Ms. Joni Arends  
Executive Director  
Concerned Citizens for Nuclear Safety  
107 Cienega  
Santa Fe, NM 87501  

SUBJECT: INFORMATION CONCERNING RADIONUCLIDES IN WATER SUPPLY WELLS  

Dear Ms. Arends:  

Thank you for your request and your concern regarding potential neptunium-237, plutonium-238, 239 and 240, americium-241, cesium-137 and strontium-90 contamination in the drinking water supply wells for Los Alamos County and the Buckman Wellfield. The protection of the drinking water supplies of nearby communities is one of the primary groundwater protection goals of the Laboratory. We appreciate the opportunity to provide information on this subject.  

The Laboratory added alpha spectrometry analysis for neptunium for the Los Alamos County water supply wells samples in December 2006. We also identified some existing August 2006 Los Alamos County water supply samples at the analytical chemistry laboratory. We asked the analytical laboratory to also analyze these samples for neptunium using alpha spectrometry. The results for the August 2006 samples were all non-detects.  

We reviewed the radioactivity data for Los Alamos County supply wells from 2001-2006 (attached). This period of record was chosen because the same independent analytical laboratory analyzed the water supply samples during this period. We have also included a period of 2001-2004 to correspond to the data record presented in the Site-Wide Environmental Impact Statement (SWEIS).
From the attachment, it can be seen that there are routine detections of naturally occurring radionuclides, such as uranium, potassium-40, and gross beta. For the remaining radionuclides the overall pattern is that they are not detected in water supply samples. For several LANL-derived contaminants, americium-241, cobalt-60, and cesium-137, there were no detections in the water supply wells from 2001-2006. Thus, there are no rising levels of radionuclides in these data.

Tritium has been detected at Los Alamos County water supply well Otowi-1 (O-1). These values are less than 0.3% of the drinking water standard, although this well is not used for supplying drinking water. These data are routinely reported in the Environmental Surveillance Report. Beginning in 2000, the tritium measurements at O-1 increased for four years from about 30 pCi/L to 60 pCi/L, and have decreased to about 20 pCi/L over the past two years.

Detections of LANL-derived contaminants, such as plutonium, americium, and strontium, have occurred sporadically in water supply wells. As indicated in the attachment, the bulk of these detections occurred from samples collected at the same time and analyzed by the analytical laboratory in the same batch. Because the overall frequency of detection is low, we believe that these sporadic detections are false positives or caused by problems at the analytical laboratory. This conclusion is supported by numerous reanalyses of these samples and by lack of consistent detections in paired samples. Again, there are no increasing trends in these data.

In conclusion, we believe the data demonstrate no radionuclide detections in the water supply wells, with the exception of tritium in Otowi-1.

We welcome your continued comments and concerns about the drinking water systems. If you have further questions, please contact Lorrie Bonds Lopez, (505) 665-0216, or lorrie@lanl.gov.

Sincerely,

Andrew Phelps
Associate Director
Environmental Programs

AP/ID/ml

Enclosure: 1) Water Supply Radioactivity Summary from WQDB
2) Santa Fe City Water Supply Radioactivity Summary from WQDB

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