March 30, 2009

Dr. Jacob D. Paz
402 Greenbrier Street #47
Deridder, LA 70634

Dear Dr. Paz:

I am responding to your letter of March 7, 2009, to Mr. Lawrence Kokajko, of the U.S. Nuclear Regulatory Commission's (NRC's) Division of High-Level Waste Repository Safety. You identify recent information about the observed induction of genomic instability in cells as a result of the combined exposure to metal ions and radiation. You ask that the NRC staff review this information as you believe it may have a major impact on NRC's review of an application to construct a repository at Yucca Mountain, Nevada. You also ask why the Environmental Impact Statements (EISs) prepared by the U.S. Department of Energy (DOE) did not fully discuss the potential for impacts arising from the release of heavy metals from the corrosion of waste canisters and how NRC will address this omission.

As you know, NRC received an application from DOE, on June 3, 2008, for a license to construct and operate a repository for high-level nuclear waste at Yucca Mountain. NRC's safety determination and licensing decision will be based on an evaluation of the information provided in the application as well as that considered during a formal adjudicatory (trial-type) proceeding. As a part of this process NRC must determine whether DOE's proposal meets all applicable NRC requirements. These requirements do not address the specific synergistic effects which are the subject of your concern.

As was noted in a December 12, 2003, letter to you, NRC does not have the statutory authority to regulate chemical hazards or the combined health effects from radiation and chemical hazards associated with facilities it regulates. The U.S. Congress gave authority for establishing public health, safety and environmental standards for the proposed repository at Yucca Mountain to the U.S. Environmental Protection Agency (EPA). On September 30, 2008, the EPA published final public health and environmental radiation protections standards for Yucca Mountain. Consistent with the Energy Policy Act of 1992, these are the only public health and safety standards that apply to the Yucca Mountain site. After careful consideration, and review of extensive public comments, NRC incorporated EPA's final standards into our final Part 63 regulations for Yucca Mountain on March 13, 2009, as required by the Nuclear Waste Policy Act.

With regard to your concern about DOE's EISs, the NRC staff agrees that DOE's analysis did not provide an adequate discussion of the cumulative amounts of radiological and non-radiological contaminants that may enter groundwater over time, and how these contaminants would behave in the aquifer and related environment. We found that this failure to adequately characterize potential contaminant release to groundwater and from surface discharge renders that portion of DOE's EIS inadequate. DOE's discussion of these impacts in its EISs is not consistent with NRC's regulations for completeness and adequacy of the discussion of environmental consequences of the proposed action.

Given the importance of groundwater as a natural resource in the arid Yucca Mountain region, we concluded that supplementation is needed to ensure the 2002 EIS and the Repository Supplemental EIS are adequate. The NRC staff's review and findings about the adequacy of DOE's EIS are documented in a September 5, 2008 report, "U.S. Nuclear Regulatory Commission Staff's Adoption Determination Report for the U.S. Department of Energy's Environmental Impact Statements for the Proposed Geologic Repository at Yucca Mountain." This report is available on NRC's website at: http://www.nrc.gov/waste/hlw-disposal/yucca-lic-app/nrc-eis-adr.pdf. On September 8, 2008, the Director of NRC's Office of Nuclear Material Safety and Safeguards, Mr. Michael Weber, informed DOE that additional supplementation is needed to ensure the 2002 FEIS and the 2008 Repository Supplemental EIS are adequate (available at: http://www.nrc.gov/waste/hlw-disposal/letter-to-doe.pdf). On October 3, 2008, DOE replied, stating that it will provide the needed supplement no later than fall of 2009 (available at: http://adamswebsearch2.nrc.gov/nrcws/nrcdoccontent.aspx?Library=PU_ADAMS^PBNTAD01&LogonID=9619198fec9c35737a25a29bdd5a6343&DocID=082820281).

I trust that this information is useful to you. We appreciate your interest in NRC's regulatory program for the proposed repository at Yucca Mountain.

Sincerely,

/RA/

Janet P. Kotra, Ph.D
Senior Project Manager
Division of High-Level Waste Repository Safety
Office of Nuclear Material Safety
and Safeguards

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