



**OFFICE OF THE ATTORNEY GENERAL  
STATE OF ILLINOIS**

**Lisa Madigan**

March 29, 2007

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

*Re: GNEP PEIS Comments*

Dear Mr. Frazier:

Please accept these comments on behalf of Illinois Attorney General Lisa Madigan concerning scoping for the proposed Global Nuclear Energy Partnership (GNEP) initiative programmatic environmental impact statement (PEIS).

While we support in principle and appropriate context 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 commend DOE on its decision to conduct a PEIS rather than a project-specific EIS for the Technology Demonstration Program as originally proposed in the Advance Notice of Intent issued last year, as we believe it is essential that the environmental consequences of the GNEP program as a whole be fully assessed at this stage. However, we are concerned by language in the PEIS Notice of Intent (NOI) suggesting that the scope of the PEIS will be inappropriately time-limited, will not fully assess associated costs and risks, and will not consider appropriate alternatives.

Our specific comments are as follows:

1. *The PEIS must comprehensively address the long-term consequences of the fully implemented GNEP proposal.* The NOI states, appropriately, that the PEIS will evaluate the “programmatically elements of GNEP.” However, the NOI does not specifically describe what aspects of GNEP will be considered “programmatically” and therefore subject to evaluation in the PEIS. In addition, the NOI describes the “programmatically proposal” as a plan “to *begin* to recycle spent fuel and destroy the long-lived radioactive components of that spent fuel.” 72 Fed. Reg. 331 (January 4, 2007) (emphasis added). 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 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. 10 C.F.R. § 1021.104(b). Accordingly, the GNEP PEIS must programmatically review the entire GNEP proposal to “establish a ‘closed’ fuelcycle by recycling spent nuclear fuel,” as it is described elsewhere in the NOI. 72 Fed. Reg. at 333 *et seq.* 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 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.
2. *The “purpose and need” for the program should be broadened.* DOE defines the “purpose and need” for the proposed action as, “to encourage expansion of domestic and international nuclear energy production while reducing risks associated with nuclear proliferation, and to reduce the volume, thermal output, and radiotoxicity of SNF before disposal in a geologic repository.” 73 Fed. Reg. at 333. In other words, given that the only engineering means to reduce the radiotoxicity of SNF is through reprocessing and re-use, the purpose of the project is to conduct reprocessing and re-use. Not surprisingly, therefore, only one alternative addresses this purported purpose: reprocessing and re-use. Accordingly, the NOI proposes only that one action alternative, its GNEP proposal, plus the required No Action alternative. Using the purpose and need definition in this manner to stack the deck in favor of a specific desired plan of action is not allowed under NEPA. See Simmons v. U.S. Army Corps of Engineers, 120 F.3d 664 (7<sup>th</sup> Cir. 1997) (NEPA alternatives analysis is NEPA “is to be an evaluation of alternative means to accomplish the general goal of an action,” and an agency cannot use an overly narrow purpose and need definition to “restrict its analysis to those alternative means by which a particular applicant can reach *his* goals”). Here, the general goal of the proposed action is to safely address the problem of accumulating nuclear waste, which can be accomplished through other action alternatives

(see below re hardened on-site storage). It is not appropriate to define the goal as reprocessing, such that reprocessing is the only alternative that meets it.

3. *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 appropriately 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 in the future, and 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.
4. *The PEIS must consider all long-term risks and costs associated with contamination at reprocessing facilities.* To date, every reprocessing facility in the US – including both the only private commercial reprocessing facility in the United States, West Valley in New York State, and federal reprocessing sites such as Hanford associated with nuclear weapons production – has resulted in severe to catastrophic environmental contamination. DOE's cost estimate for cleanup of the reprocessing portion of the West Valley site was \$5.2 billion, and its cost estimate for cleanup of the nuclear weapons production facilities at Hanford, Savannah River, and Idaho National Environmental Laboratory is over \$100 billion. Overall, the most radioactively contaminated sites on Earth are associated with waste reprocessing, including Hanford and Lake Karachai in Russia. Given this track record, it is essential that the PEIS take into account the probability of contamination at the proposed GNEP facilities, and include in its evaluation a full life-cycle cost analysis that encompasses the environmental and monetary costs of such contamination. As discussed above, this analysis must consider not merely likely contamination associated with facilities that will be part of the "beginning" stages of the proposed GNEP initiative, but the total number of facilities that will be required in the long run to implement the proposal. Obviously, site-specific contamination impacts cannot be evaluated until sites are chosen at a later date, but information and accounting tools are plainly available to estimate such costs generically.
5. *The PEIS must consider all risks associated with long-term storage of radioactive materials at proposed reprocessing 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. This concern is heightened by Illinois' experience with the General Electric reprocessing facility in Morris – one of the proposed sites listed in the NOI –

where 772 tons of spent fuel was previously shipped and is now being stored indefinitely because of major equipment failures and technical problems that prevented the project from ever getting off the ground. Attempts to construct fast reactors elsewhere in the world – including the Clinch River facility in Tennessee, the Rokkasho facility in Japan, and the THORP facility in the UK – have resulted in similar severe implementation problems, from delays and cost overruns to accidents. Only three fast reactors in the world are currently in operation. It has been estimated that the GNEP proposal, fully implemented, would require 3 to 4 fast reactors for every light water reactor in order to utilize all of the plutonium produced through waste reprocessing; and in the absence of a sufficient number of fast reactors, the separated plutonium will need to be stored. It is essential that the PEIS estimate the amount of nuclear material that is likely to be stored under the GNEP program, taking into account, *inter alia*, (i) a realistic time frame for constructing reprocessing facilities, (ii) the number of reactors necessary to utilize the reprocessed nuclear materials, (iii) the length of time required to construct that number of reactors, taking into account past experience with such efforts, and (iv) DOE's stated intention, regardless of the pace at which fast reactors are constructed, to store strontium and cesium above ground for hundreds of years to allow it to decay.

6. *The PEIS must evaluate all proliferation risks of 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." 72 Fed. Reg. at 335. It is unclear in context how "general" DOE intends to keep the analysis of such impacts, which presumably include nuclear proliferation. But there is no good reason proliferation impacts cannot be analyzed closely and thoroughly without regard to reactor design or location. In addition, the NOI is silent concerning evaluation of the potential proliferation impacts of its domestic reprocessing program. It is essential that the PEIS evaluate the proliferation risks associated with transit and long-term storage of fissionable nuclear materials generated within the United States. We note, in this regard, that 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.

Thank you for the opportunity to submit these comments. If you have any questions, please feel free to call me at 312-814-3772.

Very truly yours,

/s/

Ann Alexander  
Environmental Counsel to Illinois  
Attorney General Lisa Madigan