to 131 million curies of separated cesium and strontium as “the nation’s most lethal single source of radiation other than inside an operating reactor.” NRC, 2003, pp. 52-59.



deployed for decades—too far into the future to mitigate the uncertainty over spent fuel confronting prospective investors during the next few years, when decisions on whether to proceed with these projects will be made. Exactly when will GNEP have an impact?

**Life-Cycle Costs Must be Stated.**

What will be the entire life cycle costs of the GNEP proposal? Please include the cost of siting process, construction, all operating costs, all radiological and non-radiological waste disposal facilities, interim storage, environmental monitoring using the most sensitive methods, transportation, health costs for workers and members of the general public, security, accident cleanup, victim health care and compensation, general cleanup and all necessary facility DD&D.

The costs of reprocessing envisaged by GNEP are uncertain, since several component technologies are still not only undefined but very sketchy. But a useful benchmark is conventional PUREX reprocessing and recycling of MOX fuel, for which cost information is available. This information makes clear that the conventional MOX fuel cycle is more costly than the alternative of not reprocessing. There is no dispute about this, although opinions differ about how large the cost penalty really is. Please compare the costs of conventional reprocessing and use of MOX fuel to GNEP costs.

In addition, the long-term costs of investing in nuclear energy must be analyzed. Include a cost comparison of the life cycle cost for generating enough nuclear power to replace carbon emitting plants vs. the cost of the generating the same capacity through renewable sources, including solar and wind and sustainable biomass.

Energy Secretary Sam Bodman recently suggested that GNEP has the potential to postpone a second U.S. waste repository indefinitely, even if nuclear power growth does resume. This appeals to politicians, who are almost desperately eager to avoid another politically painful repository-siting process. But offsetting this promise is the requirement, also implicit in GNEP, to find sites for new reprocessing plants, fuel and target fabrication facilities, and fast spectrum burner reactors. Each of these may be easier to site than a second waste repository, though perhaps only marginally so. But GNEP is likely to increase the quantity of required nuclear sites, possibly by a large number. Please compare these costs.

**The GNEP proposal should suggest consultation with an international body, such as the International Atomic Energy Agency (IAEA), which is a branch of the United Nations.**

Otherwise this proposal may further exaggerate the disparity and tension between nuclear and non-nuclear States by requiring non-nuclear States to be dependent on nuclear States for their source of energy. GNEP is by title and definition global in scope; therefore, the United States government must first conduct extended dialogue with an international body, such as the International Atomic Energy Agency (IAEA), before such a proposal is even considered. If the international agreements and procedures are not firmly established, people all over the world could be exposed to nuclear and toxic contaminants without their consent.

Which countries will be involved in GNEP and to what capacity? How is this decision being made? What international body will be regulating these operations? How does the United

States government plan to involve the public from other countries that may host GNEP? Will the input of non-U.S. citizens be equally considered in this proposal?

**The PEIS must completely evaluate risk of proliferation inherent in both its domestic and international alternatives.**

The NOI states with respect to the international programmatic alternatives, “Because the designs for these reactors are not yet determined and DOE is not proposing any specific action to make the reactors available, the GNEP PEIS will include only a general, qualitative analysis of the potential impacts on the United States or the global commons that might be involved with such activities.” It is unclear in context how general DOE intends to keep the analysis of such impacts, which presumably include nuclear proliferation. Proliferation impacts can be analyzed closely and thoroughly without regard to reactor design or location. In addition, the NOI is silent on the evaluation of the potential proliferation impacts of its domestic reprocessing program. It is also essential that the PEIS evaluate the proliferation risks associated with transit and long-term storage of fissionable nuclear materials generated within the United States. The two reprocessing technologies that DOE is currently researching, UREX and pyroprocessing, are not an effective means of deterring proliferation, as the safety features of these can be easily undone using existing PUREX technology.

**The amounts and types of waste that existing waste disposal facilities (the Waste Isolation Pilot Plant and Yucca Mountain) or future disposal sites would be required to dispose of must be fully analyzed.**

The draft PEIS must identify all waste streams from the entire nuclear energy and waste life cycle and analyze all disposal options.

Although GNEP promises significant reductions in long-lived isotopes to be disposed of in repositories, inevitably some will remain. The biggest regulatory challenge at Yucca Mountain—demonstrating compliance with radiation protection standards for up to a million years—will not be much different with or without GNEP.

Actinides are not the only long-lived constituents of nuclear waste. A small number of fission products also have very long half-lives, notably technetium-99 (212,000 years) and iodine-129 (16 million years). Some repository risk studies suggest that these isotopes would contribute more than most actinides to the radiation dose that could be received by the repository’s neighbors in the far future. Why go to the trouble of removing actinides from the waste if these fission product isotopes are still there? No credible scheme for separating and transmuting them has yet been proposed.

**The possible extra risks to the public of any new facility constructed as a “design-build” must be considered.**

Department of Energy Manual 413.3, *Project Management for the Acquisition of Capital Assets*, cautions that “design-build can be used most successfully with projects that have well-defined requirements, are not complex, and have limited risks.” We note the history of cost overruns associated with design-build, the most compelling current case being the vitrification plant to glassify high-level radioactive waste at the Hanford Nuclear Reservation in Washington State. DOE’s own track record consistently demonstrates that excessive cost

overruns are more the rule than the exception for large projects even when they are planned in advance, a compelling case in point being Livermore Lab's National Ignition Facility. The draft GNEP PEIS should attempt to vigorously defend "design-build" if it is to be used at any of GNEP's future facilities.

**The GNEP PEIS must analyze whether alternative missions for LANL would be of greater economic benefit to all of northern New Mexico.**

Please state if Los Alamos County is expected to continue to receive a disproportionately large percentage of the economic benefits from the Lab and remain the richest county in the U.S. The baseline of the economics of northern New Mexico without the Lab must be known.

**Environmental Justice.**

The Environmental Justice Executive Order requires each agency to "ensure that public documents, notices, and hearings relating to human health or the environment are concise, understandable, and easily accessible to the public." (Section 5-5) Please do so in the draft GNEP PEIS.

**All socioeconomic impacts that may potentially affect communities must be analyzed.**

How many jobs will be generated? How long will these jobs last? Will people be brought in from outside of the area to work at these facilities and if so what positions will they fill? Impacts to tourism must be analyzed. Impacts to property value must be analyzed.

**All GNEP considerations must stringently minimize the use of our precious water.**

**Cumulative Impacts of several facilities must be addressed.**

Please address the impacts of the 50-mile radius overlapping DOE facilities, including Sandia National Laboratories, current LANL operations, Draft SWEIS LANL expanded operations and Complex 2030 activities. Please be specific to water, air and soil impacts, environmental justice, transportation, economic impacts including tourism, emergency preparedness, and waste treatment and disposal.

**Unavoidable Adverse Environmental Impacts must be considered.**

Unavoidable adverse environmental impacts are impacts that would occur after implementation of all feasible mitigation measures. Please list all mitigations needed for all proposed sites and all unavoidable adverse environmental impacts.

Respectfully Submitted,

Scott Kovac  
John Witham  
Nuclear Watch New Mexico  
551 W. Cordova Rd., #808  
Santa Fe, NM 87505  
Phone and fax: 505.989.7342  
www.nukewatch.org