



DRAFT AGENDA
ADMINISTRATIVE COMMITTEE MEETING
Stoller-Navarro, 7710 W. Cheyenne, Conference Room 130
April 12, 2006 - 5:00 – 8:00 p.m.

- | | | |
|------------------------------|--|-------------------|
| I. | Chair's Opening Remarks | Kathleen Peterson |
| | <ul style="list-style-type: none">• Agenda Approval | |
| | <ul style="list-style-type: none">• Ground Rules - Review | Carla Sanda |
| II. | Committee Updates | |
| | <ul style="list-style-type: none">• Budget | Dave Hermann |
| | <ul style="list-style-type: none">○ Project Manager Meeting○ Committee Prioritization○ Report / Letter | |
| | <ul style="list-style-type: none">• Recruitment | Jack Ramsey |
| | <ul style="list-style-type: none">○ Number of applicants○ Applicant review meeting○ Applicant interview○ Recommendation to full Board | |
| | <ul style="list-style-type: none">• Transportation/Waste Committee | Dave Hermann |
| | <ul style="list-style-type: none">• UGTA Committee | Genne Nelson |
|
B R E A K

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| III. | Other CAB Business | |
| | <ul style="list-style-type: none">• FY 2006 EM Budget Update | Kelly Snyder |
| | <ul style="list-style-type: none">• CAB By-Laws Review | Kathleen Peterson |
| | <ul style="list-style-type: none">• Site-Specific Advisory Board National Meeting | All |
| | <ul style="list-style-type: none">○ Focus: National Waste Management○ Knoxville, TN - April 25-28, 2006○ Top 3 Site Issues | |

- DOE News Kelly Snyder
 - FY 2006 EM Budget
 - Updated Web Page
 - ✓ Headquarters Request / Reference Matls
 - Meeting Refreshments
 - DOE Staff Titles

- May Meeting Facilitator/Group

- Spring Retreat / New Member Orientation Facilitator/Group
 - NTS Tour
 - Orientation
 - Work Plan Retreat

- IV. April State of Nevada Notification : Facilitator
Closed in Place Corrective Actions
 - CAU 145 – Wells and Storage Holes – May 1, 2006
 - CAU 151 – Septic Systems and Discharge Area – May 10, 2006

- V. Meeting Wrap-Up / Assessment

MEMBER / EX-OFFICIO / SUPPORT STAFF BIOGRAPHIES
COMMUNITY ADVISORY BOARD FOR NEVADA TEST SITE PROGRAMS

Kaye Allisen-Medlin - Ms. Allisen-Medlin is a ten-year resident of Rachel, Nevada, and brings a diversified background to the Board. Serving in a role unusual for a woman at the time, Ms. Allisen-Medlin was a research analyst tasked with evaluating propulsion systems designed for the Atomic Energy Commission. She also has extensive experience as a purchasing agent for intricate medical systems at Centinela Hospital in Inglewood, California. In addition, Ms. Allisen-Medlin has been an active member of Toastmasters International and served as the District Manager for a chapter tasked with coaching and professional development of 500 members. She continues to represent her community in numerous civic and rural organizations. Ms. Allisen-Medlin joined the Board in 2001 and has served on the Program and Budget Committees.

Pauline Esteves - Ms. Esteves is a Native American, the Chairperson of the Timbisha Shoshone Tribe, and resides in Death Valley, California. Ms. Esteves joined the Board in 2000.

Robert L. Gatliff - Mr. Gatliff has been a long-time participant in CAB activities. Prior to retirement, he spent 37 years as a practicing engineer primarily related to petroleum industry drilling activities. He also spent 4-1/2 years working with or for the Atomic Energy Commission as a drilling engineer in the nuclear testing program. Mr. Gatliff holds both a B. S. and M.S. in Petroleum Engineering from the University of Tulsa.

David G. Hermann - Mr. Hermann is a young retiree from the U.S. Air Force and a 14-year resident of Nevada. He holds numerous degrees, including: A.A. in Digital Equipment Technology, B.S. in Distributed Studies, Master of Business Administration, and Juris Doctorate in Law. His U.S. Air Force career focused on Command and Control Operations, Test and Evaluation, and Secure Communications. He spent a great deal of time in Nevada as part of his Air Force career and has excellent knowledge of the Nevada training and testing ranges. Upon his retirement from the military, David returned to school to earn a law degree and is hoping to focus his career on issues related to patenting innovative technologies. Mr. Hermann is currently self-employed as a practicing attorney in Nevada.

Steven Hopkins - Mr. Hopkins holds a B.S. degree in Geology. His professional career began in the field of mineral exploration and mining. Mr. Hopkins then joined the NTS nuclear weapons testing program and currently works as a geologist on the U.S. Department of Energy's Yucca Mountain Project (YMP). He has been a Nevada resident since 1963 and has been actively involved in rural issues. He is the former Chair of the Alamo, Nevada Town Board, and also served as a member of the Lincoln County Planning Commission.

Marian Nielson Lawrence - Ms. Lawrence is a retired resident of Pahrump, Nevada. Her professional background includes working as an accountant with Reynolds Electrical & Engineering Co., Inc., a former contractor for the DOE at the Nevada Test Site. Ms. Lawrence also served as a nursing home administrator. She has an M.B.A. and has completed three additional years of study as part of a doctoral program. Ms. Lawrence joined the Board in 2001 and has served on the Program, Budget, and Transportation / Waste Committees, as well as the CAB Vice-Chair.

Genne M. Nelson - As a geologist and scientist on the Yucca Mountain Project in Nevada, Ms. Nelson collects geologic samples, data, and engineering data for programmatic drilling and sampling activities. Her background includes engineering experience in mining coal as well as base and precious metals in Alabama, Arizona, California and Nevada. She earned a B.S. in Geology from Auburn University as well as a M.S. in Geosciences from the University of Arizona. Ms. Nelson is a member of the Society of Economic Geologists, the American Institute of Mining Engineers, and is a registered professional

Revised May 11, 2004

geologist in the state of California. Ms. Nelson joined the CAB in 2001. She lives in Amargosa Valley and currently serves on the CAB's Underground Test Area Committee.

Richard Nocilla - Mr. Nocilla is a semi-retired resident of Las Vegas who served on the Community Advisory Board for Nevada Test Site Programs from 1994-2000. His background in real estate provides an in-depth knowledge of the Las Vegas Valley. In addition, Mr. Nocilla formerly worked at the Nevada Test Site as a health physicist with project-related experience in site waste handling and disposal operations. Mr. Nocilla holds a B.A. in Chemistry and a M.S. in Mathematics. His diversified background on CAB sub-committees is extremely valuable to the current CAB activities. Mr. Nocilla rejoined the Board in 2001 and has served on the Program, Budget, Underground Test Area, and Transportation/Waste Committees.

Kathleen Peterson - Ms. Peterson works for Lockheed Martin in support of the U.S. Department of Defense as the Director of Environmental Safety & Health. She is also the Chief Scientist for Depleted Uranium and provides technical support on environmental impacts and remediation technologies. She is a Certified Environmental Manager and is familiar with the Nevada Test Site. Ms. Peterson possesses a B.S., a M.S., and is also a Ph.D. candidate. Ms. Peterson is a Las Vegas resident who joined the Board in 2001 and currently serves as the Chairperson of the Underground Test Area Committee.

Charles A. Phillips - Mr. Phillips lives in Las Vegas and has worked in the construction industry for 25 years as an operating engineer, carpenter, and concrete worker, including several years on projects at the Nevada Test Site. He currently serves as a local union organizer. His extensive training in areas related to hazardous and radiological materials and safety are an asset to related discussions and projects. Mr. Phillips joined the Board in 2001 and has served both as a member and Chairperson of the Budget Committee, a member of the Underground Test Area Committee, and CAB Chairperson.

Jackson Ramsey - Mr. Ramsey is a licensed professional engineer and holds a B.S. degree in Metallurgical Engineering, a Master of Business Administration degree, and a Ph.D. in Systems Management (Complex Systems Management). His professional background includes 30 years as a university professor, including serving as Dean of a science college with 3,500 student majors. He also has ten years' experience as a metallurgical engineer, including nuclear power plant design and construction. He is a relative newcomer to Nevada – having retired here 5-1/2 years ago. However, he jumped right in to make a difference and currently serves as the Executive Director of a non-profit corporation that provides desert conservation education at the Red Rock Canyon National Conservation area and other federal land management locations. Mr. Ramsey has extensive experience in dealing with a variety of issues requiring the need to build consensus to move forward. His experience in serving on public advisory boards, as well as his commitment to providing opportunities for public information is an asset to the CAB.

Engelbrecht von Tiesenhausen - Mr. von Tiesenhausen earned a Bachelor of Applied Science in Metallurgical Engineering as well as a Masters in Business Administration. His current position as an engineer for Clark County, NV, calls for the review of scientific materials related to the proposed Yucca Mountain facility. Throughout his career, he has managed research and major engineering projects and remains current with technological advances related to environmental cleanup. Mr. von Tiesenhausen is a Las Vegas resident who joined the Board in 2001 and serves as the Co-Chair of the Underground Test Area Committee.

CAB Monthly Update
April 2006

Transuranic Waste (TRU):

Accomplishments (February and March)

- A contractor has been procured to perform assay on 150 boxes and drums to determine if they are low-level or TRU waste. Work completion is scheduled for the 3rd quarter.

Expectations (April)

- Work will be performed in the Visual Examination and Repackaging Building
- Movement of the boxes and drums from the TRU Pad Cover Building in Area 5 to Non-Destructive Examination (Real-Time Radiography) and Non-Destructive Assay (In-Situ Object Counting System (ISOCS)) will begin April. These systems will be used to determine if any prohibited items exist in the boxes and determine their radioactive contents.

Low-Level Waste (LLW):

Accomplishments (February and March)

- Conducted five LLW Generators Facility Surveys (Paducah, Bechtel Nevada, West Valley, Nuclear Fuel Service, and Permafrix).
- The LLW Project is expected to receive 999,979 cubic feet in FY 2006. As of March 30, 2006, the NTS received 510,165 cubic feet of LLW in 465 shipments.
- LLW Operations has worked 250,048 hours since last lost time accident (Sept 2003).

Expectations (April)

- Will conduct one Facility Evaluation (Pantex) in April.
- Expecting to receive an additional ~127,500 ft³ of LLW by the end of April.

Mixed Low-Level Waste (MLLW):

Accomplishments (February and March)

- NDEP conducted inspections of the active and inactive landfills at the Nevada Test Site.
- The final MLLW forecast expected in FY 2006 is 28,248 cubic feet.

Expectations (April)

- First off-site MLLW was received at the NTS on April 11, 2006.

Underground Test Area Project:

Accomplishments: (February & March)

Pahute Mesa

- Continuing flow model analysis

Yucca Flat

- Completed Phase I Geochemical Evaluation Report

Expectations: (April)

Rainier Mesa/Shoshone Mtn.

- Ongoing data analysis and collection for Geologic Model
- Yucca Flat**
- Submit Draft Phase I Hydrology Documentation Package

NAVADA TEST SITE COMMUNITY ADVISORY BOARD

DIVERSITY (RECRUITMENT) COMMITTEE REPORT

The CAB Diversity (Recruitment) Committee, consisting of Kathleen Peterson, Marian Lawrence, David Hermann, Bob Gatliff and Jackson Ramsey, received a total of 20 applicants for membership from its recruiting efforts in January, February, March and April, 2006. Sixteen of these individuals were selected for personal interviews. The committee met on April fifth, sixth, and twelfth and interviewed fifteen of these individuals. (One person did not show up for their appointment.)

The primary criteria used for selection included: open mindedness, willingness to reason, appropriate inquiries, linkages to concepts of environmental management, fit and commitment.

Based upon these interviews we recommend the following twelve individuals be invited to join the CAB:

Adras, Paul	Las Vegas
Aldrich, Bill	Pahrump
Johnson, Robert	Beatty
McNeal, Vernell	Las Vegas
Oom, Ted	Pahrump
Pawliuk, Warren	Pahrump
Rosin, David	Las Vegas
Spinato, Jan	Henderson
Standley, Stacy	Las Vegas
Sullivan, Harold	Las Vegas
Weeks, James	Beatty
Wegst, Walt	Las Vegas

I move acceptance of the committee report to forward the names of these twelve individuals to the Department of Energy.

Jackson E. Ramsey, Chairman
April 12, 2006

**Notification for
Closed in Place Corrective Actions
April 10, 2006
Las Vegas, Nevada**

During the next 30 days, the Department of Energy (DOE) will be submitting two Corrective Action Decision Documents (CADDs) to the Nevada Division of Environmental Protection (NDEP) for the following Corrective Action Units (CAUs). These documents will recommend that engineering and/or administrative controls be used to close the sites although contamination remains.

When submitting these documents to NDEP, copies will be supplied to the Community Advisory Board and the Las Vegas and Carson City Public Reading Rooms for review. Submit comments regarding these decision documents to Tim Murphy (NDEP) within 30 days of the document's release.

CAU Number	CAU Description	Approximate Submittal Date
145	Wells and Storage Holes (CADD)	May 1, 2006
151	Septic Systems and Discharge Area (CADD)	May 10, 2006

Agenda

EM SSAB Chairs Meeting

Knoxville, Tennessee

April 26 - 28, 2006

SITE SPECIFIC ADVISORY BOARD CHAIRS MEETING

April 27-28, 2006

Cumberland House Hotel

Knoxville, Tennessee

Thursday, April 27, 2006

8:15 - 8:45 a.m.

Welcome and Overview

Welcome: Kerry Trammell, Oak Ridge SSAB Chair;
Gerald Boyd, DOE-ORO Manager; Steve McCracken,
DOE-ORO AMEM; Doug Frost, DFO; Knoxville Mayor
Bill Haslam and/or Knox County Mayor Mike Ragsdale

Review of meeting objectives, agenda, and ground rules:
Mike Schoener

8:45 - 10:00 a.m.

Update on Waste Disposition Strategy, Frank Marcinowski and/or Christine Gelles

10:00 - 10:15 a.m.

Break

10:15 - 11:15 a.m.

Lessons Learned from Closures Sites

11:15 - Noon

Discussion of the FY 2007 Budget, Mark Frei or designee

Noon - 12:15

Public Comment Period

12:15 - 1:15 p.m.

Lunch

1:15 - 2:00 p.m.

Presentation by James Rispoli, Assistant Secretary for EM (*Vision and plans for EM Program & EM SSAB*)

2:00 - 2:30 p.m.

Presentation by Charlie Anderson, Principal Deputy Assistant Secretary for EM (*Nuclear Materials Disposition and Consolidation Coordination Committee*)

2:30 - 2:45 p.m.

Break

- 2:45 - 4:00 p.m. **Round Robin: Top Three Site Issues**
 2:45 - 3:30: Each Board has five minutes to present top three site issues
 3:30 - 4:00: Questions and discussion of issues presented
- 4:00 - 4:15 p.m. **Public Comment Period**
- 4:15 - 5:00 p.m. **Discussion of Any Proposed Product from the Chairs**
- 5:00 - 5:15 p.m. **Review of Day's Discussion and Friday's Agenda**

Friday, April 28, 2006

- 8:15 - 8:30 a.m. **Opening**
 Welcome and summary of Thursday's work
- 8:30 - 9:15 a.m. **Briefings by Doug Frost and Melissa Nielson**
- 9:15 - 10:45 a.m. **Work on Product to Send to DOE or Follow-up on Any Issues Raised from Thursday**
- 10:45 - 11:00 a.m. **Break**
- 11:00 - 11:30 a.m. **SSAB Organizational Issues**
 Discussion regarding the timing and location of the next Chairs meeting and if the SSABs will pursue holding a workshop
- 11:30 - 11:45 a.m. **Public Comment Period**
- 11:45 - noon **Meeting Wrap-Up and Closing Remarks**
 Mike Schoener; Kerry Trammell, Oak Ridge SSAB Chair;
 Pat Halsey, Oak Ridge SSAB Federal Coordinator



Community Advisory Board for Nevada Test Site Programs

April 12, 2006

Kathleen Peterson, CAB Chair
Marian Lawrence, CAB Vice-Chair

Kaye Allisen-Medlin
Pauline Esteves
Robert Gatliff
David Hermann, Chair
Budget Committee
Transportation/Waste Committee

Steve Hopkins
Genne Nelson
Richard Nocilla
Charles Phillips
Jackson Ramsey, Chair
Recruitment Committee
Engelbrecht von Tiesenhausen, Chair
UGTA Committee

Ex Officio Members
Steve Mellington
*U.S. Department of Energy,
Nevada Site Office*
Tiffany Lantow
Defense Threat Reduction Agency
Tim Murphy, Chief
*Bureau of Federal Facilities,
State of Nevada Division of
Environmental Protection*
Frank Tussing
*Nevada Alliance for Defense,
Energy, and Business*
Susan Moore
Nye County

Administrative Support Staff
Kay Planamento

Mr. Stephen A. Mellington
Assistant Manager for
Environmental Management
U.S. Department of Energy – Nevada Site Office
P.O. Box 98518
Las Vegas, NV 89193-8518

Re: Community Advisory Board (CAB) FY 2008 Budget Prioritization

Dear Mr. Mellington:

The CAB Budget Committee has completed its annual review and prioritization of the U.S. Department of Energy's Nevada Site Office (DOE/NSO) Environmental Management (EM) projects for the FY 2008 budget submittal. The committee presented its recommendations to the full Board at the April 12, 2006, CAB administrative meeting, where they were approved by the full Board.

Last year, the Board reviewed and prioritized five EM technical projects. With the information the Budget Committee received from the project managers, we combined the Mixed Low-Level Waste and the Low-Level Waste into one area for budget ranking. This resulted in four areas being considered. This year, the Committee has continued to place the Underground Test Area project into the number one slot. This ranking reflects our commitment to working with you to ensure that monies are available to continue drilling and monitoring efforts in support of groundwater issues at the Nevada Test Site. As you know, the CAB's UGTA Committee has recently made recommendations to you for the location of a network of three additional UGTA wells at the NTS. We will continue to focus on this issue and sincerely hope that funding will become available to support that recommendation.

Following is the Board's recommended FY 2008 budget ranking:

<u>Ranking</u>	<u>Environmental Management Project</u>
1	Underground Test Area (UGTA)
2	Industrial Sites
3	Soils
4	Mixed Low-Level Waste / Low-Level Waste

The CAB utilized three criteria to rank the projects: (1) Health & Safety Risks, (2) Regulatory Requirements, and (3) Completion Schedule. We then

Stephen A. Mellington
Page 2
April 12, 2006

considered any significant changes in a project area from last year, and applied that information to last year's rankings to arrive at our current recommendations.

Thank you for the opportunity to participate in the annual budget prioritization and for the assistance provided by the EM staff. Each project manager took the time to meet with Budget Committee members at the CAB office and provided detailed follow-up information. We sincerely appreciate this support and look forward to your response related to this year's budget submittal.

Respectfully submitted,

Kathleen Peterson, Chairperson
Community Advisory Board
for Nevada Test Site Programs

cc: M. Nielson, DOE/HQ, (EM-30.1) FORS
P. Golan, DOE/HQ, (EM-1)
K. Carlson, NNSA/NSO, Manager
F. DiSanza, DAMEM, NNSA/NSO, Las Vegas
K. Snyder, PSG, NNSA/NSO, Las Vegas
T. Murphy, NDEP
C. Sanda, Consensus By Design, LLC
CAB Members



OFFICE OF THE GOVERNOR

KENNY C. GUINN
Governor

March 17, 2006

The Honorable Samuel W. Bodman
Secretary of Energy
1000 Independence Avenue SW
Washington, D.C. 20585

Dear Secretary Bodman,

The State of Nevada was recently briefed, by the U.S. Department of Energy's Nevada Site Office (DOE-NSO), on serious cuts to the current fiscal year (FY 2006) budget for Environmental Management (EM). The 2006 budget was originally set at approximately \$86.6 million. However, additional earmarks will result in a DOE-NSO EM funding level of only \$70.4 million -- a reduction of almost 20%. The 2007 budget submitted to Congress perpetuates these unacceptable reductions. Such a funding reduction has the potential to significantly impact the ability of the DOE-NSO to conduct planned cleanup activities and on-going programs that manage the receipt of low level and mixed low level radioactive waste. Those cuts may have serious implications for the productive and mutually beneficial working relationship that has been developed between the state of Nevada and the DOE-NSO over many years.

In addition, the Federal Facility Agreement and Consent Order (FFACO) specifically describes the approach to cleanup, along with timelines and required regulatory milestones. The ability to reach these milestones and meet the timelines agreed to in this Order are directly linked to maintaining a budget that is adequate to complete the work. A budget cut of this magnitude will seriously impact the ability of EM to meet the commitments in the FFACO and will likely result in a violation of the FFACO as well as provisions of the Federal Facilities Compliance Act (FFCA).

Finally, after much negotiation, the State of Nevada in FY 2005 agreed to allow disposal of offsite-generated mixed low-level waste at the Nevada Test Site. Once again, this agreement was based on the understanding that the DOE will continue to meet its commitments to the State of Nevada, making the timing of these FY 2006 funding cuts especially troubling.

The programs that have been undertaken through this cooperative effort ensure that environmental remediation work at the NTS is being carried out in a timely, efficient, and satisfactory manner. Adequate funding is critical in order to protect human health and

ONE HUNDRED ONE NORTH CARSON STREET
CARSON CITY, NEVADA 89701
(775) 684-5670 • Fax (775) 684-5683

The Honorable Samuel W. Bodman
March 17, 2006
Page 2

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the environment in Nevada and has from the beginning, been part of our agreement. Therefore, I am writing once again, as I did in February 2002 when budget cuts were being proposed for work at the NTS, to request your assistance and your assurance that the DOE-NSO EM budget will be restored to the \$90 million level. This is the funding level that the federal government has committed to, both verbally and in writing, for on-going activities at the NTS. Thank you for your consideration.

Sincerely,



KENNY C. GUINN
Governor

SR/lf

cc: U.S. Senator Harry Reid
U.S. Senator John Ensign
U.S. Congressman Jim Gibbons
U.S. Congresswoman Shelley Berkley
U.S. Congressman Jon Porter
Allen Biaggi, Director, Department of Conservation and Natural Resources
Leo Drozdoff, Administrator, Division of Environmental Protection
Colleen Cripps, Deputy Administrator, Division of Environmental Protection
Robert R. Loux, Executive Director, Office on Nuclear Projects
Kathleen Carlson, DOE/NSO, NNSA
DOE/HQ - EM1
Tim Murphy, Chief, Bureau of Federal Facilities
Citizen Advisory Board members ✓



Department of Energy
National Nuclear Security Administration
Nevada Site Office
P.O. Box 98518
Las Vegas, NV 89193-8518

March 21, 2006

Kathleen Peterson, Chairperson
Community Advisory Board
for Nevada Test Site Programs
2721 Losee Road, Suite D
North Las Vegas, NV 89130

FY 2006 NEVADA SITE OFFICE ENVIRONMENTAL MANAGEMENT BUDGET

We have received and carefully reviewed your letter related to the proposed impacts to the FY 2006 budget for environmental management projects at the Nevada Site Office (NSO). As you so clearly stated in your letter, we cannot take our commitments to stakeholders lightly and are doing everything possible to ensure that we can move forward to meet agreed-upon project goals and milestones.

We have been exploring every alternative with our Department of Energy Headquarters counterparts and are pleased to report that the outlook is clearly better than we had originally anticipated. At this point in time, the NSO environmental management budget has been restored to within \$7M of the FY 2006 Appropriation of \$87M, which translates to a FY 2006 operating budget of approximately \$80M. Although this still presents a challenge, it is a substantial improvement over the anticipated \$16M reduction.

We are continuing to partner with the Nevada Division of Environmental Protection to address this reduction, while at the same time minimizing any impact to agreed-upon milestones within the Federal Facility Agreement and Consent Order. However, the reality is that ultimately some projects will be delayed. As an example, the closure date for the Transuranic/Mixed Transuranic Waste Project may extend beyond 2007. We also anticipate some delay in the cleanup activities for the Soils project. However, the bottom line is that we will do everything possible to gain efficiencies to ensure that any impacts will be minimal.

We highly regard the partnership we have developed over the years working with our stakeholders and will continue to explore every alternative to honor our commitments and maintain a timely, honest dialogue. Thank you once again for your feedback and concern on behalf of Nevada's stakeholders. We will keep you informed as we move through the remainder of FY 2006.

Kathleen Peterson

March 21, 2006



If you have any questions, please do not hesitate to call Kelly Snyder, of my staff, at (702) 295-2836.

A handwritten signature in black ink, which appears to read "Stephen A. Mellington", is written over the typed name.

Stephen A. Mellington
Assistant Manager
for Environmental Management

PSG:1799.CL

cc:

- U. S. Senator John Ensign
- U. S. Senator Harry Reid
- U. S. Congresswoman Shelley Berkley
- U. S. Congressman Jim Gibbons
- U. S. Congressman Jon Porter
- Tim Murphy, NDEP, Las Vegas, NV
- CAB Members
- J. R. Rispoli, DOE/HQ (EM-1) FORS
- M. A. Nielson, DOE/HQ (EM-30.1) FORS
- A. C. Williams, NNSA/HQ (NA-56) FORS
- E. F. Di Sanza, DAMEM, NNSA/NSO,
Las Vegas
- K. K. Snyder, PSG, NNSA/NSO,
Las Vegas



**MEETING SUMMARY
COMMUNITY ADVISORY BOARD (CAB) FOR
NEVADA TEST SITE (NTS) PROGRAMS**

DATE: February 8, 2006
TIME: 6:30 p.m. to 9:00 p.m.
PLACE: Bob Ruud Community Center
150 S. Highway 160
Pahrump, NV

ATTENDEES:

CAB MEMBERS PRESENT: Kathleen Peterson, Chair; Marian Lawrence, Vice Chair; Kaye Allisen-Medlin, Bob Gatliff, David Hermann, Steve Hopkins, Genne Nelson, John Pawlak, Jackson Ramsey and Engelbrecht von Tiesenhausen.

CAB MEMBERS NOT PRESENT: Richard Nocilla, Charles Phillips, and Pauline Esteves.

LIAISON MEMBERS PRESENT: Stephen A. Mellington, U.S. Department of Energy (DOE), Nevada Site Office; Tim Murphy, Bureau of Federal Facilities, Nevada Division of Environmental Protection (NDEP); and Tiffany Lantow, Defense Threat Reduction Agency (DTRA).

LIAISON MEMBERS NOT PRESENT: Frank Tussing, Nevada Alliance for Defense, Energy, and Business.

PUBLIC/OTHER: Dr. Helen Neill, University of Nevada-Las Vegas (UNLV); Savanna Reid, UNLV; Sandy McFadden, Goldstein-Royan Environmental Technologies; Kathleen Rozner; Phillip Gomez, Pahrump Valley Times; Jennifer Viereck; D. H. Bradley; Bryan Norton; Cary Cerefice, ; Tony Hechanova, ; and Jeanette Daniels, UNLV.

DOE AFFILIATES: Kelly Snyder, DOE/NSO EM; Frank Di Sanza, DOE/NSO; and Carla Sanda, Consensus By Design. *Joanne Norton DOE/NSO EM*

CAB POINTS OF CONTACT: Kelly Snyder, DOE/NSO Environmental Management, P.O. Box 98518, Las Vegas, NV 89193, telephone (702) 295-2836; and Kay Planamento, CAB Administrative Support, Navarro Research and Engineering, Inc., 2721 Losee Road, Suite D, North Las Vegas, NV, telephone (702) 657-9088.

DOCUMENTS AND/OR HANDOUTS AVAILABLE AT THE CAB MONTHLY MEETING:

- February 8, 2006, Draft NTS CAB Agenda

- Copy of January 26, 2006 CAB letter to Stephen A. Mellington
- Copy of presentation, "NTS Transuranic Waste."
- Notification for Closed in Place Corrective Actions, February 8, 2006.
- Copy of Waste Management 2006 Conference presentation, "Well Siting Recommendation to DOE from the Nevada Test Site Community Advisory Board: A Case Study on Public Involvement"
- Winter 2006 *EM UPDATE*
- Fact Sheet entitled "Transuranic Waste . . . at the Nevada Test Site"
- Copy of CAB "Roadshow" presentation

The following is a summary of the NTS CAB monthly meeting held on February 8, 2006. A complete record of the meeting is available on tapes maintained in the NTS CAB official files.

7:05 p.m. APPROVAL OF AGENDA

Kathleen Peterson welcomed meeting attendees and expressed her pleasure at holding a CAB meeting in Pahrump.

After review, Jack Ramsey moved, seconded by Genne Nelson, to accept the agenda as written. Motion passed unanimously

Facilitator, Carla Sanda, reviewed the Ground Rules, which were created to help conduct more efficient, effective CAB meetings.

At this time the CAB members introduced themselves and identified their place of residence within the state.

7:13 p.m. DOE ANNOUNCEMENTS
 Stephen A. Mellington, Assistant Manager, DOE/NSO EM

Mr. Mellington read the CAB Mission Statement, welcomed those in attendance, and proceeded with the following announcements:

Fiscal Year 2006 Environmental Management Budget

The fiscal year 2006 Congressional Budget request was for ~\$87million. The DOE/NSO recently learned that the net operating budget had been reduced to approximately \$80 million due congressionally-directed or anticipated initiatives such as support to Katrina victims and the war in Iraq, multi-site requirements, and ~\$16 million dollars in Congressional earmarks for Nevada. These adjustments will clearly impact project activities for the coming year. Both the CAB and the State of Nevada have registered serious concerns with the proposed funding reductions. The CAB wrote a letter to DOE/NSO detailing its concerns (a copy of this letter was available on the information table). Throughout the years, the DOE has made firm commitments to the State of Nevada to ensure that adequate funding would be provided to support environmental restoration activities at the NTS. These commitments are not taken lightly; therefore, the DOE-NSO is continuing to address the issue with DOE Headquarters and hopes to have final resolution within the next several weeks.

Waste Management Activities

The transuranic waste shipping campaign that started in January 2004 was completed in November 2005. Joni Norton, DOE Transuranic Waste Project Manager will provide meeting attendees with the details of the very successful shipping campaign.

Mr. Mellington also briefly discussed the low-level waste shipments that routinely travel through Pahrump on their way to the NTS. In fiscal year 2005 the DOE received approximately two million cubic feet of low-level waste – a 40% drop from the previous year. During this fiscal year, waste volumes are expected to decrease by an additional 1,000,000 cubic feet – bringing the fiscal year 2006 low-level waste volumes to ~900,000 cubic feet. As sites begin to wind down their cleanup efforts, total volumes will continue to decrease through fiscal year 2011. The DOE receives inquiries along with photos from Pahrump residents about these low-level waste shipments. If anyone has questions about any of the shipments – or a particular truck – call the DOE offices at 702-295-3521. Additional information is also available by accessing quarterly reports of low-level waste shipments available on-line. A link is provided to this information on the CAB's website (www.ntscab.com).

The CAB UGTA Committee was recognized for their years of work and study on the NTS groundwater issue. The DOE/NSO will be reviewing their recommendations for future monitoring well locations and will continue to partner with the CAB on groundwater issues.

7:20 p.m. NEVADA DIVISION OF ENVIRONMENTAL PRODUCTION (NDEP)
ANNOUNCEMENTS
Tim Murphy, NDEP

Mr. Murphy emphasized that the State of Nevada will also correspond with DOE headquarters and representatives of the state to voice their concern related to the proposed FY 06 environmental management budget impacts. There have been some commitments made by the DOE/NSO and it is of great concern that appropriate funding levels will not be maintained and that the cleanup projects and related commitments could be adversely impacted.

He also announced that in the past the NDEP Office of Federal Facilities was split between the Carson City and the Las Vegas offices. Over the last year, all positions that were in Carson City have been moved to the Las Vegas office. Now the entire bureau is housed in Las Vegas providing NDEP with an opportunity to work closer with the community, with the CAB, and with oversight activities at the NTS. Having everyone in Las Vegas is a much proactive way for the NDEP to conduct its work.

Kathleen stated that it is reassuring to be able to partner with the state regulators on these budget cuts and the responses to the budget cuts.

7:22 p.m. NTS TRANSURANIC (TRU) SUCCESS STORY
Joni Norton, DOE/EM TRU Project Manager
[This presentation is located on the CAB website (NTSCAB.com) under presentations located on the left side of the home page]

This project has arrived at a point that it can be declared a success on the legacy TRU waste drums that were in the NTS inventory.

In a brief overview, Ms. Norton explained that TRU waste contains man-made radioactive elements heavier than uranium. Any element with an atomic number >92 in the periodic table is considered to be

a transuranic element. Examples of TRU waste at the NTS are contaminated worker clothing, tools, and debris generated from historic weapons development and dismantlement TRU waste is packaged in approved containers such as a 55-gallon drum. Occasionally, the 55-gallon drum is packaged in a larger 85-gallon drum to protect the drum inside. There are also some nonstandard boxes that are built around the waste inside to protect the workers as it is stored over time.

She also explained that most of the TRU waste at the NTS was generated at the Lawrence Livermore National Laboratory (LLNL) in the 1960s, and they began shipping it to the NTS in the 1970s and 1980s for temporary storage until a place for permanent storage was located. A building was erected (TRU Pad Cover Building) in Area 5 at the NTS to temporarily store the TRU waste (blue building on page 1 of presentation) and protect the drums from the weather. The TRU waste has been in this building since 1994.

TRU waste that was generated by U.S. Department of Energy (DOE) activities is disposed of at the Waste Isolation Pilot Plant (WIPP), a salt mine repository ~2150 feet deep located in Carlsbad, New Mexico. TRU waste that currently remains in storage at the NTS cannot be disposed of at the NTS, since it is approved for disposal of only low-level and mixed low-level wastes. All drums scheduled for shipment must meet a stringent Waste Acceptance Criteria. First, the waste must be characterized to accurately confirm drum contents. Once characterized, the drum is certified, and can be shipped to WIPP. When certifying drums, it is essential to identify items that are prohibited for disposal. As an example, drums containing free liquids or unpunctured aerosol cans would not meet the waste acceptance criteria. If any prohibited items are identified within a drum, the drum is transferred to a glove box operation (sealed containment system designed to protect the worker from exposure to drum contents). The prohibited item/items are removed from the drum, and the drum continues for disposal at WIPP. This operation is conducted in the Visual Examination and Repackaging Building at the NTS.

Shipping TRU waste is different than shipping low-level waste in many respects. As an example, drums of waste are placed into larger containers known as TRUPACT-II containers for shipment to the WIPP facility. In addition, the trucks carrying the TRUPACT-II containers did not travel through Pahrump. The DOE/NSO made 48 shipments (1860 drums) using these containers. Shipments were started in January 2004 and concluded in November 2005.

The TRU waste activities that remain at the NTS are associated with disposal of prohibited items. In some cases, an assay is conducted to determine the container's isotopic concentration. The container does not need to be opened. Instead, an In-situ Object Counting System (ISOCs) is used to examine the container from the outside to determine whether or not it is actually TRU waste. The boxes and drums that have not been characterized will go through a non-destructive examination through Real-Time Radiography (RTR). This operation provides the ability to view the contents of a drum – much like an x-ray - to determine the existence of any prohibited items. This process also eliminates the necessity to open the drums and expose the workers to any kind of radiation. Depending upon the outcome of further examination, some waste may actually be reclassified as low-level or mixed low-level waste, which can be disposed at the NTS. Eventually DOE/NSO will decommission the glove box and dispose of it onsite. At this point in time, 58 oversized boxes and ~200 drums remain stored at the NTS for disposal.

The oversized boxes are a challenge because they are non-standard and do not fit into the TRUPACT II transportation container. These cannot be shipped anywhere else and must be handled on site. Commercial disposal is being considered to size reduce and repackage the boxes to meet shipping requirements. Any TRU waste will be disposed of at WIPP and any low-level and/or mixed low-level waste will be disposed of at the NTS.

The timeline for the rest of the project calls for disposition of the 58 oversized boxes by the end of fiscal year 2007. Once these activities are completed, some of the buildings and structures will still remain standing (the TRUPACT cover building, the Visual Examination and Repackaging) to determine any potential for future use.

7:50 p.m.

COMMENTS/QUESTIONS

Ms. Norton thanked the CAB for its support and expressed how much her appreciation for their feedback and support throughout the TRU campaign.

In response to a query regarding the technology used to determine isotopic concentration levels, Ms. Norton provided some additional detail by saying that drum contents are measured in segments to identify any specific "hot spots", and then followed by an average of isotopes along the drum to determine whether or not it met the definition of transuranic waste (100 nanocuries per gram).

Q. Phil Gomez (*Pahrump Valley Times*). I was wondering about the transportation of this waste to the NTS. I understand that there is a HAZMAT or decontamination center in Henderson that responds to any accidental spills. Could you address their area of response and whether that would also extend up into the Pahrump area and central Nevada?

A. Ms. Norton. For the TRU waste shipments, the Carlsbad field office is responsible for establishing the route and they also train the emergency responders. I do not know whether or not Henderson HAZMAT would respond if there was an emergency in a shipment that was related to our shipments in this area. The DOE/NSO has conducted some emergency response exercises here at the NTS related to the TRU waste. They had emergency responders come to the NTS and conduct a practice run as if there was some kind of accident. However, I can't tell you if Henderson attended this exercise or not.

C. Mr. Mellington (DOE/NSO) clarified that this waste is shipped from the NTS, not to the site. Also, there is a Nevada State Highway Patrol escort in the state of Nevada as the waste leaves the NTS to the California line. If there was an emergency, they would be the officials in charge and it would be their responsibility to identify the specific emergency responder.

Mr. Gomez stated that this issue was recently discussed at a couple of Nye County Board of Commissioners' meetings. One of the commissioners has proposed developing a facility in Tonopah similar to the Henderson responder facility to handle central Nevada emergencies of any kind involving hazardous materials.

Tim Murphy of the NDEP offered to find contacts and additional information for Mr. Gomez.

C. John Pawlak (CAB) added that Nye County's emergency response group has been trained at the WIPP facility. Steve Mason from Pahrump took a course at WIPP entitled, "Train the Trainer," and became certified to train others. He trained not only the first responders in Pahrump, but he also traveled to the fire departments in Shoshone and Tecopa for training sessions. The Nye County first responders have also been trained for WIPP shipment emergencies.

Q. Tony Hechanova (UNLV and the Pahrump Nuclear Waste and Environmental Advisory Board). There was an issue in the past on classified TRU, and an issue, possibly anecdotal, of TRU waste that was emplaced in trenches. Can you clarify these issues?

A. Ms. Norton. Out of the 1,860 drums shipped to WIPP, 248 contained classified waste. The DOE/NSO was able to characterize them and certify them as any other waste drum to be shipped to WIPP. Some of the drums were not TRU, they were low-level waste. That waste stream has been dispositioned and was completed with this campaign.

A. Frank DiSanza (currently Deputy for the DOE/EM office, formerly Federal Project Director for Waste Management) provided the following additional clarification: There are two populations of waste at the NTS that are TRU. One is disposed and the other is basically under study.

The first population that is disposed is in the Greater Confinement Disposal facility. The appropriate regulations from the Environmental Protection Agency to demonstrate that it is safe to stay in the ground have been met. This has been worked through the DOE committee that is responsible for making those determinations, and they have given us approval to close that facility.

The second population is a little more uncertain as to what the status will be in the future. We refer to it as "TRU in the trenches." We have found out that at some time in the late 1970s or early 1980s, there was a shipment of 102 drums that came in and were supposed to be placed in the Greater Confinement Disposal facility. However, they were inadvertently placed into one of the shallow land burial trenches. Looking at the paperwork, the drums were TRU waste. The DOE/NSO is pursuing a process to evaluate whether or not that waste should stay there or if it should be excavated, characterized, and sent to WIPP. Jhon Carilli is the project manager and he is working on that issue this fiscal year. We hope to go back to the DOE committee that is responsible for making those determinations and present the technical data. The appropriate action will be taken after the committee evaluates the data presented to them.

Carla Sanda added that the CAB did recently receive a briefing on the "TRU in the trenches," so they are aware of the related activities. In addition, the CAB provided comments to the DOE-NSO related to disposition of classified drums.

Genne Nelson (CAB) My understanding is that the TRUPACT II containers were shipped across the NTS to gate 510, which is the back gate close to Lathrop Wells. From that point it was transported down Highway 373. The only Nye County community that was potentially affected would have been Amargosa Valley. There were no shipments through Pahrump.

Carla also welcomed Kathleen Rosner, the regional representative from Senator Harry Reid's Las Vegas office.

Kathleen Peterson presented CAB member John Pawlak with a plaque as a symbol of the CAB's appreciation for his 6 years of service on the CAB, his leadership, and for being a friend to his community.

He thanked the CAB members and its support staff for their help during his six years on the CAB.

8:08 p.m. CAB COMMITTEE UPDATES

Underground Test Area Committee - Engelbrecht von Tiesenhausen introduced a letter for approval. He thanked Savanna Reid (UNLV graduate student), Genne Nelson, and Steve Hopkins for all of their support and help in producing the letter. The letter has been prepared with the recommendation for two well locations on the NTS. Also attached is a short synopsis report of why these particular sites were chosen. At this point, all the work is not done. There is still one additional well site that the committee

would like to recommend to the DOE/NSO. The original third location proposed for a third well was eliminated due to serious accessibility and geologic constraints. The committee has also been provided the opportunity to select additional well sites, and will work hard to select several more well sites. The focus on these sites will be somewhat different than the current effort. The committee is going to look more at sentinel wells that can be used to determine if anything related to radionuclide contamination is moving off of the NTS into areas that are inhabited by citizens of Nevada. These wells will have one thing in their favor; they will be much less expensive to drill and they will act as a "first line of defense," in the event that the groundwater flow and transport predictions are not completely accurate. Models are just that - they are models, and cannot be regarded as totally representative of a system. Models are a scientific attempt to project what might happen. The area that is being modeled is extremely difficult from both a hydrologic and a geologic standpoint.

The letter and report was included in CAB members' information folders for review. It had previously been e-mailed to members for review.

Kathleen asked if there were any questions regarding the letter and report. Marian Lawrence moved, seconded by John Pawlak, that the letter and report be approved as written and transmitted to the DOE/NSO. Motion passed unanimously.

The letter and report will be available on the CAB website for the public to review.

Mr. von Tiesenhausen thanked Carla Sanda for reviewing and preparing the letter in its final form. There had been many edits by many people and she brought all of these ideas together in the final product.

Steve Mellington thanked the CAB for the years of work that has gone into this letter and report. The DOE/NSO looks forward to receiving the letter and they always to forward to partnering with the CAB.

Budget Committee - Dave Hermann, Committee Chair, briefly stated that the committee will begin its annual review of DOE's proposed budget allocation. This year, the committee will focus on proposed allocations for FY 2008 activities. Within the next month, committee members will meet with the project manager of each of the DOE projects. The members will then evaluate and prioritize the projects following its set of criteria. After approval by the full CAB, the prioritization will then be submitted to the DOE/NSO.

Diversification Committee - Jack Ramsey reported that the job of the Diversification Committee is to attract new members to serve on the CAB. Even though the salary is zero, there is a feeling of satisfaction in understanding the work that is being done as well as the progress that is being made in Environmental Management at the NTS. The CAB is currently conducting a recruitment campaign. Anyone can apply. Applicants need not be a technical specialist or have knowledge of any aspects of the nuclear field. (Applications were available on the information table at the back of the meeting room). Mr. Ramsey encouraged everyone to either take an application for themselves, or take one for someone else who might be interested in CAB activities.

Genne Nelson added that, as a Nye County resident who has been involved in the CAB for four years, that even though there is no pay, the DOE/NSO does reimburse travel expenses. The CAB also has at least half of the public meetings held in the rural communities. She encouraged Nye County residents to consider applying for CAB membership.

Transportation/Waste Committee - John Pawlak recognized that CAB member Bill King recently passed away and will be missed. He also announced that as of February 10, 2006, Dave Hermann will become the Chair of the Transportation/Waste Committee. Mr. Pawlak reported that the Committee's six-month work plan includes continuing to follow the final shipments of the TRU waste as it leaves the NTS going to the WIPP. He stated that he had been an observer at one of the WIPPTREX exercises, and that he has also traveled to the WIPP site on two occasions. CAB members have also traveled to Amargosa Valley to give briefings to residents because they live along the route taken by the trucks going to WIPP.

The committee will also be reviewing the National Low-Level Waste Disposition Strategy revision that will become available in March. The committee has already furnished one set of comments on the present strategy. When complete, this document will be an invaluable reference providing a clear picture of the current status of radioactive waste disposition throughout the DOE complex as well as provide a framework for future issues to be addressed.

The shipment of low-level waste will continue to travel through Nye County. This operation works hand and hand with emergency preparedness because there are monies derived from the waste shipments that are distributed to affected counties for emergency management equipment and training.

At one of the future public meetings, the CAB will invite Dr. David Shaffer to give a presentation on his study which was the largest test ever conducted of potential exposure from trucks during transit to the NTS.

8:25 p.m. PUBLIC COMMENT/QUESTIONS

Carla let everyone know that in addition to the public meetings, that all of the CAB meetings, including committee meetings, are open to anyone who is interested. The information will be posted on the website.

C. Jennifer Viereck (CA) - I want to express my gratitude for all of the work that has gone into the UGTA recommendation report and letter. I have attended several meetings over the last year and have just an inkling of the amount of work and pure heart that went into providing these recommendations. I want to thank you as a downstream person and an observer for all the effort that have been put into this.

8:30 p.m. OTHER CAB BUSINESS

- Carla informed CAB members that the next Site Specific Advisory Board Chairs' Meeting is scheduled from April 26-28 in Knoxville, TN. Sponsored by the Oak Ridge CAB, the meeting will kick off with a tour of the Oak Ridge facility, followed by 1.5 days of meetings. No agenda has yet been provided, but the CAB will make an effort to link the appropriate CAB member with the agenda to ensure that our Board is well represented.

The fall SSAB Chairs' meeting will be sponsored by the Northern New Mexico CAB in early September, followed by the Spring 2007 meeting which will be hosted by the NTS CAB here in Las Vegas.

- Helen Neill (UNLV) and Savanna Reid co-authored a paper that they are presenting at the Waste Management Conference in Tucson, Arizona. The paper is titled, "Well Siting Recommendation to DOE from the Nevada Test Site Community Advisory Board: A Case Study on Public Involvement." Copies of the paper were available at the information table.

- Carla added that another membership element of the CAB is that of a liaison member, which is a non-voting member who typically represents governmental agencies or other entities that have some interest or stake on what is going on at the NTS.
- Meeting Evaluation
 - Dave Hermann - appreciate the opportunity to present what the CAB is doing to the public
 - Kaye Allisen-Medlin - wonderful meeting, presentations were very informative
 - Helen Neill- meeting was great, appreciated all the questions from the audience, learning experience
 - Genne Nelson - appreciate how Joni puts her information in a nutshell that everyone can understand
 - Tim Murphy - good meeting, participation of the public is what it is all about
 - Steve Mellington - again thanked the CAB for their hard work. Thanked John Pawlak for his six years' of CAB participation.
 - Marian Lawrence - The letter and report were extremely well written and understandable. Thanked those who worked on those documents.
 - Jack Ramsey - good meeting, thanked Joni Norton for her excellent presentation
 - Bob Gatliff - good meeting, appreciated all the hard work and presentations
 - Tiffany Lantow - good meeting as usual and very interesting
 - John Pawlak - expressed his feeling that he is leaving the CAB on a high note and it has been a pleasure to be on the CAB.
 - Engelbrecht von Tiesenhausen - likes coming to the rural communities and getting to know the people who are actually more affected than those in Las Vegas. Appreciates the updates from the DOE and NDEP.

8:40 p.m. John Pawlak moved, seconded by Genne Nelson, to adjourn meeting.

Assessing Potential Exposure to the Public from Low-Level Radioactive (LLW) Waste Truck Transportation to the Nevada Test Site

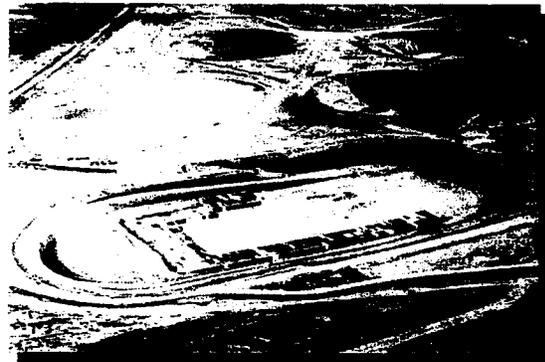
David S. Shafer
Julianne J. Miller
Bruce W. Church
Scott Campbell
Karen J. Gray
Barbara Holz



**Presentation for the NTS Community Advisory Board
December 2005**

Role of the Nevada Test Site (NTS) in Low - Level Radioactive Waste (LLW) Disposal

- US Department of Energy (DOE),
National Nuclear Security
Administration Nevada Site
Office
- One of two regional sites for
shallow land disposal of LLW in
the US from federal agencies
- Volumes of Waste Disposed:
 - +25 million ft³ since 1980
 - +3 million ft³ in FY 2003 &
2004
- Projected as major LLW disposal
site until at least 2021
- US DOE and US Department of
Transportation (DOT) regulate
LLW truck shipments in the US

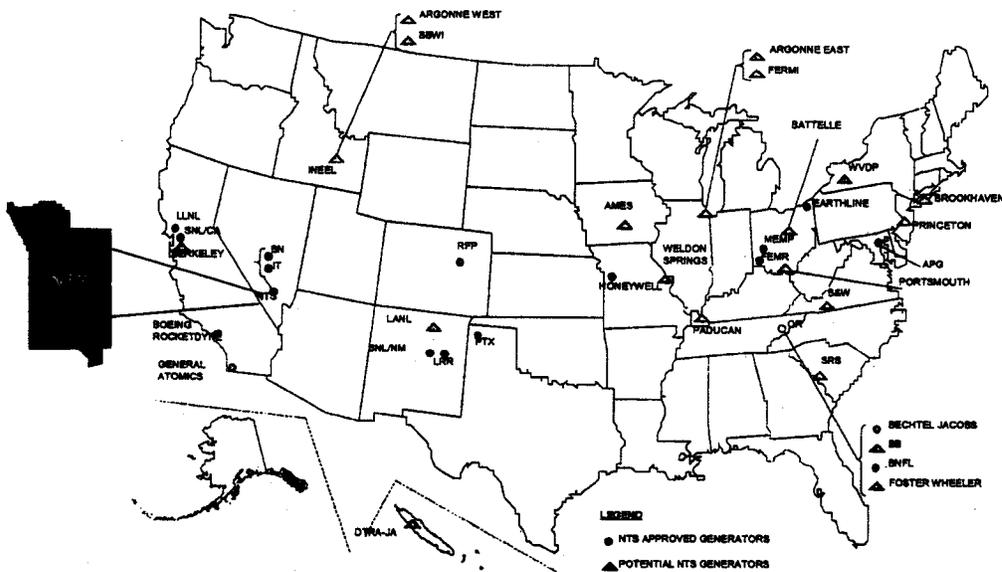


**Shallow land disposal of waste
containers at the Nevada Test Site**

What is Low Level Radioactive Waste?

- LLW is best defined by what it is not!
 - Not spent nuclear fuel or high level waste from reprocessing spent fuel.
 - Not transuranic wastes that have radionuclides heavier than uranium at concentrations greater than 100 nanocuries per gram.
 - Not uranium mill trailing waste.
- Most LLW is dominated by radionuclides with short half lives.
- For truck transportation, any potential risk from LLW would be from gamma radiation.
 - Trucks would shield alpha and most beta emissions.

Where Does LLW Waste Come from that is Disposed at the Nevada Test Site?



Location of "Waste Generators" in the US who have or who are sending LLW to the Nevada Test Site for disposal.

Transport of LLW to the NTS: What are Major Public Concerns?

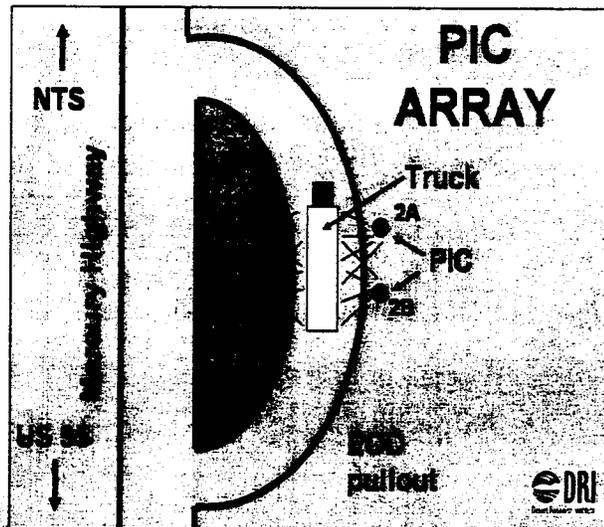


Two major categories of concerns:

1. Risk of accidents on public highways
 2. Cumulative exposure from LLW shipments—should it be of concern to the public?
 - Second issue especially of concern to citizens in small towns
 - LLW trucks use primary rural highway routes in states of Nevada and western Utah to reach the NTS
 - Where “Main Street” and the highway are the same.
- Most potential exposure information that is presented to the public based on calculated exposures.
 - Question from public:
What is the real exposure from the trucks?

Collection of Potential Exposure Data from Trucks Traveling to the NTS

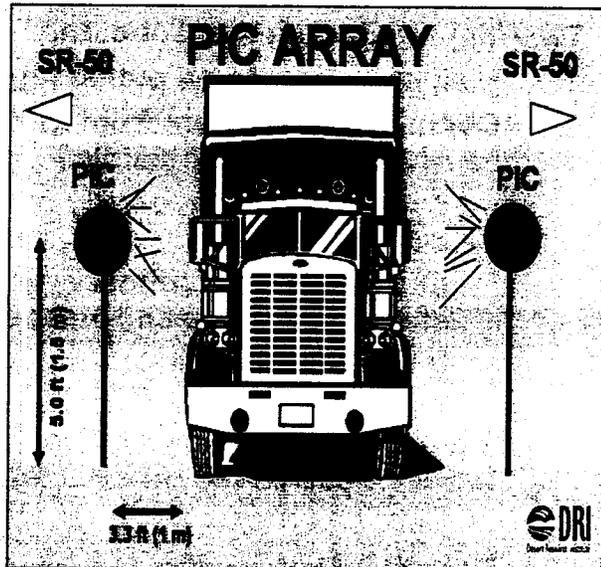
- Stationary and automated array of 4 Pressurized Ion Chambers (PICs)
- Position of PICs
 - 1 m from truck
 - 2 on each side of array
 - 1.5 m height
- Acoustic sensors as second means of detecting a truck
- Array designed to simulate condition of a person standing on side of road next to truck



Why 4 PICs?: To account for nonuniformity of the wasteload in the truck.

Transportation PIC Array

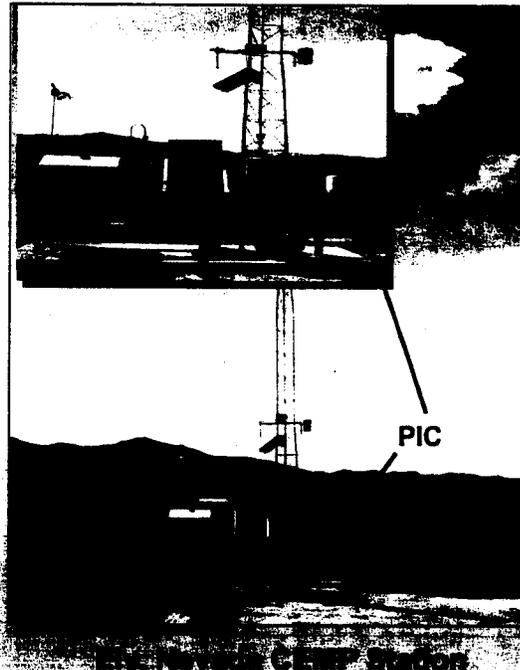
- Continuous operation of PICs
- PICs linked to programmed dataloggers
- Readings every 5 seconds. For every 2-minute period:
 - Maximum reading
 - Minimum reading
 - Average of 5-second readings
- Readings when trucks not present used to calculate background.
 - **There is always background radiation.**



Background at PIC Array Site: Range 9 to 50 $\mu\text{R/hr}$, typically 10 to 15 $\mu\text{R/hr}$.

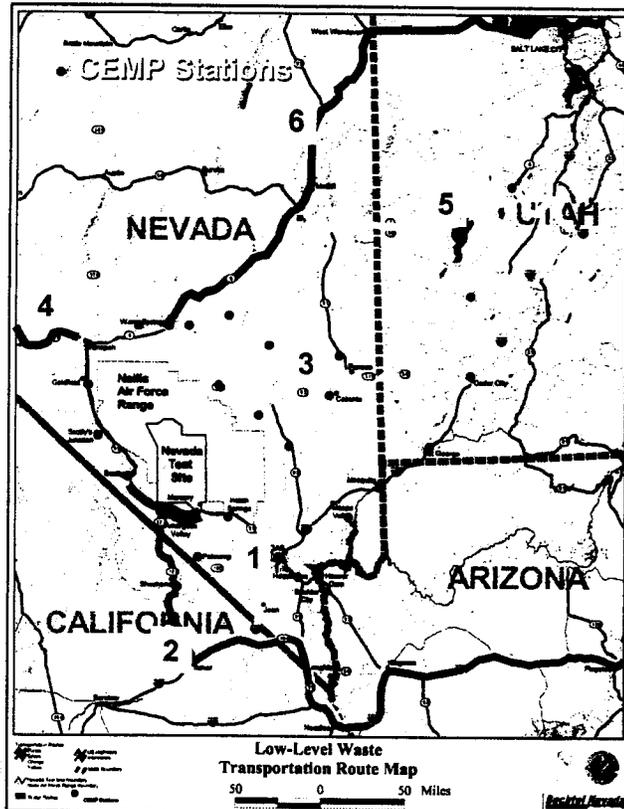
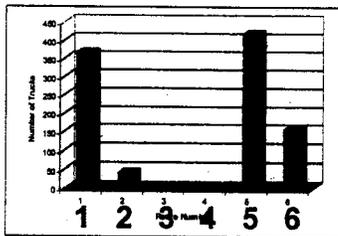
Why Use the Pressurized Ion Chamber (PIC)?

- Industry standard for *passive* measurement of gamma radiation.
- Many DOE sites use them for radiation monitoring.
- DRI uses PICs on the Community Environmental Monitoring Stations (CEMP) stations around the NTS.
 - People in CEMP communities are familiar with the output of the PICs.
 - Stakeholders are often familiar with background radiation readings in their areas.



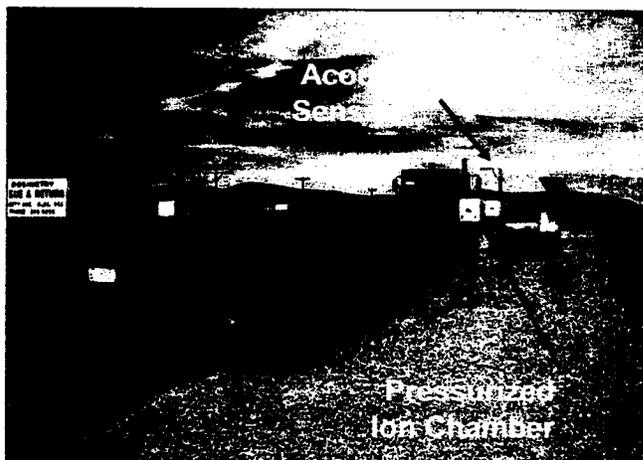
Routes Used to Transport LLW to the NTS

- A large number of the 28 CEMP stations are located in rural towns along routes.
- LLW shipments no longer allowed through Las Vegas.
- Route info was collected to do cumulative exposure measurements.



Calibration of the PIC Array

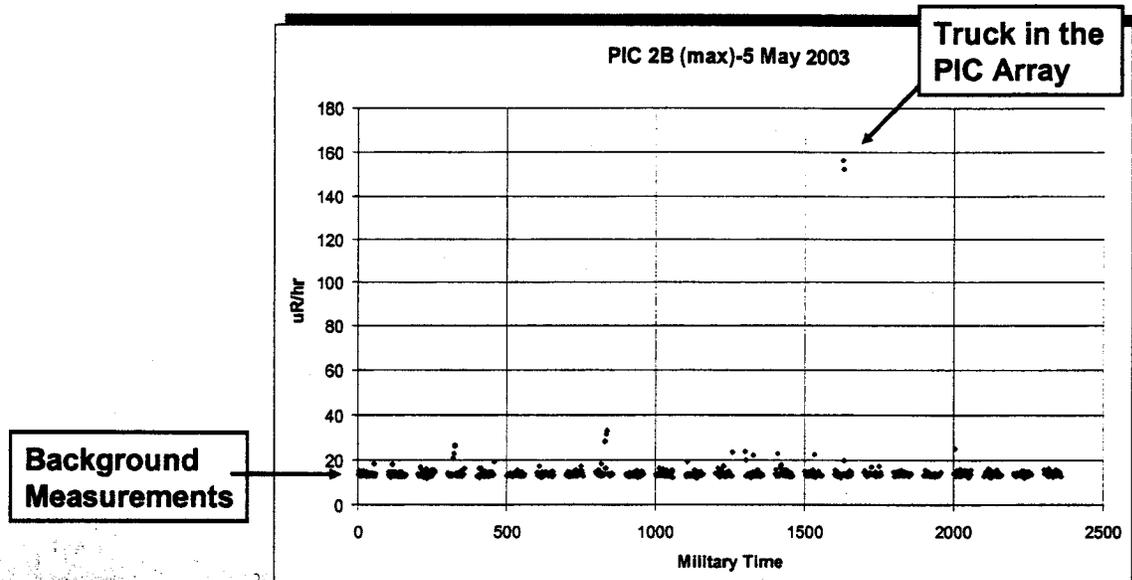
- PICs calibrated in the field at the array and in laboratory



- PICs in field and at DRI laboratory calibrated with 189.2 μCi ^{137}Cs source
- Measurements at 0.3, 0.5, 1.0 m distance between source and PICs
- Independent calibration of PIC 2A by Environmental Measurements Laboratory (EML), New York (Ra source used)
 - Only 3 % difference between Ra and Cs source calibration results

Representative Graphical Data Output During PIC Array Operations

Units: Micro-Roentgens per hour ($\mu\text{R/hr}$)



Attributes and Limitations of Data

- US DOE could not require generators to participate; therefore, *results are biased toward voluntary participants*
- Remote nature of site and 24-hour arrival of trucks made having person on-site to facilitate participation infeasible
- Size and nature of the data set
 - Measurements collected on 1,012 shipments between February and December 2003
 - Represented 47% of shipments to the NTS during the study period
 - 18 generators shipped waste to the NTS during the study period
 - Some trucks measured from 10 generators, including all the major shippers
 - Eight generators not included in database contributed only 2.3% of shipments to the NTS during the study period
 - ***And No Truck Driver Hit Any of the Instruments!***

Calculation of Net Exposure for a Truck

Units: $\mu\text{R/hr}$

Sequence Number	Shipment Identifier	Date	Arrival Time	Gross Value	Maximum Background	Standard Deviation	Net Exposure	Route Number
1	ETL03421	July 1, 2003	10:20:00 PM	15.08	13.76	1.43	-0.12	1
2	ETL03422	July 2, 2003	1:20:00 AM	15.08	13.76	1.43	-0.12	1
3	RFL03607	July 2, 2003	4:20:00 AM	15.09	13.76	1.43	-0.11	5
4	RFL03562	July 2, 2003	6:00:00 AM	14.85	13.76	1.43	-0.35	5

1. Gross Value at the PIC array

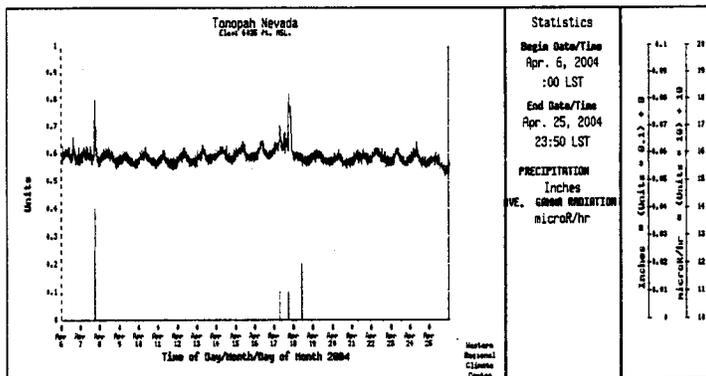
2. Average of maximum background PIC values during 12-hour periods

Net Exposure of trucks in this subset is all below background

3. Net Exposure = Gross Value from PIC - (background + standard deviation)

Background Radiation Sources and Causes of Variation

- Cosmic Radiation
- Natural Occurring Terrestrial Radioisotopes
 - ^{226}Ra , ^{238}U , ^{232}Th , and ^{40}K
 - ^{40}K makes only 0.012 percent of all K, but that is still a lot of Potassium!
 - **Radon:** daughter products are gamma emitters; example is ^{214}Bi
 - Fallout from nuclear testing, although much less than in the past.
- Weather changes can sometimes cause sharp changes in background radiation.



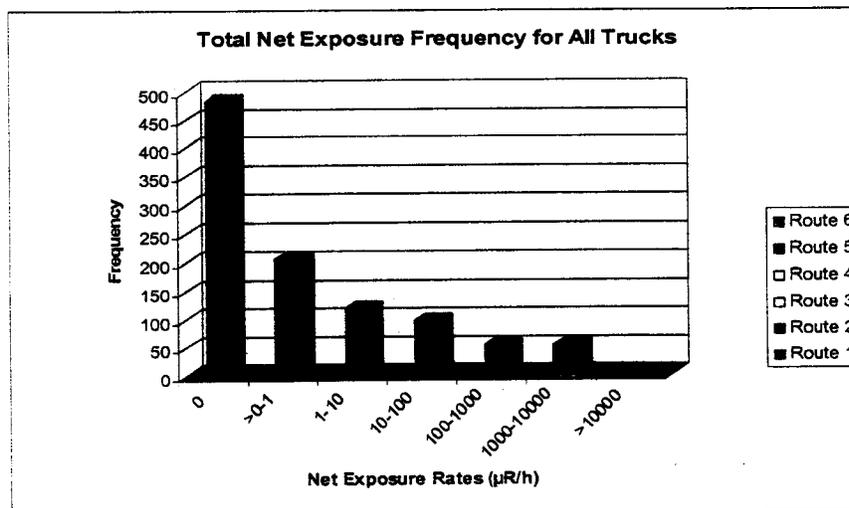
Gamma radiation "rainout" events in Tonopah, NV causes short peaks in background gamma radiation.

- On average, we get about 300 mR (mrem) per year from natural and man-made sources

Trucks with Measurements Greater than 800 $\mu\text{R/hr}$

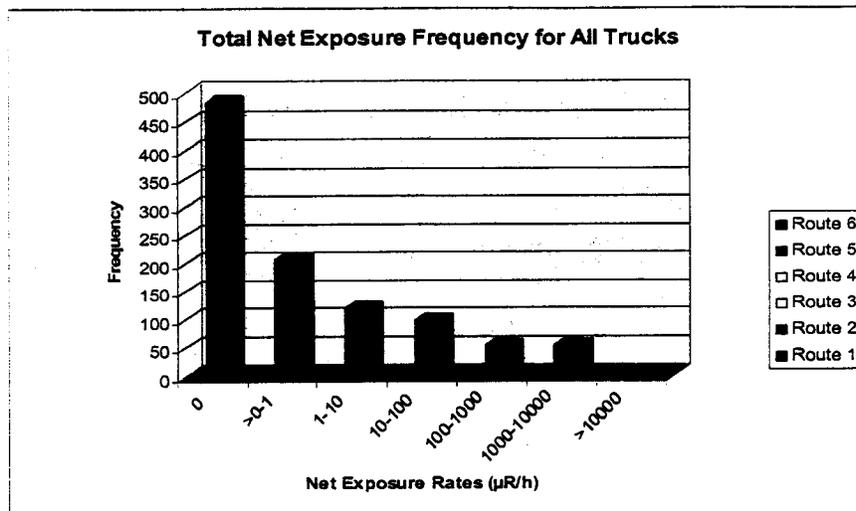
- Discovered after beginning of study that analog measurements on PICs unstable for readings $>800 \mu\text{R/hr}$.
- PICs did not auto scale to readings greater than 1 mR/hr.
 - 59 trucks had one or more PIC readings $>800 \mu\text{R/hr}$
- Remedy—Use measurements of trucks taken at waste disposal site for checking USDOT compliance
 - Readings taken at 0.1 (contact), 0.3, and 1.0 m from truck
 - Ludlum Model 3 unidirectional gamma detector used
 - USDOT requires that highest spot reading on truck be recorded
 - Plot of data indicates decrease in exposure at less than $1/D$ where D =distance.
 - Readings at disposal site estimated to be ± 35 percent
- Quality Assurance Check: 58 of 59 trucks with readings $>800 \mu\text{R/hr}$ at PIC array had readings at least as high at 1m at waste disposal site
 - One exception had reading = 750 $\mu\text{R/hr}$

Major Results



- Of 1,012 trucks measured, 483 (47.7%) of trucks could not be distinguished from background. Another 206 trucks (20.4%) were less than 1 $\mu\text{R/hr}$.
- 54 trucks (5.3%) exceeded 1000 $\mu\text{R/hr}$ (or 1 mR/hr). These contribute most to cumulative exposure calculations
- One truck greater than 10 mR/hr at 1 m (DOT standard is 10 mR/hr at 2 m).

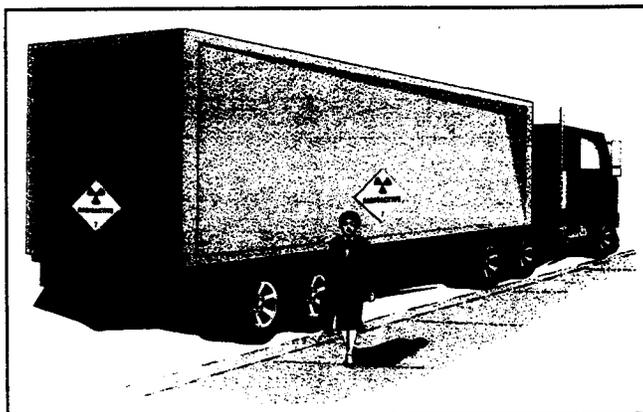
Major Results (cont.)



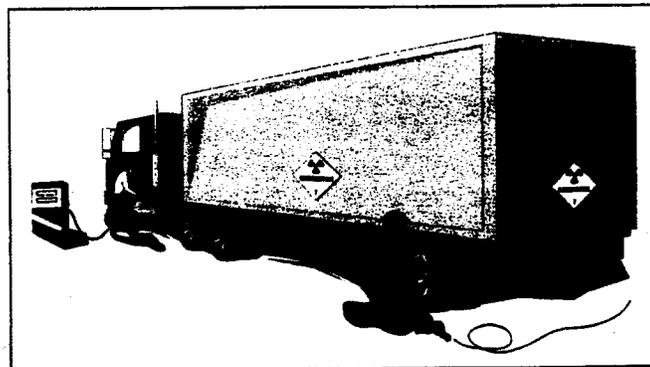
- Some traditional measures do not make much sense for this data.
 - Example: the average truck reading was 207 $\mu\text{R/hr}$.
 - Most trucks measured were well below the average. The average is skewed by a few comparatively high readings.
 - The median is a better measure: 8.47 $\mu\text{R/hr}$.

Cumulative Exposure Scenarios

“Pedestrian scenario”
In which person walks
At distance of 1 m from
truck for 15 seconds.

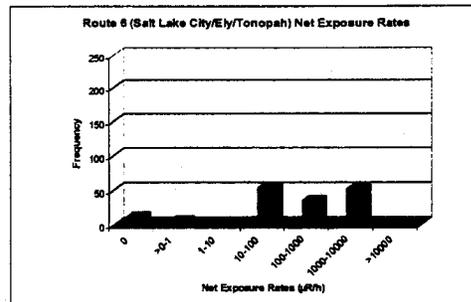
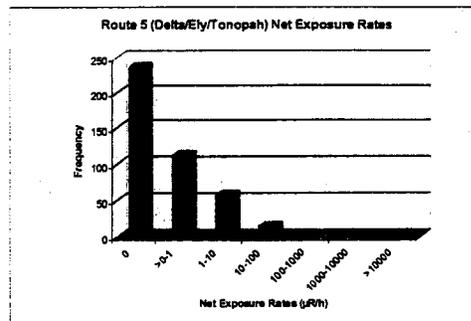


“Service attendant scenario”
had some of the higher
cumulative exposure values
because of the amount of
time they spent near each
truck.



Cumulative Exposure Definitely Not Simply a Function of the Number of Trucks

- Route 5 through Delta, Utah and Tonopah, Nevada
 - 427 Trucks
 - 7 mR Total Net Exposure
- Route 6 through Salt Lake City, Utah, and Ely, Nevada
 - 162 Trucks
 - 193 mR Total Net Exposure



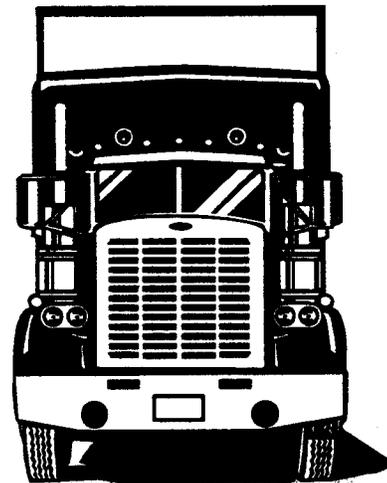
Cumulative Measurements Are a Worst Case Scenario: It assumes the same individual is exposed to every truck that goes through a particular town.

Cumulative exposures could be *strongly* influenced by a small percentage of the trucks. An example:

- Cumulative exposure for the Amargosa Valley route “pedestrian” exposure scenario.
 - same person is exposed to all trucks for a period of 15 seconds.
 - 42 trucks used the route.

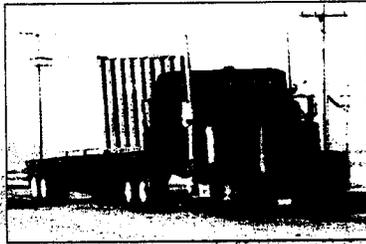
Total Exposure all Trucks: 3.04 μ R
 Subtract truck with highest rate: 1.96 μ R
 Result: 35 % reduction in total exposure!

- Truck with the “Highest rate” was 259.20 μ R/hr
- Without this one truck, the cumulative exposure goes way down.



Major Results

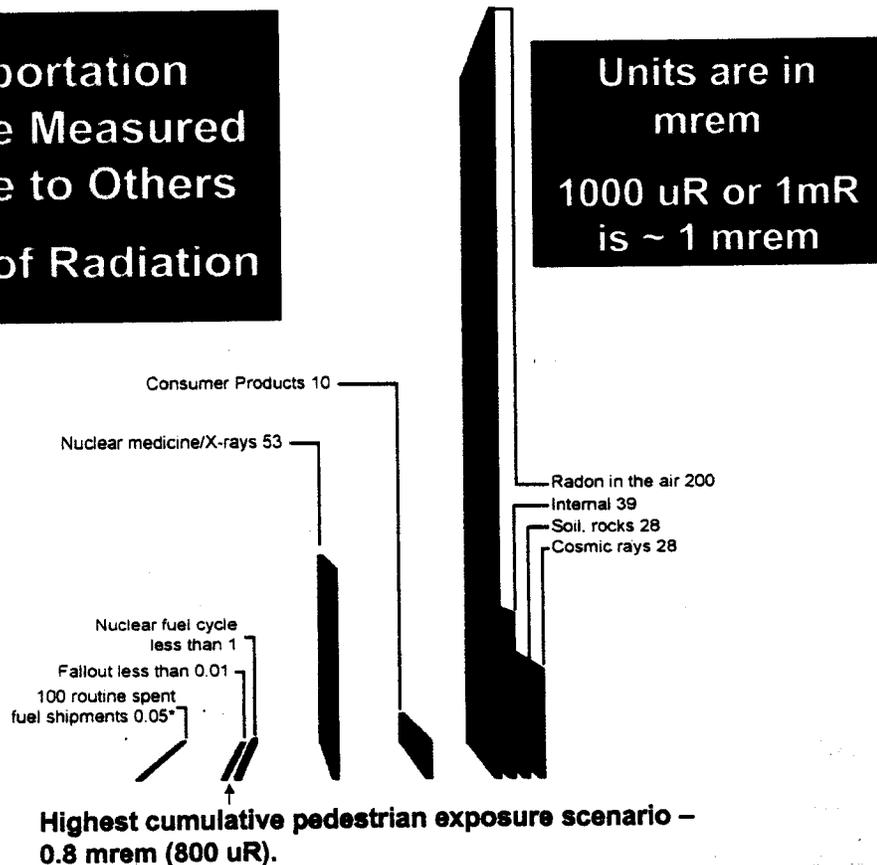
- About 70% of trucks had no net exposure or were less than 1 uR/hr
 - 1 uR/hr = 1/100,000 of the DOT Shipping Standard.
- The 54 trucks with exposures $\geq 1000 \mu\text{R/hr}$ (1 mR/hr) dominate cumulative exposure calculations.
- No trucks exceeded any DOE or DOT standards.



Major Concerns About the Results

- Units of radiation are unfamiliar to many people.
 - Will people assume any number that was larger represented a risk?
- Some people will be opposed to any potential exposure above background.
- DRI always used the highest reading from each truck.
 - Is this exaggerating the risk?
- Stakeholders need to understand how potential exposure from LLW trucks compare to other sources of radiation. →

Transportation Exposure Measured Compare to Others Sources of Radiation



Closing

Study was the largest ever conducted of potential exposure from trucks during transit.

Not realistic to talk about "typical" or "average" trucks. Better to talk about the range of potential exposures.

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