

# TRU TeamWorks

A weekly e-newsletter for the Waste Isolation Pilot Plant team

September 11, 2003

## The Big Story 2003 in 2003



The 2003<sup>rd</sup> waste shipment arrived at the WIPP site today (Thursday, September 11) from Hanford. It is highly fitting that the facility received its 2003<sup>rd</sup> shipment in 2003. Let's take a moment to realize how far our facility has progressed toward cleaning up the nation's TRU waste.

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Consider this: When operations began in 1999, only 33 shipments were made from generator sites to WIPP. If the facility had sustained that shipment rate, we would possibly be celebrating our 150<sup>th</sup> shipment to WIPP this week. Instead, the shipment number almost tripled in fiscal year 2000, quadrupled in fiscal year 2001 and has risen steadily since (see graphic below).

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What made this ramp up possible? "Vision," says Kim Jackson, WTS Transportation manager. "Dr. Triay understood immediately that opening WIPP was only half of the job. The other half was ensuring shipments continued to steadily increase." Operational focus was quickly shifted from opening WIPP to filling the pipeline. In conjunction, the National TRU Program and Central Characterization Project were put into place to implement the necessary changes in the DOE complex that would allow significant shipment numbers to WIPP.

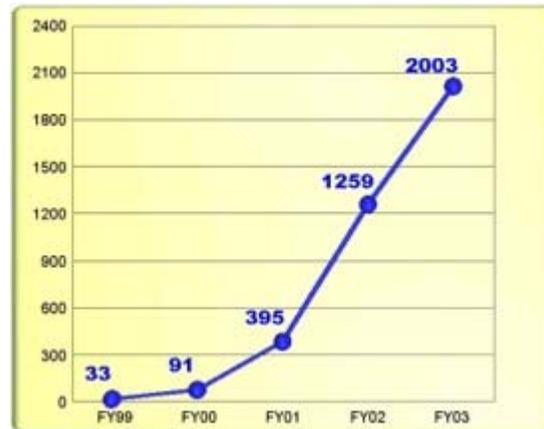
### Feedback

Contact us with feedback or submit your e-mail address for updates. Click [here](#) to e-mail.

### WIPP Shipments

(as of 9-11-03 at 10 a.m.)

21	Shipments scheduled to arrive at WIPP this week
2,003	Total shipments received at WIPP



*The shipment rate to WIPP has steadily increased since operations began in 1999.*

As employees, we are made aware of the shipment numbers on a routine basis. This familiarity can sometimes allow us to underestimate the significance of our success. "The acceleration effort has progressed as a result of teamwork and dedication," Jackson continues. "But we are not stopping here. The next goal is to sustain a maximum receipt rate of 100 TRUPACT-II's per week by March 2004. Given the successes of our WIPP programs thus far, this goal is highly achievable."

### In the News

 AK is the key	 Inspector Perspective	 Disposal Countdown	 EM Makes VSS Recommendations	 In Crisis? Let's Talk	 Jump into the "Team" huddle
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### Acceptable knowledge: key to the characterization process



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Acceptable knowledge (AK) is a term routinely used by WIPP professionals. Although everyone has an idea of its meaning, people outside of the characterization arena may be unfamiliar with the specifics of the term. AK may seem like just another characterization process, but according to NTP Project Certification manager J.R. Stroble, “AK is the basis for waste characterization.”

Simply put, AK refers to generator sites’ ability to prove that they know what is in the waste containers and when it was put there. Detailed records exist on most TRU waste containers stored at generator sites. Gathering and analyzing existing documentation on these containers is a reliable and cost-effective method to determine the nature of the contents.

The regulations for what constitutes AK are detailed in the WIPP Hazardous Waste Facility Permit. Meeting those requirements is the job of generator site personnel. Confirming they are met is the job of CBFO, NMED and EPA.



During the site’s certification audit, CBFO obtains a logical sequence of information on the waste. This information progresses from general facility information to more detailed waste specifics. The information is then reviewed for accuracy and consistency. NMED and EPA also participate in site certification audits. In doing this, they ensure the information meets AK regulations to characterize the waste.

***TRU waste was generated at many DOE facilities over the years, but it always has one thing in common – the process that generated the waste was well-defined, and nuclear materials used in the process were closely controlled.***

– J.R. Stroble, WTS

The techniques used to characterize TRU mixed waste under AK standards include process knowledge, records of prior analyses and other supplemental sampling and analysis data. The data are then used in three ways:

- To differentiate TRU mixed waste streams
- To determine if TRU mixed heterogeneous debris wastes exhibit a toxicity characteristic as described in New Mexico hazardous waste management regulations
- To assess if TRU mixed wastes are listed in New Mexico hazardous waste regulations.

Other characterization processes, such as radiography, visual examination, headspace gas, and homogeneous waste sampling and analysis are performed to *confirm* AK and to update and modify initial AK assessments. “If I don’t have AK on a drum, that drum cannot come to WIPP,” notes Sue Peterman, CCP SRS project manager. “That’s how important AK is to the characterization process.”

Exact requirements for AK documentation are described in Attachment B4 of the WIPP Hazardous Waste Facility Permit, available on the WIPP home page at <http://www.wipp.ws/library/rcrapermit/rcrapermit.htm>.

**WIPP shipments: an inspector perspective**

Last week, *TRU TeamWorks* explored the number of inspections a WIPP shipment undergoes on a typical round-trip to INEEL (September 4 [archives](#)). Now as Paul Harvey would say, "Here's the rest of the story," from the perspective of an inspector at the Department of Public Safety Motor Transportation Division (MTD).



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**WIPP Shipments**  
 (as of 9/11/03 at 10 a.m.)

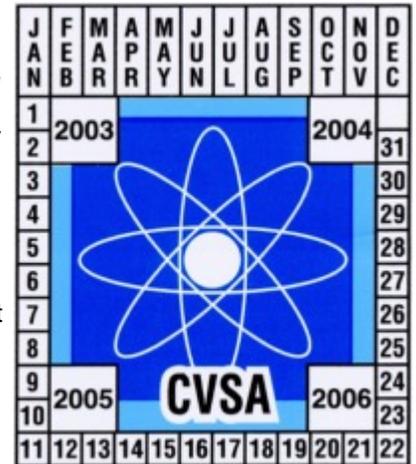
21	Shipments scheduled to arrive at WIPP this week
2003	Total shipments received at WIPP

**...the national average out-of-service rate for commercial trucks is 23.7 percent, but for WIPP trucks, it's only 2.8 percent.**

"In New Mexico," says Gary Trujillo, WIPP Coordinator for the MTD New Mexico Department of Public Safety, "we are required to inspect every WIPP shipment in accordance with the Governor's mandate." The mandate Trujillo refers to was implemented by former Governor Gary Johnson.

MTD's responsibilities are far reaching. "We are responsible for inspecting all commercial vehicles in the state, not just WIPP vehicles," states Trujillo.

WIPP shipments are inspected to Commercial Vehicle Safety Alliance (CVSA) Level VI standards. The CVSA inspection program is designed to ensure that select radioactive shipments are inspected at the point of origin and are 100 percent defect-free by Level VI standards before they are allowed to proceed without unnecessary delay. En route states are encouraged to honor the Level VI decal (similar to the one pictured on right) and avoid repeated inspection unless there is an obvious defect. However, some states, such as New Mexico, inspect all transuranic and "Highway Route Controlled Quantity" radioactive shipments entering the state, including those shipped by other agencies/companies.



Although WIPP shipment inspections are more rigorous than those of other commercial vehicles, WIPP trucks fare much better than the average commercial vehicle. For example, the national average out-of-service rate for commercial trucks is 23.7 percent, but for WIPP trucks, it's only 2.8 percent. According to information published in last year's CVSA interim report, ". . . it may be concluded that vehicles and drivers subject to CVSA Level VI inspection criteria are significantly safer than other motor carriers traversing the nation's highways."

"Each inspection for a WIPP vehicle can take anywhere from one to two hours," according to Trujillo. "Since the beginning of the year, we have conducted 540 inspections on WIPP trucks."

Qualified CVSA Level VI inspectors are highly trained and cannot conduct vehicle inspections until certified. MTD has 50 certified Level VI inspectors statewide. There are only six certified CVSA Level VI instructors throughout the United States, and three of those are MTD personnel.

**The end game**



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**Total Waste Disposed Underground at WIPP**

(as of 9/11/03 at 10 a.m.)

44,275	CH drums
2,034	CH standard waste boxes
369	CH ten-drum overpacks
14,782	Cubic meters

How long does it take a TRU waste payload to be disposed of once it is received at the WIPP site? Let's start at the WIPP gate and track one typical TRUPACT-II payload all the way to disposal. **Set your stop watch.**



Security meets the truck at the gate, opens the tractor hood, checks under the truck and trailer carriage then compares the bill of lading with shipping information. Meanwhile, a radiological control technician (radcon tech) tests the shipping containers for external contamination. Looks good to go . . .

**20 minutes and counting.**

The truck circles around behind the Waste Handling Building where the trailer is disconnected and a trailer jockey positions the trailer. A forklift operator offloads the TRUPACT-II's and transfers them to the TRUDOCK inside the Waste Handling Building . . .

**time, 24 minutes.**

Waste handlers at the TRUDOCK pull the vacuum on the outer containment vessel (OCV) and radcon techs begin a series of tests for airborne radiation. Once the OCV is tested clean, waste handlers and radcon techs move on to the inner containment vessel (ICV). Tested clean, the ICV lid is lifted and the payload removed, but not before those radcons get one more swipe. As the payload is put onto a facility pallet, radcon techs swipe the payload containers and put the swipe in the TENNLEC, a radiation counter . . .

**timely, at 68 minutes.**

While radcon techs await swipe results, the waste handlers begin to reassemble the empty TRUPACT-II. Pallets, guide tubes, and ICV and OCV lids are carefully put back into place. A forklift ferries the TRUPACT-II back outside to the trailer, loads it and ties it down. One shipping container ready to hit the road again . . .

**in a well orchestrated 28 minutes.**

The radcon tech says "smears clean," a signal for waste handlers to move the payload to the conveyance room for loading onto the cage. As the cage descends 2,150 feet, an underground transporter operator waits below. From conveyance room to underground . . .

**an impressive 15 minutes.**

When the waste hoist cage reaches the station, the transporter operator slips the payload onto the transporter and makes his way down E-140 to Panel 2.

**Add 10 minutes.**

In the panel, waste handlers use a forklift to offload the waste from the transporter and stack it in the panel disposal room. They're outta there in just . . .

**15 minutes.**

From front gate to underground disposal, the waste handling process takes just under three hours.\* While exceedingly efficient, waste handling engineers continually scrutinize the process for improvement.

\*It should be noted that shipments often arrive during non-work hours, and the waste hoist is shutdown weekly for preventive maintenance; therefore, a limited backlog of waste to be disposed is routine.

### Headquarters evaluation: WIPP has institutionalized VSS



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Following last month's evaluation of the WIPP Vital Safety Systems (VSS) program, Larry Bailey, assistant to DOE's Environmental Management Chief Operating Officer, commented that WIPP "has institutionalized a program to ensure operability, reliability and configuration management of WIPP VSS." "There were no findings; all elements that were supposed to be in place were in place," says John Garcia, WTS Safety Security and Technical Support manager.

Although there were no findings, EM did make six recommendations to enhance the WIPP program. WIPP will now assess implementation of the recommendations. Following are EM's recommendations and how they will be addressed:

1. **Assessment of VSS failures that could stop facility operations for seven days or more.** WIPP previously addressed this issue with single-point failure assessments. Findings from previous assessments will be reviewed to identify equipment and processes that require special attention and methods for safety assurance.
2. **Training and Qualification.** Refresher courses are scheduled and administered through the WIPP Training Department. System-specific refresher training is conducted through the annual system walk-down requirements and the vital system cognizant manager's walk-down review report. CBFO will re-verify that training records are available to support qualification requirements. And, evaluate the technical qualification program and supplement training requirements as needed.
3. **Vital Safety System Book.** WIPP will investigate the System Book concept to see if it can be implemented. The System Book, used at other DOE facilities, is designed to reinforce the safety rigor surrounding vital safety systems.
4. **Communications.** WIPP will add language to the Engineering Conduct of Operations that requires cognizant engineers to notify CBFO safety system oversight staff (including the CBFO facility representative) prior to walk-downs.
5. **Responsibility and Accountability.** Ownership and accountability shown by cognizant safety system engineers who were interviewed drew favorable comments from EM. Reviewers asked WTS management to ensure the same level of accountability was understood by all cognizant engineers.
6. **Performance Indicators.** In close-out session, EM requested that WIPP cognizant engineers and CBFO safety system oversight staff hold regular meetings to discuss safety system performance indicators. CBFO oversight will apprise management of current system conditions following review of operability, availability, and reliability performance data.

#### WIPP Vital Safety Systems

1. CH Confinement Ventilation System (HV01)
2. Underground Ventilation & Filtration System (VU01)
3. Waste Handling Building Fire Suppression & Detection System (FP02, FP03, WD01)
4. CAMs, Room Exit Alpha CAMs supporting shift to filtration (RM01)
5. Waste Hoist SSC that prevents uncontrolled movement (UH06)
6. Central Monitoring System supporting shift to filtration (CM01)
7. Waste Handling Building Structure and Tornado Doors (CH02)
8. CH TRU Waste Handling Equipment (WH02)

## WIPP communicators train to answer in crisis



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In the event of a crisis, communicating accurate information to the media and public is important to us all. Therefore, WIPP ensures that our emergency communicators are well prepared through continual training and drills.

Four members of WIPP's Joint Information Center (JIC), which is designed for emergency communication, recently completed an intensive three-day training course. The course focused on key skills: working with the media, writing effective news releases and speaking effectively. Such skills are crucial in providing accurate and timely information to the public in an emergency.

"At WIPP, we have some of the most highly trained communicators in the area," said Dennis Hurtt, CBFO team leader for Public Affairs and the CBFO's primary spokesperson. "We train and test our emergency communication skills in drills throughout the year. Training like this keeps our team sharp and ready."

A panel session provided a unique opportunity for participants and media representatives to discuss how public information officers and the media can cooperate to disseminate emergency public information. Panelists included Gary Dickson, publisher of the *Carlsbad Current-Argus*, Katy Zachary from KBIM-TV and Bob Scholl from KCCC radio.

Eddy County emergency manager Joel Arnwine brought in an instructor from the Federal Emergency Management Agency to conduct the training. Public information officers from Eddy County, New Mexico State Police, Eddy County Sheriff's Department, Carlsbad police and fire departments and WIPP took part. Participants also took time during the training to tour WIPP's JIC facilities.

The JIC played a prominent role after the 2000 pipeline explosion that killed 12 members of a local Carlsbad family. The New Mexico State Police and the National Transportation Safety Board used the center as its base for communicating with the public. Its members are on 24-hour call, seven days a week to respond to any emergency involving WIPP.



**Members of the Joint Information Center, Mike Antiporda (above) and Susan Scott (below), field questions from mock reporters to practice emergency communication skills.**



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**LANL**

- Scientists from around the world convened last week in Santa Fe to debate and share their latest research at the Gamma-Ray Burst 2003 Symposium held September 9-12. LANL sponsored the symposium, the largest of its type to date.

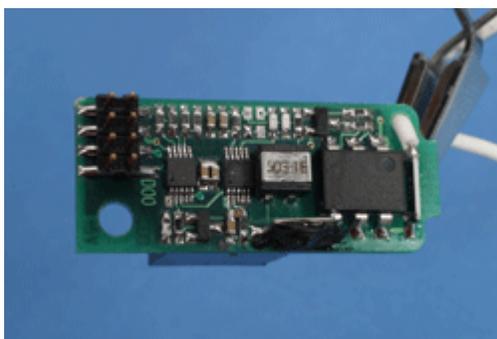
The conference was coordinated by the Space and Remote Sensing Sciences Group at Los Alamos, which marked the 30th anniversary of the discovery of gamma-ray bursts in 1973 by LANL scientists.

-- excerpted from [www.lanl.gov](http://www.lanl.gov)

**SNL**

- Engineers at Sandia National Laboratories in California have designed a miniature power supply device with potential applications in drug delivery systems, medicine, portable detection and analysis and a host of electronic devices. Sandia is actively soliciting industry partners to license, manufacture and sell the new technology that researchers say offers a turn-key solution to high-voltage power supply needs.

The device serves as a miniature modular high voltage power supply system and features voltage regulation, current sinking, current monitoring, and electronic float — a combination unavailable on any existing supply. It was designed specifically for powering SNL's  $\mu$ ChemLab™ device at high voltages and low currents with low power consumption.  $\mu$ ChemLab™ is a portable, hand-held chemical and biological detection system with homeland security, defense, environmental and medical applications.



**A modular,  
high-voltage  
power supply  
developed by  
SNL engineers.**

**(Photo by Bud  
Pelletier)**

-- excerpted from [www.sandia.gov](http://www.sandia.gov)