AGENDA

62nd WIPP QUARTERLY REVIEW MEETING
April 30, 1998

Department of Energy
Skeen-Whitlock Building
4021 National Parks Highway
Carlsbad, NM 88220
505-234-7303

9:30 a.m. Welcome and Opening Remarks 10 min. George Dials, CAO
9:40 a.m. Environmental Evaluation Group Status/Activity Report 30 min. Robert Neill, Director, EEG
10:10 a.m. NMED DOE Oversight Status/Activity Report 15 min. Steve Zappe, NMED
10:25 a.m. NMED Haz/Rad Materials Status/Activity Report 15 min. Steve Zappe, NMED
10:40 a.m. N.M. Radioactive Waste Task Force Status/Activity Report 20 min. Chris Wentz, NMEMNRD
11:00 a.m. U.S. Department of Energy Status/Activity Report 30 min. George Dials, CAO
11:30 a.m. LUNCH 90 min.
1:00 p.m. Summary of ORR Review 20 min. Wayne Walker, CAO
1:20 p.m. EEG-67: Pre-operational Radiation Surveillance by EEG, 1993-1995 10 min. Jim Kenney, EEG
1:45 p.m. EEG-68: Comments on EPA Proposed Rule 40 min. EEG
2:10 p.m. Site Certification Audit Update 30 min. Butch Stroud, CAO
2:40 p.m. BREAK 15 min.
2:55 p.m. TRU Waste Characterization/Certification 30 min. Kent Hurter, CAO
3:25 p.m. HALFPACK Tests 20 min. Mike Brown, CAO
3:45 p.m. Schedule for WIPP Opening and 1998 Shipments 20 min. George Dials, CAO
4:05 p.m. Open discussion period 20 min. All
4:25 p.m. Action Item Commitments/Closeouts 15 min. Pat Kilgore, CAO
4:40 p.m. Adjourn

Rev. 3, 4/28/98

980426
DOE 08

Tom left, 4 vacancies
Resume WIPP involvement when waste receipt begins.
- other facilities (LANL, SNC) more pressing

NMED -

WIPP inspection - LOV 2/15
response 2/12
Application revision verification - all topics verified as updated.
Send to By-pass - need top/video

Draft Permit - focused, on target, etc

Jokes

Size
Availability - various public locations, web page
EPA review of preem draft.

Received copies of maps, figures, etc. Fun and
No hints - everything will become clear upon release

Guessmotes of note
Share - photo
LXII QUARTERLY MEETING

U.S. Department of Energy
N.M. Energy Minerals and Natural Resources Dept.
N.M. Environmental Evaluation Group
N.M. Environment Department
N.M. Attorney General

Robert H. Neill

April 30, 1998
Carlsbad

Providing an independent technical analysis of the Waste Isolation Pilot Plant (WIPP), a federal transuranic nuclear waste repository.
Published Reports

EEG-65  Probability of Failure of the Waste Hoist Brake System at the Waste Isolation Pilot Plant (WIPP), January 1998

EEG-66  Individual Radiation Doses from Transuranic Waste Brought to the Surface by Human Intrusion at the WIPP, February 1998


EEG-68  Evaluation of the WIPP Project’s Compliance with the EPA Radiation Protection Standards for Disposal of Transuranic Waste, March 1998

EEG-69  Sensitivity Analysis of Performance Parameters used in Modeling the Waste Isolation Pilot Plant, May 1998

EEG-70  EEG Observations of the March 1998 WIPP Operational Readiness Review Audit, May 1998
Selected Outstanding Issues

• Request to DOE re method of resolving EEG comments on WAC as required in DOE order 5820.2A

• Status of establishing radiochemical analytical capability at site (EEG-70)

• Additional operational readiness concerns

• EEG requests to address inflow of water at exhaust shaft

• Recent sharp increase in rising water levels in Culebra north of site
(6) The Waste Isolation Pilot Plant-Waste Acceptance Criteria Certification Committee shall submit Certification and associated quality assurance plans to the state of New Mexico’s Environmental Evaluation Group for review and comment prior to granting formal approval of such plans.

(7) The Environmental Evaluation Group’s comments on certification and associated quality assurance plans shall be resolved between the affected site and the Waste Isolation Pilot Plant-Waste Acceptance Criteria Certification Committee prior to granting formal approval of the plans.
• Status of national TRU Management Program
  • Buried TRU wastes
    • Update of inventory
    • Migration of actinides
    • LANL cleanup decision scheduled for 2008
      Stored TRU Am-241  9113 Ci
      Buried TRU Am-241  5970 Ci

• Petition to NRC to eliminate 10 CFR 71.63 double containment and liquid Pu transportation requirements

• Status of variance request to permit Pu shipments with concentrations exceeding 10% Pu (Level D Safeguard Limits)

• Changing existing CH-TRU waste inventories
Carlsbad Area Office

Office of Area Manager
Manager - Dials
Deputy Manager - Vacant
Executive Officer - Daugherty, Acting
Admin. Asst. - King
Secretary - Morales

Office of Program Support
Assistant Manager - Miner
Secretary - Vacant

Office of Development & Research
Assistant Manager - Mewhinney, Acting
Secretary - Eavenson, Acting

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Assistant Manager - Mewhinney, Acting
Secretary - Eavenson, Acting

Office of Regulatory Compliance & Assurance
Assistant Manager - McFadden
Secretary - Grindstaff

Office of Waste Disposal Operations
Assistant Manager - Hunter
Secretary - Snow

Public Affairs
- OPA Team Leader - Hurtt
- Intergovt Program Mgr. - Sahd
- Stakeholder Relation Spec. - Kilgore
- Secretary - McNabb

Legal Counsel
- Chief Counsel - Wayman
- Counsel - Rose
- Paralegal - Vacant
*Legal Secretary - Vacant

Office of Program Support
- Administrative Team Leader - Reese, Acting
- Training Admin. - Reese
- Information Mgr. - Milligan
- Admin. Specialist - Bustos
*Management Analyst - Vacant

Program Planning Team Leader - Holmes
- Senior Program Analyst - Holman
- Program Analyst - Huckeba
- Program Analyst - Conway
*Program Analyst - Vacant (Upward Mobility)
- Budget Analyst - Seguinot

Contracts Team Leader - Carroll
- Contracts Specialist - Colt
- Admin. Specialist - Crockett
- Procurement Clerk - Murrill, Acting

Office of Development & Research
- Research Team Leader - Galbraith, Acting
- Research/Test Eng. - Lark
*Research Engineer - Vacant

Technology Development Team Leader - Nielsen
*Technology Development Eng. - Vacant
-Waste Packaging Dev. Mgr. - Vacant
*Technology Transfer Eng. - Vacant

Program Development Team Leader - Scott
- International Programs Eng. - Matthews
*Program Development Mgr. - Vacant
*Southeast HM Program Mgr. - Vacant

Office of Regulatory Compliance & Assurance
- Secretary - Fox
- Compliance Team Leader - Basebilvazo
*Performance Assessment Eng. - Vacant
- NEPA Compliance Officer - Johnson
- RCRA Environmental Eng. - Snider

Safety & Health Team Leader - Lilly
- General Engineer - Zvonar
- Radiological Safety Eng. - Farrell
- Security Manager - Galle
*Safety Eng./Industrial Hyg. - Vacant

Assurance Team Leader - Brown D.
- Certification Manager - Stroud
- Quality Assurance Eng. - Italiano
- Quality Assurance Eng. - Vega
- Quality Assurance Spec. - Chism

Office of Waste Disposal Operations
- Facility Representative - Klaus
- WIPP Operations Team Leader - Walker
- Waste Operations Program Mgr. - Bennington
- Mine Operations Program Mgr. - Gilbert
- Plant Engineering & Program Mgr. - Oliver
- Maintenance Programs Mgr. - Briceno

Transportation Team Leader - Sweeney
*Transportation Emergency Coordinator - Vacant
- Institutional Affairs Mgr. - Smith

Transportation Pack. Mgr. - Vacant
- TRU Waste Planning Mgr. - Brown, M., Acting

*Authorization Under Development
## CARLSBAD AREA OFFICE

### BUDGET PROFILE

**Fiscal Year 1999 President's Budget**

(Thousands)

<table>
<thead>
<tr>
<th>Project</th>
<th>FY97</th>
<th>FY98</th>
<th>FY99</th>
<th>$ Change</th>
<th>% Change</th>
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<tbody>
<tr>
<td>CAO - 1 WIPP Base Operations</td>
<td>$100,058</td>
<td>$98,700</td>
<td>$105,743</td>
<td>+7,043</td>
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<tr>
<td>CAO - 2 Disposal Phase Certifications/Experimental Programs</td>
<td>46,113</td>
<td>41,647</td>
<td>36,178</td>
<td>-5,469</td>
<td>-13%</td>
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<td>CAO - 3 Transportation</td>
<td>14,196</td>
<td>8,982</td>
<td>20,263</td>
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<td>CAO - 4 TRU Waste Sites Integration and Preparation</td>
<td>28,458</td>
<td>24,537</td>
<td>22,007</td>
<td>-2,530</td>
<td>-10%</td>
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<td><strong>Total</strong></td>
<td>$188,825</td>
<td>$173,866</td>
<td>$183,591</td>
<td>+9,725</td>
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<td>CAO-6 TRU Waste Transportation Privatization</td>
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<td></td>
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<td>CAO Program Totals</td>
<td>$188,825</td>
<td>$194,866</td>
<td>$203,199</td>
<td>+11,125</td>
<td>+6%</td>
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NEW MEXICO ORGANIZATIONS RECEIVING FUNDS FROM DOE FOR OVERSIGHT, TECHNICAL REVIEWS, AND ANALYSES OF THE WIPP PROGRAM

<table>
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<tr>
<th>Organization</th>
<th>Scope</th>
<th>Funds</th>
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<tr>
<td>Environmental Evaluation Group</td>
<td>Technical Review</td>
<td>$1,748,000 FY98 $1,355,000 FY99</td>
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<td>New Mexico Energy, Minerals and Natural Resources Department</td>
<td>Emergency Response</td>
<td>$1,095,000 FY98 $923,000 FY99</td>
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<tr>
<td>New Mexico Environment Department Agreement in Principle (AIP)</td>
<td>Environmental Monitoring and Technical Review</td>
<td>Approximately $3,000,000 each FY</td>
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<td>Western Governors' Association (New Mexico's share) *</td>
<td>Transportation, Safety, and Emergency Preparedness</td>
<td>*$15,000 FY98 *$5,000 FY99</td>
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<td>Carlsbad Environment Monitoring and Research Center (CEMRC)</td>
<td>Environmental Monitoring and Technical Review</td>
<td>$3,809,000 FY98 $4,120,000 FY99</td>
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<tr>
<td>Department of Development Training Center</td>
<td>Provides TRU-related training to DOE</td>
<td>$0 FY98 $0 FY99</td>
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<tr>
<td>New Mexico Impact Assistance</td>
<td>Land Withdrawal Amendment Act for Roads</td>
<td>$20,000,000 FY98 $20,000,000 FY99</td>
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* State of New Mexico portion of approximately $1.2 million budgeted for WGA

Total Funding -- $29,667,000 FY98 $29,403,000 FY99
WIPP SCHEDULE

- Operational Readiness Review declaration
  1998  March
- EPA certification
  1998  April
- Energy Secretary's decision
  1998  April
- Notify states and tribes of intent to transport
  1998  April
- Disposal operations begin
  1998  May
- Resource Conservation and Recovery Act Permit Part B
  1998  October
Non-Mixed Waste For Disposal at WIPP

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<tr>
<th>Sites</th>
<th>FY 98</th>
<th>FY99</th>
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<tr>
<td>INEEL</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>LANL</td>
<td>17</td>
<td>23</td>
</tr>
<tr>
<td>RFETS</td>
<td>15</td>
<td>151</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td>183</td>
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REMAINING STEPS

- EPA certification
- Secretary's decision
- WIPP opens
- RCRA permit
SHIFT HAPPENS!
WIPP Operational Readiness

Wayne Walker - CAO
62nd WIPP Quarterly Review Meeting
April 30, 1998

Components of WIPP Readiness

- Line Management Assessment
- Integrated Facility Checkout
- Continued Operational Mode
- Line Management Assessment Verification
- Performance Dry Run
- Contractor ORR
- DOE ORR
- Declaration of Readiness

Integrated Facility Checkout

- 4/1/97 - 4/30/97
- WIPP placed in "operational mode"
- Gate-to-salt waste handling
  - radiological controls
  - facility in mode compliance per SAR/TSR
  - compliance with RCRA permit application
  - extensive drills

Readiness Requirements

- DOE O 425.1, STARTUP AND RESTART of NUCLEAR FACILITIES
- Operational Readiness Review required for the initial startup of a hazard category 2 facility
- Startup approval authority delegated from the Secretary to the CAO Manager

Line Management Assessment

- 7/29/96 - 7/21/97
- Matrix - Criteria vs. departments/systems
- 1165 Affidavits
- Prepared by department manager
- Approved by senior management
- 447 pre-start findings
  - All (but 1) pre-start findings closed

Continued Operational Mode

- 7/1/97 - 10/17/97
- Approximately 3 weeks per month
- Emphasis on identifying and resolving problems of keeping the plant and operation in mode compliance
Line Management Assessment Verification
- 9/2/97 - 10/17/97
- Verify selected sample of LMA affidavits
- Ensure that closed affidavits remained closed

Performance Dry Run
- 9/8/97 - 9/19/97
- Full-cycle demonstration
- WWIS data from INEEL
- Transportation - INEEL to WIPP
- Emplacement with backfill at WIPP
- WWIS data update
- Successful performance in all areas

Contractor ORR
- 1/12/98 - 1/23/98
- Results
  - 15 pre-start findings
  - 23 post-start findings
- Pre-start corrective actions completed and verified by 2/24/98

DOE ORR
- 3/2/98 - 3/6/98
- Results
  - 6 pre-start findings
  - 16 post-start findings
- Conclusions
  - Upon closure of pre-start findings and approval of the CCA by the EPA, WIPP is ready to receive TRU waste.
  - Upon receipt of RCRA permit, WIPP is ready to receive mixed-TRU waste.

DOE ORR
- Pre-start findings closed and verified by 3/25/96
- CAO Manager issued Readiness to Proceed with WIPP Disposal Operations memo to Secretary on 3/26/98

Remaining Actions
- Post-start findings
  - 9 closed and verified
  - 5 closed pending verification
  - 22 open post-start findings

Wayne Walker
EEG Comments on the EPA’s Proposed Rule for WIPP

62nd WIPP Quarterly Review Meeting
Carlsbad
April 30, 1998
Outline of EEG-68

- Assurance Requirements: Institutional Controls, Monitoring, Engineered Barriers, Resource Disincentive, Retrievability
- Groundwater Protection Requirements
- Individual Protection Requirements
Dewey Lake Redbeds Hydrology-Information in the CCA

- “The Dewey Lake contains a productive zone of saturation, probably under water-table conditions, in the southwestern to south-central portion of the WIPP site and south of the site.” (CCA, 2.2.1.4.2.1)

- “The Dewey Lake has not produced water within the WIPP shafts or in boreholes in the immediate vicinity of the panels.” (CCA, 2.2.1.4.2.1)

- “The DOE assumes that chemical retardation occurring in the Dewey Lake will prevent release within 10,000 years of any actinides that might enter it” (CCA 6.4.6.6)

- “The units overlying the Dewey Lake…are thin and predominantly unsaturated at the WIPP site…” (CCA, 6.4.6.7)
DLR Hydrology-Post CCA Information
(From DOE/WIPP 97-2219, January, 1997)

• “The data obtained from the installation, sampling, and testing associated with wells C-2505, C-2506, and C-2507 indicate that a water-saturated horizon is present in the lower Santa Rosa/upper Dewey Lake Formations in the depth range where water is leaking into the exhaust shaft (50 to 100 feet bgs).” (p. 23)

• “A long-term pumping test, 1-to-7 days in length, or longer, would help to determine if wells C-2505 and C-2506 are sufficient as a dewatering mechanism, or if additional wells may be required to stop seepage through the shaft liner...If significant dewatering occurs during testing, noted by head values not returning to pre-pumping test conditions, then the water-bearing unit may be limited in extent. On the other hand, if head values do return to near pumping-test conditions, then the areal extent of the water-bearing horizon may be large enough to warrant further hydrologic investigations.” (p. 24)
DLR Hydrology-Post CCA Information
(From DOE/WIPP 97-2278, January 1998)

- "During the February 1997, 24-hour C-2505 step-drawdown pumping test, measurable fluid pressure responses were observed in both observation wells, C-2506 and C-2507. However, the magnitude of the response in C-2507, 197 feet away from C-2505 was almost twice the magnitude of the response in the observation well C-2506, 34 feet away from C-2505, suggesting some type of connection." (p. 7)

- "In both wells the total dissolved solids (TDS) concentration were less than observed in October, 1996. In C-2506 the TDS decreased from about 11500 to 6000 MG/L, while in C-2505 the TDS decreased from about 8500 to 4500 MG/L." (p.7)

- "Test data indicated that the wells nearest the Exhaust shaft were capable of sustaining water production in the range of 0.3 to 0.6 gallons per minute for a period of 24 hours or longer." (p.1)
DLR Hydrology-Post CCA Information (From DOE/WIPP 97-2278, Contd.)

- "Tests indicate that the maximum sustainable pumping rate is approx. 2.0 gpm at PZ-12. The minimum sustainable pumping rate is approximately 0.2 gpm at PZ-2. The average sustainable pumping rate for the wells and the piezometers is about 0.6 gpm." (p. 66)

- "Of the twelve piezometers and three wells installed at WIPP between September 1996 and August 1997, only PZ-8 is dry. In every other monitoring well water is present....It is also likely that the saturated area is significantly larger than the present 80-acre investigative area, but in order to clearly define the area extent of water within the Santa Rosa Formation additional boreholes would have to be drilled." (p. 69)
Summary of EEG Concerns on DLR Hydrology

• CCA states that the DLR and Santa Rosa Formations have not produced water within the WIPP shafts or in boreholes in the immediate vicinity of the panels. The January 1998 DOE report says that in the whole 80 acre area containing the shafts and other WIPP buildings, the lower Santa Rosa/upper DLR is saturated and may be so beyond the area of investigation. Shouldn’t CCA be corrected?

• The well WQSP-6 unexpectedly encountered water in the DLR in October 1994. WQSP-6a was completed in the DLR, was pumped for three days at 12 gpm, and transmissivity of $5 \times 10^{-4} \text{ m}^2/\text{s}$ was calculated (Beauheim presentation at the 11/26/96 Quarterly Mtg.). The CCA uses $T=5 \times 10^{-8} \text{ m}^2$ for the DLR. Why?

• Water quality in the Santa Rosa/DLR wells near the shafts has changed drastically in four months between October 1996 and February 1997. Why? What is the trend since February 1997?
Culebra Water Level Rises

• Sudden water level rises in the Culebra aquifer in wells DOE-2, H-6b, H-18, WIPP-12, WIPP-13, WIPP-30, WQSP-1 and WQSP-2, all located in the northern part of the WIPP site, have been observed since January 1998. Why? Until now such dramatic water level changes were confined to the south of the site.
Figure 1.1 Location of Boreholes C-2505, C-2506, and C-2507

NOTE:
1. H=COLLAR ELEVATION (TOP OF PIPE)
2. SURVEY DATE 10/03/96
3. FIELD CREW: T. PHILLIPS-WESTINGHOUSE
   G. AFFOLTER-GARWIN GROUP
4. EQUIPMENT: T/E 1800-M-300D DIGITAL LEVEL

SCALE

Example:
N 9069.04 19
E 7374.15 10
H 3410.01 01

Figure 1.2 Location of Boreholes and Shaft

Example:
N 9266.10 01
E 7369.78 10
H 3413.05 01

EXHAUST SHAFT

NOTE:
25015
25025
25010
25015
25025
25010
Figure 2.1 Location of Shallow Hand Augered Boreholes
Figure 2.2 Location of Piezometers PZ-1 through PZ-12
Exhaust Shaft Hydraulic Assessment

C-2505

Figure 3.1. Water level versus time for monitor well C-2505
Exhaust Shaft Hydraulic Assessment

C-2506

Figure 3.2. Water-level versus time for monitor well C-2506
Exhaust Shaft Hydraulic Assessment

C-2507

Figure 3.3. Water-level versus time for monitor well C-2507
Several comments on OAR, not like "asking for a cure for cancer before shipment of waste." Lacks a talk like about water inflow in exhuast shaft.
Recent DOE report on buried TRU waste. Pre-'70s was low-intermediate level which was disposed compare to post '70 which is retrievably stored at 23 sites.

Chris wrote: Concern about perception w/shift from St Francis to unpar bypass
Discussion about civil disobedience

George Dids: Remaining steps - EPA cert, Secretary's decision, WIPP opens for non-mixed waste, then RCRA permit.
14 68 shipments INEEL - 1, LANL - 17, RFE-75, 1599 - 9 - 23 - 151
LANL has 5 repackaged shipments ready. No uncertainty about containing RCRA wastes.
INEEL Approved yesterday (4/29) for waste clear. George isn't happy about repackaging, but she have dropped due to vigorous process to identify & eliminate haz constituents.
Schedule - EPA cert/Sec decision - May 15, disposal operations June 15
New Org chart.
Paradigm shift to regulatory status.
Cooper Wegman - who represents state for CRC agreement?
(Governor or his representative) - Chair of Task Force, not EEG or NMAC.
1989 contract between EEG + DOE - original contract + 1yr offer 1993 extended thru 1999 (Bob says if began in 1978, will provide it to Cooper).

EEG authorized by LWA do several things (Section 17).

Disagree to meaning of "preliminary report." Lokesh said LWA does not limit EEG's authority, but to ensure DOE complies.

Also C+C, PL 100-456 address ("legal authorized" versus "limited") to review, evaluate, comment on environ, health or safety aspects of WIPP.

Both State x EEG can conduct evaluations, review, but under C+C only need to resolve State's comments.

No requirement to resolve EEG concerns, other than to consult & cooperate.

Bob said C+C states EEG represents State on commenting on SAR.

EEG had 13 comments on ORR; Cooper believes they have authority to comment, but no authority to recommend where concerns resolved.

Bob suggested Cooper also look at State law, contract.

---

Lokesh

CCA review (EEG 68) discussion of Dean Lake

Draft 97-2219 Exhaust Shaft Hydrology Report 97-2278 ES: Phase 2

All piezometers that P2-8 found water saturation in Dean Lake, avg sustainable pumping rate ~ 0.6 gpm.
Butch Stroud

Site Certification
6 audits since 7/1/97
LANC Cert 9/2
RIETS 3/26
INEEL 4/29

TRUtech & MCS - mobile vendors
NTS w/ Vendors 7/20 - 7/27
Mobile vendors approved, not certified.
Provide target dates for other sites.

K. Kent talked about certification. Lindsay asked
some questions. George shut him up.

Office of Waste Disposal Operations
Waste Characterized Certified to meet DOE, EPA, NMED require
plus NRC, LARA

User intention to notify NMED or demonstrate
lack of harm constituents. Ed Kelley apparently
said NMED can observe @ LANC for packaging.

K. George said it was a policy mistake to "volunteer"
to comply w/ RCRA

Mike Brown Helipack Certification

Discussion

Lakesh's concern about age of Panel 1, closure
of room 7 only half full

George distinguished between public health/safety
vs worker health & safety. Ground control system
inspected by mine inspectors. Extended discussion.

Lakesh believes breathing cloth insufficient for partially
filled rooms. George said they would only abandon a
room based on safety.