

 **ENTERED**

**ADNA Corporation**  
*Accelerator Driven Neutron Applications*  
1045 Los Pueblos  
Los Alamos, NM 87544  
December 5, 2016

**RECEIVED**

DEC 5 2016

Mr. Richardo Maestas  
New Mexico Environmental Department  
2905 Rodeo Park Drive East, Bldg. 1  
Santa Fe , NM 87505

**NMED**  
**Hazardous Waste Bureau**

Dear Mr. Maestas,                      Subject: Opposition to 65,280 cubic foot pad at WIPP and a  
New Mexico plutonium time bomb.

ADNA Corporation wishes to register its opposition to the modification of the WIPP facility to permit the construction of the proposed 62,580 ft<sup>3</sup> pad at the Waste Isolation Pilot Plant at Carlsbad, NM.

The basis for our opposition is that this surface-stored CH TRU material will not be moved into WIPP in 365 days and probably never unless the waste form is modified to eliminate spontaneous explosive gas generation in the CH TRU containers.

As president of ADNA Corporation, I can speak with authority on almost any matter relating to plutonium because I have worked continually on almost all aspects of plutonium production, usage, and handling. These experiences include the following:

1. Doctoral thesis awarded by Duke University that reported the first accurate measurements related to materials neutron damage and neutron transport properties for the materials used to construct plutonium breeder reactors.
2. Present at the 1962 Christmas Island test of the nuclear weapon that yielded a power ten times that of the Hiroshima explosion. From a kneeling position I was blown over by the shock wave, burned by the radiated heat, and watched as the mushroom cloud grew in size until it extended directly overhead and then beyond. Almost every structure on Christmas Island was damaged by the shock wave. In less than 24 hours I experienced a second plutonium warhead test of about the same size.
3. Pioneered the measurement of many of the nuclear properties of all of the isotopes of plutonium present in nuclear weapons or nuclear reactors.
4. Measured the spins of resonances in <sup>239</sup>Pu and <sup>241</sup>Pu to confirm the Bohr-Wheeler conjecture about the spin dependence of the fission widths of neutron resonances.
5. Performed the first and only measurement of the vulnerability of nuclear weapons to neutron fields that might be encountered in nuclear wartime conditions, which certified the codes used for evaluating all of the nuclear weapons in the U. S. nuclear arsenal.
6. Performed plutonium measurements that guided the international design efforts for plutonium breeder reactors and that eliminated the leading British design.
7. Performed the first measurements that enabled testing of codes written to transport neutrons through large thicknesses of weapons plutonium.

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8. Measured properties of nuclear materials generated from plutonium reactions that were ten times as nuclear reactive as weapons plutonium and 300 times more radioactive than  $^{239}\text{Pu}$ .
9. In 1970 tests found a significant plutonium "burden" in my lungs.
10. Oversaw Project 17 (1993-1996) arranged by the U. S. State Department to prevent 450 Russian scientists from leaking weapons technology to the Middle East by providing financial support to develop accelerator-based technology for destroying waste plutonium.
11. Thwarted the effort to place 34 tons of excess weapons plutonium in Yucca Mountain where it could undergo spontaneous nuclear explosions that Edward Teller referred to as autocatalytic events.
12. Devised means to destroy 34 tons of excess weapons plutonium to be demonstrated using the Los Alamos LANSCE accelerator at less than one tenth the cost of the best DOE alternative.
13. Devised means for using the LANSCE accelerator to produce the tritium component of every plutonium weapon at 1/30 the cost of the DOE's alternative.
14. Devised means for generating nuclear energy from natural uranium rather than enriched uranium to avoid the proliferation issue dominating the U. S.- Iran relationship.
15. Devised means to eliminate reprocessing needed to recover plutonium from today's reactor spent fuel so as to avoid the proliferation aspects of reprocessing technology.
16. Devised means for using nuclear heat from plutonium burning to produce 100 % renewable diesel from remnant wood recovered from New Mexico forest fires.

ADNA Corporation's most recent plutonium accomplishment was the recognition that the WIPP barrel explosion did not result from spontaneous combustion but from the generation of explosive gases in the barrel by alpha particle radiolysis. My lifetime knowledge and experience with plutonium was put to use in the experiment design and measurement in April 2015 at the TUNL Lab at Duke University to study the generation of explosive gases by plutonium-like alpha particles on kitty litter and other cellulosic materials. The results confirmed that explosive gas generation was sufficient to cause the WIPP barrel explosion. The experiment also confirmed that explosive gas generation is going on not only in the exploded barrel but in all of the 500,000 barrels already underground at WIPP. The total WIPP gas generation rate is 1000 times higher than WIPP designers had anticipated.

Subsequent to the Duke University confirmation, ADNA Corp discovered a thorough (25 pages with 31 figures) LANL1979 paper by Al Zerweck, "Gas Generation from Radiolytic Attack of TRU Contaminated Hydrogenous Waste" LA-7674-MS issued June 1979. His thorough examination of the gas generation in WIPP waste, which extended over about eight years, agreed with our Duke measurements in detail. These LANL measurements on gas generation, undertaken with WIPP in mind, were completely ignored by the WIPP design team apparently owing to the political expediency of getting waste into WIPP. If the Zerweck paper had received attention during WIPP planning, WIPP could not have been approved by review panels for cellulosic wastes without first treating the barrels by aerobic or anaerobic means to eliminate radiolytic gas generation.

It is still possible to apply either of these means to eliminate explosive gas production in WIPP barrels, but this will require moving the 500,000 barrels from their present storage sites and applying remediation either underground or above ground before returning them to their present sites in WIPP. ADNA Corporation estimates that anaerobic treatment would require about five years and about \$500 million.

### **Summary**

An explosive gas mixture, mainly of H<sub>2</sub>, CO, and O<sub>2</sub>, is being generated from the 500,000 barrels in WIPP according to Zerweck and our Duke measurements at the rate of 15 lbs of high explosive per day or about 3 tons per year. This rate will continue for hundreds and thousands of years accumulating, owing to the hermetic sealing of the salt deposit against gas release that is one of the main features touted for burial in salt at WIPP, into the high explosive (HE) kiloton range with possible spreading of plutonium over southern New Mexico and Texas.

ADNA Corporation is accumulating broad scientific support that will overwhelm any continuing DOE-EM efforts to ignore explosive gas generation at WIPP. The construction of the proposed pad at WIPP for "temporary" storage of LANL and out-of-state waste must be postponed until the DOE-EM and the NMED recognize the dangers discussed here, devises or selects means to ameliorate the dangerous condition at WIPP, and the DOE-EM completes operations to process the waste that already exists at the WIPP site.

Why the LANL focus on spontaneous combustion in the WIPP barrel? Because DOE-EM can claim that only one or only a few barrels are problematic. Explosive gas generation in all 500,000 barrels is an enormously more difficult and dangerous condition that DOE-EM knows will interrupt WIPP operations significantly while a solution is found and implemented.

New Mexico presently is hosting at WIPP a potential plutonium time bomb that NMED should take bold actions to defuse rather than laying a pad for importing even more explosive gas to WIPP.

Sincerely yours,



Charles D. Bowman, President  
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*Accelerator Driven Neutron Applications*  
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**PS: The attached photograph shows a perhaps skeptical NMED Secretary Butch Tongate being briefed by the Los Alamos EM manager about the LANL effort to persuade the public that LANL understands the barrel explosion issue. CDB**

## State Environment Department officials visit Lab

November 9, 2016



### Receive tours, briefings

New Mexico Environment Department Secretary Designate Butch Tongate, right, listens to a briefing from **Randy Erickson**, the Lab's associate director for Environment Management (ADEM), on the safe storage of remediated nitrate salts in TA-54/Area G during a visit to the Laboratory. Tongate toured several environmental sites associated with Manhattan Project legacy cleanup activities.

Tongate was joined by Deputy NMED Secretary JC Borrego, NMED Resource Protection Director Katie Roberts and Bruce Yurdin, NMED's Water Protection Division director.

updated 11/9/16 5:22 PM

# Public Information Meetings

## Requested Modification to the Hazardous Waste Facility Permit for the Waste Isolation Pilot Plant



**WHO:** U.S. Department of Energy (DOE) Carlsbad Field Office and Nuclear Waste Partnership LLC (NWP).

**WHAT:** DOE and NWP (Permittees) will conduct public meetings to provide information on the following permit modification request to the Waste Isolation Pilot Plant (WIPP) Hazardous Waste Facility Permit (Permit):

- Class 3 Permit Modification Request - Addition of a Concrete Overpack Container Storage Unit

**WHEN:** Tuesday, October 25, 2016 3 - 5 p.m. Thursday, October 27, 2016 5 - 7 p.m.

**WHERE:** Courtyard by Marriott 3347 Cerrillos Road Santa Fe, New Mexico Skeen-Whitlock Building 4021 National Parks Highway Carlsbad, New Mexico

**WHY:** On September 29, 2016, DOE submitted a Class 3 Permit Modification Request package to the New Mexico Environment Department (NMED). The Permit Modification Request proposes to:

- Provide a 65,280 cubic foot contact-handled (CH) transuranic (TRU) mixed waste hazardous waste container storage unit on the surface at the WIPP facility. This additional storage capacity is for waste in containers that are shipped in TRUPACT-II or HalfPACT shipping packages and are managed as CH TRU waste.
- Authorize the Permittees to store waste for up to 365 days in the proposed new Concrete Overpack Container Storage Unit. Containers of CH TRU mixed waste are proposed to be stored in concrete overpacks.

**HOW:** To obtain additional information about this permit modification request, contact Mr. Bobby St. John, NWP at 1-800-336-9477. The permit modification is also available on the WIPP web site at <http://www.wipp.energy.gov> and at the WIPP Information Center, Skeen-Whitlock Building, 4021 National Parks Highway, Carlsbad, N.M. A copy of the requested permit modification may also be obtained from NMED at the address listed below.

**COMMENTS:** Written comments for the record must be sent to the NMED contact person at the address below and received no later than 5 p.m. on December 5, 2016.

Mr. Ricardo Maestas  
New Mexico Environment Department  
2905 Rodeo Park Drive East, Building 1  
Santa Fe, N.M. 87505  
Phone: 505-476-6050  
Fax: 505-476-6030  
E-mail: [ricardo.maestas@state.nm.us](mailto:ricardo.maestas@state.nm.us)

The Permittees' compliance history during the life of the Permit being modified is available from Mr. Maestas at the NMED.

**QUESTIONS:** Any questions or comments to the Permittees regarding this permit modification request may be sent to Mr. Bobby St. John, P.O. Box 2078, Carlsbad, N.M. 88221, no later than November 28, 2016.

### WIPP Permit Community Relations Plan

On-line: <http://www.wipp.energy.gov> / toll-free: 1-866-271-9640 / e-mail: [communityrelations@wipp.wv](mailto:communityrelations@wipp.wv)