

**From:** Michael Reimer [<mailto:geomike5@att.net>]

**Sent:** Thursday, March 16, 2017 3:15 PM

**To:** Taylor, Renee <[Renee.Taylor@nrc.gov](mailto:Renee.Taylor@nrc.gov)>; Snyder, Amy <[Amy.Snyder@nrc.gov](mailto:Amy.Snyder@nrc.gov)>

**Subject:** [External\_Sender] letter for EDO on review initiative

Hello Renee,

It was nice to talk with you yesterday. Below is the letter I am sending to Mr.McCree. I include it as the body to this e-mail as some people do not like to open attachments. I hope it is transmitted OK as sometimes special characters or enhancements are not translated (underlines, italics, etc.). If not, please let me know and I will resend it as an attachment.

I am also sending a copy to Amy Snyder. Thank you for your help to see that this letter is properly forwarded.

Sincerely,

Michael Reimer, Ph.D.

The Honorable Victor M. McCree  
Executive Director for Operations  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001  
e-mail to attention of Renee Taylor, Administrative Assistant

March 16, 2017

Sir:

I am writing as a person with interest to ask that the Nuclear Regulatory Commission reconsider the approval of License SUC1593 for the U.S. Army to possess depleted uranium at various military installations in the U.S. Part of the possession license required an Environmental Radiation Monitoring Plan (ERMP) that included monitoring for DU away from the sites identified as most probable where DU spotting rounds from the Davy Crockett weaponry was used in training in the 1960s. The sites where DU is most likely to be located are called Radiation Controlled Areas (RCA). The specific base needing attention in my request is the Pohakuloa Training Area (PTA), Hawaii County, Hawaii.

I trust that you will find cause to reevaluate this approval on your own initiative.

The sampling plan for PTA as presented calls for a single sediment sample to be collected at a single location site several times a year. The four identified locations most likely to contain DU from the training are topographically higher than the sampling

site. The sampling site is off PTA proper. Scant information is provided concerning the methods used for sample collection and analysis and by nature of its paucity, it is very difficult to clarify any arguable base for protesting the terms of the license. What is presented, if given to any reasonable person familiar with geologic sampling procedures, is so egregiously defective and disparate from accepted sampling procedures, it must be deemed fatally flawed.

I had earlier written a review of the ERMP for Pohakuloa and e-mailed it to Ms. Amy Snyder. It is located at ML 17010A202.

Here, for succinctness, I will present one issue that should demonstrate why the ERMP is untenable for PTA.

The ERMP for PTA proposes to collect one sediment sample several times a year at a location several miles west northwest of the RCAs. The sampling site is at a lower elevation than the RCAs. There are several levels of drainage channels in the area, first order, second order, third order and so on. The Army acknowledges and I do not challenge the observable fact that the scarce soil and the bedrock of lava flows are highly permeable and water from precipitation percolates through the cover very quickly. There are no permanent streams in the area; they are all intermittent. This condition does not permit sediment from the RCAs to be carried far enough to reach the proposed sampling area, and, in fact, the Army has not been able to indicate that it does.

It is somewhat disturbing that the NRC Review Staff makes the statement that:

“The NRC staff reviewed the figures in each ERMP showing the topography of the base, the RCAs, direction of surface water runoff, and proposed sampling location(s). The NRC staff found the sampling locations to be downgradient from the various RCAs and therefore adequate for tracking and trending purposes to discern if there is any significant transport of DU from the RCAs through the actions of surface water runoff.”

The issue that the gradient is predisposed for the flow of water from the RCAs to the sample site is completely superficial. If a proper map had been presented it would show that between the RCAs and the sample site are several recent lava flows. These flows present a formidable barrier to the general flow direction of water. A lava flow is in effect a berm to water flow. For the most part, the water flow would be directed to the northwest away from the sample site.

There is no need for arm waving on this issue. There are available today many stream flow programs that objectively will show the flow characteristics. They are not very complex and many use the Digital Elevation Model data for input. There is no reason that such a program would not have been employed. The NRC should have employed such an approach to confirm or reject the Army contention. Given the permeability of the area and the intermittent nature of the stream flow, it is not revealed if even a 200 or 500 year flood would be sufficient to carry sediment from the most distant RCA to the sample site.

The NRC further states:

“The NRC considers it most likely that only sediment sampling (as opposed to soil sampling) will be needed because it is unlikely that significant soil transport will occur. Regardless, the NRC staff acknowledge the commitment made to sample any significant soil depositions discovered. The methods for sample analysis are commonly utilized methods and the action levels are consistent with those imposed by the NRC in license SUC-1593, LC 17.”

The statement that “...it is unlikely significant soil transport will occur” indicates that there is little knowledge among the NRC review staff about geology and geographic mechanisms. The question to be answered is, where do you think the organic and inorganic particles composing a sediment come from? Granted, you can have wind-blown sedimentation and *in-situ* decomposition of rock, and reworking of sediment for additional transport, but these are minor compared to primary, fluid-characterized soil-transport, especially at PTA. Regarding this single collection site, the staff comment that ‘it is unlikely that significant soil transport will occur’ in effect confirms my contention. It reveals that sediment sampling at this selected site is a ruse. No water-carried sediment from the RCAs is likely to reach the sampling site.

Continuing that statement from NRC, “The methods for sample analysis are commonly utilized methods ...” I will state emphatically that they are not! I firmly believe that such an endorsement is nothing short of embarrassment to the NRC. It again indicates that there is little if any knowledge about this type of sampling program within the review staff of NRC, and that they did not care enough about the appeals of the citizenry to even have the courtesy to look into the citizen concern.

Here I will pose a question. Has anyone on the NRC staff ever heard of the NURE Program? That stands for the National Uranium Resource Evaluation conducted by the Department of Energy and coordinated in large part by the U.S. Geological Survey and many National Laboratories, where hundreds of thousands of samples of various types were collected in the late 1970s in a national program in search of uranium resources. Protocols for sampling were developed to suit the available methods of analysis. Some corporate memory input would have been valuable for the review.

I realize that my words are harsh and likely to initiate an immediate defensive response. It would be sad if that is the case but now that I have your attention, I am presenting an opportunity for you to make necessary adjustments in the ERMP for Pohakuloa. To do less would be showing complicity in intellectual insult and a willingness to participate in the dumbing down of America.

The ERMP at Pohakuloa as presented has very little chance of finding DU. This is further confirmed by the sampling procedure. An example of stated procedure, pouring off any water that may be with the sample and attempting to homogenize it by mashing it around in the collection bag are methods far from standard procedures. Perhaps that is the goal but then in openness and transparency, it should be stated. Approval of the plan in the light most favorable to the Army is the easy way out and approving such

egregious representations by the Army as I have indicated, unfortunately gives the appearance of a rubber stamp. However, if that is the case, then state it.

The citizen concern is genuine. Many, including myself, are frequent users of Mauna Kea County Park, just a few miles from an RCA. Hawaii is a precious asset for the U.S., yet it has a fragile environment. The motto of Hawaii, **Ua Mau ke Ea o ka 'Āina i ka Pono**, (commonly translated as: The life of the land is perpetuated in righteousness) and the mission of the NRC “...**to ensure adequate protection of public health and safety, to promote the common defense and security, and to protect the environment**” can work harmoniously to provide good stewardship of the land and the best protection of its citizens from unnecessary health risks, making sure the ALARA principle is followed.

If you were tasked to develop a monitoring program specifically to avoid finding DU at PTA, what the Army has presented and the NRC endorsed fits that goal precisely. Air sampling should be the primary method of monitoring for DU transport from PTA. If NRC truly supports the contention that any DU at PTA has been pulverized with over 50 years of high explosive shelling to an extent where fragments and intact spotting rounds cannot be found, then it is the aerosol component and its continued resuspension that is of concern. I am aware, and I am sure your staff is as well, that the concerned citizens are more than willing to collaborate with stakeholders to initiate a proper monitoring program.

I realize that the chance of reevaluating the license to include airborne monitoring at PTA is essentially nonexistent but here is an opportunity to at least adjust the single sediment sample collection to have at least a mere semblance of significance.

I trust that I have presented information of serious concerns and that the NRC will take advantage of my request to reevaluate on their own initiative the license SUC1593 for the Pohakuloa component. This is a very important issue, not only addressing the concern of the citizens of Hawaii County, but because it sets precedence for the future on how the NRC will rule when justification for programs they administer is deceptive or disingenuous.

I would welcome the opportunity to work with the NRC on this reevaluation.

Sincerely,

/s/

Michael Reimer, Ph.D.  
Retired Geologist  
[GeoMike5@att.net](mailto:GeoMike5@att.net)