

8 February 2006

A.J. Eggenberger, Chairman  
Defense Nuclear Facilities Safety Board  
625 Indiana Ave. NW, Suite 700  
Washington DC 20004

Dear Mr. Eggenberger,

Thank you very much for your letter of January 30, 2006 in response to my letter of December 13, 2005. I truly appreciate the promptness of the response and the fact that you discussed each of the possibilities regarding unaccounted for plutonium at Los Alamos National Laboratory. However, the substance of the response on each count indicates some misunderstanding of what I was requesting of the DNFSB. Perhaps this is because I did not elaborate upon what I meant when I wrote

I am writing to request you to initiate an urgent and thorough investigation into Los Alamos weapons plutonium waste accounts, including the waste portion of the NMMSS account.

I believe that the issues raised by the IEER report *Weapons Plutonium in Los Alamos Soil and Waste: Environmental, Health, and Security Implications* are well within the purview of an investigation by the DNFSB. Further, the need for an investigation by your Board is far greater now than when I wrote you because it came to my attention shortly thereafter that the DOE has apparently decided not to pursue a serious investigation.

Unbeknownst to me at the time I wrote to you, the DOE issued a statement to the press in early December essentially dismissing the concerns raised in the report. LANL officials were quoted in the press as saying that they “thought they had put that to rest” the year before (Andy Lenderman, “Feds Deny plutonium missing from lab,” *New Mexican*, December 3, 2005, attached). Further, the DOE and the NNSA have not responded to my letters, despite a promise, made verbally during my November 2005 press conference in New Mexico, to seriously investigate the issue. The dismissal of the problem as old hat by the DOE does not even take into account the fact that IEER’s November 2005 analysis is a new analysis that was done in the last half of 2005. DOE could not possibly have addressed the issue of the NMMSS account overstating wastes by at least 300 kilograms because the analysis had not been published as yet. This is the first time that an analysis has shown that the nuclear materials safeguards account (the NMMSS account) has **overstated** the amount of plutonium in waste. This is a health, environmental, and security issue of the first magnitude. I include security here, since an unresolved

discrepancy in the safeguards account is itself a security issue independent of any eventual finding about whether or not it may have left the site in an unauthorized fashion.

Let me take up the issue in more detail so that I can clarify what I meant when I asked you for a thorough investigation of the problem.

It is possible that the unaccounted for plutonium may be in the LANL waste – either buried waste or retrievably stored waste or some combination of the two. You pointed out that the audit and certification of DOE's WIPP activities is an EPA responsibility. I am aware of that.

As regards the possibility that it is in buried waste, I am also very familiar with the June 2000 report you cite in your letter. Indeed, the report was prepared by the DOE in response to an IEER report, *Containing the Cold War Mess*, issued in 1997 (available at <http://www.ieer.org/reports/cleanup/index.html>), in which discrepancies in waste data at various sites, including LANL, were discussed in detail. Then-Assistant Secretary of Energy, Carolyn Huntoon, sent me the report when it was made public with a personal cover letter, which is posted on IEER's website at

<http://www.ieer.org/comments/waste/tru2ieer.html>.

The June 2000 DOE report did improve the data on buried waste compared to prior data, which were shown to be in considerable error. My analysis of LANL plutonium attributed the largest reasonable value to plutonium in buried waste that is contained in the updated and improved DOE data. Of course, it is possible that there may be more in the waste, since the data still have significant deficiencies.

I have also taken the latest WIPP data into account. When the WIPP and buried waste data are put together, the largest reasonably attributable value of plutonium to LANL waste streams is just under 300 kilograms. This leaves more than 300 kilograms unaccounted for because the nuclear materials safeguards account attributes 610 kilograms to waste streams.

The 610 kilograms attributed to waste in the nuclear materials safeguards account is suspiciously large for another reason. If 610 kilograms of plutonium was actually discharged to waste streams, it means that about 1 kilogram of plutonium was discharged to waste per warhead produced at LANL. This is a fantastically large amount of waste per warhead. For instance, it is about 20 times the value of waste per warhead generated at Rocky Flats, which was not known as an exemplar of environmental probity. If true, the amount of waste per warhead implies that production operations at LANL were far more dirty and wasteful than those at Rocky Flats. It also implies shockingly lax safety and production procedures. For instance, at such levels of waste production, variations in waste per warhead could conceivably have created criticality risks in some situations. It is possible that discharges of plutonium to the air and to wastewater were much larger than has been acknowledged, notably in the early years.

LANL continues to produce plutonium pits. If any of the past lax practices continue, it is clear that fundamental changes to pit production would be needed to ensure that plutonium was being handled safely and that waste accounting was consistent with the security, health, and environmental issues associated with this weapon-grade material. Hence, an analysis of the historical problem of waste generation per warhead and the associated working conditions and environmental discharges is not only within the purview of the DNFSB, it would seem to be a basic requirement of your charter to oversee DOE sites to ensure the protection of public safety, health and the environment. I request therefore that your investigation have the following scope (at least):

- Investigate historical LANL plutonium handling, accounting, and production practices in regard to workplace safety, public and worker health, and environmental protection, notably as it relates to warhead production and handling of waste streams.
- Investigate which of the lax historical practices, if any, are still in effect and make recommendations for changing them to reduce the amount of waste per warhead, improve safety, and protect the public and the environment.
- If the amount of plutonium in waste is as large as 1 kilogram per warhead and if it is likely to be in the buried waste, make recommendations regarding the investigations for remedial action that should be undertaken by the DOE in order to protect workers, the public and the environment from the far greater hazard that plutonium in buried waste will present compared to what is believed today.

An investigation along the above lines is moreover rendered very urgent by the emerging role of LANL as the main or perhaps the sole producer of plutonium pits for the U.S. nuclear arsenal. I believe that that makes your role more essential and central.

If your investigation reveals that actual waste production was a lot lower than the 610 kilograms now booked as waste in the NMMSS account, it would, of course, have the gravest national security implications. It would imply that plutonium likely left the Los Alamos site in some surreptitious, unaccountable manner. That conclusion would be premature today, of course, as I have repeatedly stated. But it cannot be ruled out in view of the strange state of the data and large amount of plutonium in waste per warhead in the materials safeguards account.

I realize that a conclusion that the plutonium was not in the waste streams would be beyond your purview, perhaps to be taken up by other agencies of the government, or by Congress, or both. But before alarms are raised about diversion of plutonium, it is essential to address prior issues, all of which concern health, safety, and the environment, which are, I believe, central to your charter. The issues of how LANL handled plutonium, why so much was attributed to waste accounts, what the implications for safety, health and the environment have been in the past and are at present, are essential to ensuring the safety of workers and the public as well as the health of the environment. That is the crucial investigation I am requesting of you. I know it has also been requested by many other national and local groups in a recent letter to you. As I have noted, your

investigation is now needed much more in view of the shocking and cavalier dismissal of the vital issue on the part of the DOE/NNSA.

Again, I would like to thank you for the seriousness with which you took my letter and the promptness with which you responded. If you have any questions regarding the intended scope of my request or any other matter relating to the report or my calculations and conclusions, please do not hesitate to contact me. My phone number is 301-270-5500 and my e-mail is [arjun@ieer.org](mailto:arjun@ieer.org)

Yours sincerely

A handwritten signature in black ink that reads "Arjun Makhijani". The signature is written in a cursive, flowing style.

Arjun Makhijani, Ph.D.  
President, Institute for Energy and Environmental Research

cc: Samuel Bodman, Secretary of Energy  
Ambassador Linton Brooks, Administrator, NNSA  
Dr. Charles H. Keilers, U.S. DOE-LAAO  
Dr. Robert Kuckuck, Director of LANL  
John Ordaz, U.S. DOE-LAAO  
Signatories of the January 26, 2006 group letter to Mr. Eggenberger