



Trinity Section
American Nuclear Society
P. O. Box 5367, Albuquerque, NM 87185
<http://local.ans.org/trinity/>

Rio Grande Chapter
Health Physics Society
New Mexico
<http://hpschapters.org/riogrande/>



JOINT DINNER MEETING ANNOUNCEMENT

"Actinide Solubility and Speciation in the WIPP Transuranic Repository"

**Speaker: Donald T. Reed, PhD, LANL Actinide Chemistry and
Repository Science Program, Carlsbad, NM**

Abstract: How well is WIPP working? How do we know it will contain waste into the future – what is the science? Who is doing the research and what are they doing? If you have wondered about WIPP or our ability to dispose of radioactive waste, come and hear Don Reed speak about repository science at WIPP. Please see the next page for the abstract of his presentation.

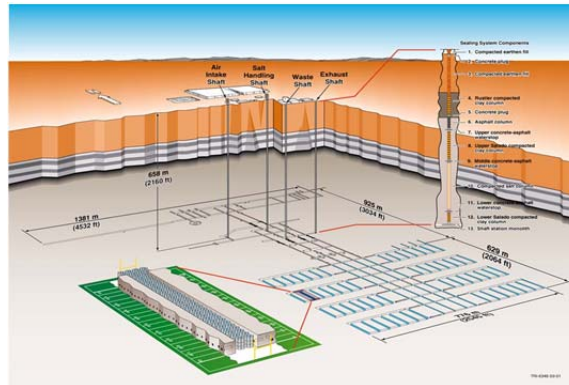
Biography: Don possesses a PhD in Experimental Physical Chemistry, subject area of radiation chemistry, from The Ohio State University. He has 29 years of experience including 3 years at Hanford (Rockwell Hanford Operations) and 16 years at Argonne National Lab (Chemical Technology Division). For the past ten years he has been the team leader of the Los Alamos National Laboratory Actinide Chemistry and Repository Science Program located at Carlsbad, NM, within the LANL Repository Science and Operations organization.

- Place:** **Courtyard by Marriott, Santa Fe**
3347 Cerrillos Road, Santa Fe, NM (505-473-2800)
- Directions:** From Albuquerque, take I-25 North approximately 55 miles to Exit 278 (Cerrillos Road). Hotel is 3 miles from exit on the left-hand side of Cerrillos Road at Richards Avenue.
- Date:** **February 21, 2014**
- Time:** **6:00** Social Hour with Cash Bar
7:00 Buffet Dinner (buffet including beef tips and chicken Marsala)
7:45 Speaker
- Cost:** *\$30 per person [Trinity Section Member (and guest)] (by web sign-up),
\$35 per person [non-Section Members and guests] (by web sign-up);
\$40 per person at the door (not pre-paid);
\$15 for students and children*

We strongly encourage you to sign up and pay for this event using our PayPal payment account. Visit the "Calendar" page of our web site (<http://local.ans.org/trinity/calendar.html>) and select the appropriate payment button. You may use your own credit card and do NOT need to have a PayPal account to make the payment.

RSVP: If you do not use PayPal payment, please RSVP no later than Feb 4th to:
Markku Koskelo: mkoskelo@aquilagroup.com (505-338-8083) or
CJ Solomon: clell.solomon@gmail.com (505-665-5720).

RSVP must be received by 17 Feb in order to give final numbers to the caterers. While we strongly encourage everyone to use online payment to sign up and prepay, an RSVP is a commitment to attend/pay at the door. We cannot afford "no shows" after the final count is given to the caterers, as the Section is partially subsidizing the cost of this event. If you cancel after 17 Feb, you will still be responsible for paying.



SCHEMATIC OF WIPP REPOSITORY

ACTINIDE SOLUBILITY AND SPECIATION IN THE WIPP TRANSURANIC REPOSITORY

Donald T. Reed

*Team Leader, Actinide Chemistry and Repository Science Program
Repository Science and Operations,
Los Alamos National Laboratory, Carlsbad NM, 88220, USA*

An update of research and programmatic activities in the area of salt repository science will be given. The Waste Isolation Pilot Plant (WIPP) transuranic repository remains a cornerstone of the U.S. Department of Energy's (DOE) nuclear waste management effort. Waste disposal operations began at the WIPP on March 26, 1999 but a requirement of the repository license is that the WIPP needs to be recertified every five years for its disposal operations. The WIPP is now pursuing its third recertification (to be submitted in March 2014) and there are many ongoing discussions about possible expanded missions and additional nuclear repository concepts in a salt geology.

The overall ranking of actinides, from the perspective of their potential contribution to release from a TRU repository, is: Pu ~ Am > U >> Th and Np. Under reducing conditions, the An(III) and An(IV) oxidation states predominate and are the focus of solubility and redox studies. Results on the solubility of thorium (IV analog) and neodymium (III analog) and redox chemistry of higher-valent plutonium are presented. Consideration is given to the presence of colloidal species and the influence of microbial interactions on the actinide speciation and solution concentration.