AGENDA

9:00  Introductions  Bill Mackie

9:10  DOE Task Force Update  DOE

9:30  EEG Task Force Update  Matthew Silva

9:50  NMED Task Force Update  Steve Zappe

10:10 Governor’s Task Force Update  Bill Mackie

10:30  Break

10:45  Transportation of Waste through Big-I construction  EEG/DOE

11:00  Exhaust Shaft Grouting Feasibility Study and WIPP’s plans for Mitigating Action  DOE

11:20  Status of Panel One  DOE

11:40  Status of Permit Modifications  DOE

12:00  Lunch

1:00  RH TRU Update  DOE

1:20  NAS WIPP Committee Report  DOE

1:40  DOE Outline of proposed Central Confirmation Plan (schedules, sites, organization, staffing Requirements & other resources)  DOE

2:00  Class 2 HWFP Modifications Update  DOE/NMED

2:30  Revision of CBFO Quality Assurance Program Underway (QAPD revision included)  DOE

3:00  Closing remarks and Adjourn
AGENDA

9:00  Introductions  Bill Mackie
9:10  DOE Task Force Update  Roger Nelson
9:30  EEG Task Force Update  Jim Channell
9:50  NMED Task Force Update  Steve Zappe
10:10 Governor’s Task Force Update  Bill Mackie
10:30 Break
10:45 Transportation of Waste through Big-1 construction  John VandeKraats
11:00 Exhaust Shaft Grouting Feasibility Study and WIPP’s plans for Mitigating Action  Jack Gilbert
11:20 Status of Panel One  Jack Gilbert
11:40 Status of Permit Modifications  Jody Plumb
12:00 Lunch
1:30 RH TRU Update  Chuan-Fu Wu
1:50 NAS WIPP Committee Report  Chuan-Fu Wu
2:30 Revision of CBFO Quality Assurance Program Underway (QAPD revision included)  Sam Vega
3:00 Closing remarks and Adjourn
### 74th WIPP Quarterly Action Items

<table>
<thead>
<tr>
<th>Action Item</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBFO to send to EEG the DNFSB 2000-2 implementation plan developed for DOE HQ. Additionally, when the Phase I Assessment is completed and forwarded, a copy will be shared with EEG</td>
<td>Implementation Plan was transmitted to EEG within one week of the meeting. Phase I Assessment will be transmitted when completed.</td>
</tr>
<tr>
<td>Transmit to EEG the new air dispersion joint stability classification table used in updating the WIPP SAR.</td>
<td>To be transmitted prior to 75th Quarterly Meeting by C. Zvonar</td>
</tr>
<tr>
<td>Send copy of the recent DNFSB letter to S-1 encouraging use of deterministic vs. probabilistic consequence assessments to Safety Analyses to EEG</td>
<td>Transmitted within one week of the 74th Quarterly Meeting.</td>
</tr>
<tr>
<td>Copy EEG and NMED when informing EPA of request to use confirmatory safeguards and security NDA data for approximately 4,000 drums</td>
<td>Request copied to EEG and NMED on April 27, 2001</td>
</tr>
<tr>
<td>When CBFO informs EPA of its request to allow supernovae neutrino prototype detector to be constructed and tested in former core storage alcove of the WIPP underground, EEG and NMED should be copied.</td>
<td>Request copied to EEG and NMED on April 27, 2001</td>
</tr>
</tbody>
</table>
WIPP 75th Quarterly

John

Rev 8 of WAC will incorporate Rev 7 of TRU
SARPs, will probably be out within a month.

Considering rail transportation for oversized waste
(Geminis container used in Europe, or TRU7C-III). Will
require permit mod to deal w/ storage, management, etc.

Rec'd CH TRU SAR (6/1) - reflect new rules of
10 CFR 830.

PEG

Handout. Perhaps we can discuss ability to review
their analysis of groundwater samples.

Discussed RH meetings (RSI-UNAEC). RSI comments
should be available today or tomorrow to DOE.

NMED

Task Force WIPPRAA in SF County Nov '01

See handout

John

Transportation than Big 3

VandeKraats

NTS Settlement agreement - disposes work by 9/02

Estimate first shipments ~ 2 to 3/02. Still some
dispute about route out of NTS to 1-40

Schedule will avoid routing onto surface streets
during construction

Jack Gilbert

Proposed parking of exhaust shafts - just received,
would like to date discussion to next quarterly.

Should have all of Room 7 filled by end of Aug.

Will skip rooms 6, 5, 4. Removed 1/3 of floor in
S1950 at room 3. Will use room 1 at next receipt accelerates.

Bypass rooms 6, 5, 4 - otherwise would require more remediation.

Expect to be in Panel 2 early '03
RH Waste: Chen Pajim
* Requested that panel review comments be distributed to Quarterly participants
* Also propose to have a workshop on transportation & facility safety issues for RH

NAS Recommendations
Susan McMichael did provide testimony to NAS panel on waste char requirement
* EEG wants list of regional, state, tribal government cooperative agreements

E. Kehlman: Mod 5

Being reviewed by CEPD - Scaled Success (Class 2) - alternatives to performing HSG sampling; DR/CT (Class 3) - have test data from RAVEL, 20 drums reflecting various waste forms prohibited items to be submitted as Class 3 in next couple of weeks; Chen requests deepened home waste as retrievably stored (Class 2); use of radiography for newly generated waste (Class 2);

Operational efficiencies - Electronic data report (Class 3): eliminate redundant data reviews, chart summary report, quarterly review, electronic verification/validation; Eliminate HSC Sampling (Class 3) - enhance underground monitoring (look in closed rooms); Eliminate Solids Sampling (Class 3) - artifact from NMUP, no basis in safety, only confirmation; Material Parameter Weights (Class 3) - waste stream basis, lump Cellulosic/Plastic/Other; RH, PCB (Class 2) - will send to EPA, expect to hear back early next year; provide EPA application to Quarterly participants.

Question about classified shapes - add to next Quarterly spend.
<table>
<thead>
<tr>
<th>NAME</th>
<th>ORGANIZATION</th>
<th>PHONE/E-MAIL</th>
</tr>
</thead>
<tbody>
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</tr>
</tbody>
</table>
WIPP Major Activities

- CH TRU Waste Disposal
- SQS Initiatives
- Optimizing the Transportation System
- WIPP Site Safety & Authorization Basis Activities
- Transportation Routes (VandeKraats), Underground Activities (Gilbert), Permit Modifications (Kehrman), RH Waste Program (Wu), NAS Recommendations (Wu), QAPD (Vega) – separate presentations
CH TRU Waste Disposal Operations
(8/6/01)

326 Shipments
Received to Date

9,215 containers
(140 drums temporarily stored on
surface, 87-44-9)

SQS Solutions
Small Quantity Sites

• 18 small TRU waste generator/storage sites located throughout the country

• Options
  – Waste characterization at large quantity sites (state equity issues, transportation, site commitments, etc.)
  – Waste charac. at SQSs
    • Facilities established/operated by individual sites (resources & schedule)
    • Mobile systems provided/operated by CBFO – Central Characterization Program
  – Central Confirmation Facility at WIPP

• CCP & CCF are environmentally & economically responsible solutions to closure/clean-up of SQSs

Central Characterization

• CBFO deploys mobile systems to perform waste charac. at the generator/storage site
  – System operation
  – Safety basis documents
  – Operational readiness

• SRS/Mound, ANL-E, NTS, LLNL ....
Central Confirmation Facility at WIPP

1. A change in geography, not in characterization or confirmation requirements
2. Waste must meet transportation requirements before shipment to WIPP
3. WIPP existing facility can be modified to perform confirmation activities

CH waste characterized for transportation and shipped to WIPP

Optimizing the Transportation System
Shippability of CH TRU Waste  
(Prior to TRUPACT-II SARP Rev. 19)

Non-Shippable due to Size limits 24%
Non-Shippable due to Gas Generation Limits 16%
Non-Shippable due to Weight limits 30%

Total inventory ~ 167,400 m³

CH TRU Waste Shippability per Rev. 19  
(approved 8/2/01)

Non-Shippable due to Size limits 24%
Non-Shippable due to Gas Generation Limits 1.8%

Shippable 74.2%

Total inventory ~ 167,400 m³
Path Forward for Remaining Gas Generation Issues

- Possible future initiatives
  - Inert the shipping package and/or waste containers to control flammability
  - Use hydrogen gas getter material
  - Bag breaching technology

Mode of Transportation

- Transportation by rail may address several issues
  - Ability to ship oversized waste
  - Reduce weather delays
  - Expand volume of shipments (can carry up to 28 TRUPACT-lls per delivery)
WIPP Site Operational Safety & AB Activities

Implementation of 10 CFR 830 and DNFSB Recommendation 2000-2

- Completed CH TRU SAR Rev. 5 (6/01) to incorporate new rules of 10 CFR 830, Nuclear Safety Management (2/01)

  - Phase I assessment of 8 VSSs (completed 5/01)
  - Phase II assessment of WHB HVAC and U/G ventilation system (scheduled for 11/01)
ISMS Implementation

- Declaration of implementation (7/00)
- Annual verification of ISMS effectiveness
  - M&O verification (8/01)
  - CBFO verification (9/01)
  - Verification assisted by QA Management Assessment Team, Safety Awareness Committee Members & safety professionals
  - Voluntary Protection Program (VPP) & Worker Protection Program (WPP) are assessed concurrently
LXXV 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

James K. Channell
Environmental Evaluation Group

August 7, 2001
Santa Fe, NM

MONITORING PROGRAM ACTIVITIES

• Observe EPA audit in June.

• Provide data (requested by EPA) to CTAC on South Side Skid (A-3 South).

• Participate in CEMRC Skid A-2 experiments planning meeting (July 18, 2001).

• Lab optimization workshop planning meeting, with DOE, CEMRC, SNL, WTS (July 17, 2001).
ANALYSIS OF ENVIRONMENTAL SAMPLES

• All CY2000 samples have been analyzed, report in preparation.

• NIST Radiochemistry Intercomparison Program air filter samples submitted.

• Analyses of Fixed Air Samples for the first quarter and the first round of groundwater samples for CY2001 are completed.

• Publication of preliminary data on EEG’s web site soon.

PLANNED RADIOCHEMISTRY LABORATORY ENHANCEMENT

• Enlarge space from 600 square feet to 770 square feet.

• Purchase liquid scintillation counter for analysis of Pu-241.

• Upgrade aging gamma-spectroscopy system.

• Install additional fume hood for low-emission processes.

• Completion in early FY2002.
AUDITS AND SERVEILLANCES ATTENDED

- DOE headquarters audit of CBFO, 4/30 - 5/3
- CBFO audit of WTS, QAPD Sections 1 and 2, 5/7-10
- CBFO audit of LANL newly generated waste, 5/14-17
- CBFO audit of RFETS NDA, 5/14-18
- CBFO recertification audit of Hanford, 6/11-15
- CBFO surveillance of CCP-SRS, 6/18-22
- EPA inspection of INEEL's shipment based on WAGS data, 7/2-3
- CBFO audit of INEEL, 7/30-8/3

MEETINGS ATTENDED

- Actinide solubility technical exchange (EEG organized), May 24, 2001.
- EPA/CBFO Working Meeting, Carlsbad, NM, July 24-25, 2001
COMMENTS PROVIDED

- HWFP Class 2 Modifications
  - Miscellaneous Items, April 27, 2001
  - Ten Drum Overpack, June 22, 2001
  - Drum Age Criteria, June 29, 2001

- Transportation through the Big-I, June 11, 2001

- To CBFO on RH-TRU waste handling, June 7, 2001

- To EPA on four RFETS NDA systems, May 8, 2001
WIPP Quarterly Review
August 7, 2001

Activities Update for NMED's
RCRA Permits Program

1. Ongoing Permitting Process

- NMED received additional permit modification notifications from DOE/WTS
  - May 29, 2001 - Class 1 (audit checklist revision)
  - July 2, 2001 - Class 1 (general editorial changes and corrections)

- Digital Radiography/Computed Tomography (DR/CT) Class 2 modification request
  - NMED received request on January 24, 2001
  - Withdrawn by Permittees on April 23, 2001

- General Class 2 modification request
  - Addressed 5 changes (inspection forms; training requirements for firefighters and RCTs; new EPA haz waste codes; extend deadline for groundwater analytical reporting)
  - Final determination (approval with and without changes) issued July 6, 2001 after 30-day extension for decision
  - Response to comments and revision to permit still pending

- Drum Age Criteria (DAC)/ Ten Drum Overpack (TDOP) Storage Volume Class 2 modification request
  - NMED received request on May 2, 2001
  - Public meetings held in Carlsbad (June 5) and Albuquerque (June 7)
  - Public comment period ended on July 6, 2001
  - NMED received 91 pages of comments from 10 commentors
  - Final determination expected by August 30, 2001 (includes 30-day extension for decision)

- Centralized Waste Confirmation Facility Class 3 modification request
  - NMED received request on June 6, 2001
  - Public meetings held in Carlsbad (July 17), Albuquerque (July 18), and Santa Fe (July 19)
  - Public comment period extended until September 27, 2001
  - NMED will likely issue notice of deficiency within 30 to 45 days, depending upon nature and extent of public comments received
2. RCRA-related Audits

- INEEL Homogenous Solids, December 5 - 7, 2000 and January 18, 2001
  - Approvable audit report received April 26, 2001
  - Audit report approved May 18, 2001 for homogeneous solid waste

- RFETS Recertification and Homogeneous Followup, January 29 - February 1, 2001
  - Still awaiting audit report pending resolution of CARs

- LANL Packaging, May 14 - 18, 2001
  - Awaiting audit report

- Hanford Recertification, June 11 - 15, 2001
  - Received audit report for visual examination technique at PFP on July 16, 2001
  - Awaiting audit report for recertification

- Central Characterization Project (CCP) Surveillance at SRS, June 18 - 22, 2001
  - Conducted simultaneously in Carlsbad and Savannah River Site
  - Numerous CARs, related to immature program
  - NMED expressed concerns regarding implementation under current permit, particularly regarding ownership of waste characterization activities

- INEEL Recertification, July 30 - August 3, 2001
  - Conducted last week, awaiting report

- Other tentatively scheduled audits
  - CCP @ SRS, September 24 - 28, 2001
  - SRS Recertification, October 8 - 12, 2001
  - LANL Recertification, October 22 - 26, 2001
  - CCP @ ANL-E, November 5 - 9, 2001
  - RFETS New Equipment and Processes, November 26 - 30, 2001
  - CCP @ NTS, December 10 - 14, 2001
3. Compliance issues

- **Fluorescent light ballast disposal from RFETS**
  - NMED requested additional information March 22, 2001
  - Permittees responded April 26, 2001 with information documenting that RFETS had a program in place to segregate PCB items at the time of waste generation
  - No further action necessary

- **Manifest discrepancy**
  - NMED notified by DOE/WTS on April 13, 2001
  - Wrong drum shipped from INEEL, disposed of March 29, 2001
  - NMED will issue a notice of violation in August

- **WAGS waste from INEEL stored at WIPP**
  - EPA ordered WIPP to suspend disposal of WAGS-assayed waste stored in the WHB Unit
  - Waste currently occupies five of the seven pallets in NE Storage Area
  - Permittees requested 90-day storage extension and ability to store waste on pallets at TRUDOCK area on July 18, 2001
  - NMED issued a notice of anticipated non-compliance on July 27, 2001, citing "off-normal event" language of Permit Attachment M1
  - Permittees withdrew extension request on August 2, 2001, stating intent to return waste to INEEL if EPA does not provide a "positive response" before storage time limit is reached
  - EPA has received a request to extend the comment period on their determination, increasing the likelihood that storage time limits might be reached

4. Other activities

- NMED staff participating in monthly meetings of the Northern New Mexico Citizen Advisory Board Waste Management committee
- James Bearzi presented NMED's position on RH waste prohibition in the permit to the RH Panel Workshop in Carlsbad July 30, 2001
75th WIPP Quarterly Review
Presented by
Radioactive Waste Consultation Task Force
Energy, Minerals and Natural Resources Department
Santa Fe, New Mexico

August 7, 2001

Task Force Activities

- WIPP Working Group Meetings conducted monthly
- Performance Variances
  - Continued monthly meetings between NM and CBFO to discuss Transportation Issues
  - WIPPTAX Scheduled for Cibola County on Saturday, August 18, 2001
  - Early planning for WIPPTAX in Santa Fe County for November 2001
- Participation
  - Radioactive Waste Consultation Task Force meeting in Santa Fe
  - Public Information Meetings on Class 3 Permit Modifications
  - Transportation planning meeting with Wyoming and Colorado
  - Participated in Santa Fe High School Earth Day festivities
  - Made presentation to Environment Department Field Operations personnel on existing status and program initiatives of the Task Force as related to the WIPP Transportation Program
  - Attended WGA Spring Conference in San Diego, CA (DOH represented State)
  - Attended CCNS press conference as representative of State where discussions included WIPP EMS Medical Preparation

WIPP Transportation Safety Program

- Training
  - Responded to inquiries from Environmental Groups, media and general public (RWCTF, DPS and DOH)
  - Provided advance notice, TRANSCOM monitoring and enroute Level VI-CVSA inspections for 90 shipments during the quarter. Provided pre-trip inspections on 5 shipments originating from LANL and post-trip inspections on shipments from INEEL, LANL and Hanford (DPS-MTD)
  - Conducted WIPP/HAZMAT Awareness training for: Laguna Pueblo (3), Bluewater VFD, Gallup FD and Grants FD (DPS, SFMO, DOH)
- Participated in WIPPTRAX planning sessions for upcoming WIPPTRAX exercise
- Provided outreach presentations to Dona Ana County LEPC, EM Region III meeting in Las Vegas, NM, and Eight Northern Pueblos Workshop (DPS)
- MTD coordinator conducted two In-service training sessions containing updates to CVSA Level 1 and CVSA HazMat regulations/procedures. Also conducted basic hazardous materials transportation training to drivers of Tri-state Motor Transport after which drivers worked with MTD District personnel to get practical inspector experience to become certified WIPP drivers.
- MTD conducted DOE MERRTT to MTD employees on the I-40 corridor
- DOH presented EMS Operations Course in Grants for different agencies of Cibola County
- Provided hospital response training to St. Vincent’s Hospital in Santa Fe, Gerald Champion General Hospital in Alamogordo, Las Alamos Hospital
- NMSP officers have attended First Responder Operations Train the Trainer courses, qualified as Emergency Response Officers and completed CAMEO training and Incident Command training during the quarter

- Monitoring Items

- Environment Department successfully tested newly acquired Raton Port of Entry monitoring station at contractor’s yard (MCT Industries) in Bernalillo
- Environment Department awaiting NMSHTD approval of engineering drawings for location of system anchor supports at Raton
- Environment Department has monitored Level VI MTD Inspectors during the quarter with no discrepancies being noted.

- Status Assessment and Forecasts

- DPS is placing emphasis on public outreach, equipping and training of first responders along I-40 West of Albuquerque
- DPS continues to enforce, resolve or refine the WGA WIPP shipping protocols.
- Negotiations are completed and agreements have been signed to establish safe parking areas at National Guard Armories at Grants and Gallup
- DOH has Hospital courses scheduled for Carlsbad, Las Vegas, Artesia, and Alamogordo during the next quarter
- Ludlum counter exchange/recalibration to be conducted during next quarter (DOH, NMED)
- DOH and SFMO continues evaluating EMT Basic Curricula to determine HAZMAT and WIPP Medical Preparedness content

- Unresolved Problems

- Ongoing TRANSCOM related problems still exist
- Resolution to Weather/Highway status conference calls, Safe Parking protocols and interface between CMR and NMSP District 1 needed
Transportation of TRU Waste Through the “Big I”

John VandeKraats
DOE/CBFO Logistics

Background

- NTS Settlement Agreement
  - Dispose 215 m³ by September 2002
- FY02 Program Budget/Planning Focus
  - Mobile Modular Approach
  - Corridor Training/Opening
Planning and Scheduling

- 33 Shipments Before Settlement Deadline
- 1st shipment Feb-Mar. 2002
  - Certification Audit December 2001
  - Estimated 60-90 day Approval Process
- Ramp-up to Efficiently Campaign

Routing

Transiting the “Big I”

- Interstate Routes are Designated by States
  - For Safety
  - For Response Capability
  - For Expedious Transportation
- Current Construction
  - Lowered Speeds - Safer
  - Routing Will Stay on Interstate
  - Affects About 1 mile of Route
  - EEG Analysis Recognizes Minimal Risk
Considerations/Alternatives

- To-date Experience in Construction Zones
- Alternate Routing
  - Two Lane Highway Routes Around ABQ
  - Surface Streets/Routing in ABQ
- Delay Shipping Until After Construction
  - Program Inefficiencies/Waste Would Result
  - Potential State (NV) Compliance Actions
- Controlling Time of Day
- Use of Chase/Escort Vehicles

Current Recommended Actions

- Commence Shipping When NTS is Certified
- Use State Designated Route
- Schedule Shipments to Transit During Low Traffic Periods
- Coordinate With State
  - Time of Day Scheduling
  - Chase/Escort Vehicles if Provided
SHIPMENTS OF TRANSURANIC WASTES TO WIPP THROUGH ROAD CONSTRUCTION IN ALBUQUERQUE

by

James K. Channel

June 11, 2001

Over 225 shipments of transuranic wastes have been received at the WIPP Site since March 1999. These have come from Rocky Flats Environmental Technology Site in Colorado, the Idaho National Engineering Laboratory, Los Alamos National Laboratory, the Hanford Site in Washington, and the Savannah River Site (SRS) in South Carolina. All of the out of state shipments to date have entered New Mexico on Interstate 25 at Raton except for one SRS shipment that entered from Texas on US 285. Current plans are for shipments from the Nevada test Site (NTS) to begin in November 2001. The NTS shipments would travel on Interstate 40 from the Arizona border to Clines Corner and thence on US 285 to Carlsbad.

Concern has been raised about NTS shipments through Albuquerque prior to completion of the major intersection construction at the “Big I”. A May 30, 2001 article in the Albuquerque Journal stated that “EEG is not worried about the construction creating hazards for WIPP trucks...”. It is useful to give the reasons why we have come to this conclusion.

1. All shipments will be in the TRUPACT-II shipping package. The TRUPACT-II is a Type B package designed, extensively tested, and certified by the Nuclear Regulatory Commission (NRC) after EEG strongly recommended (in May 1986) that all shipments to WIPP be in NRC certified packages. The requirement for NRC certification was supported in 1987 by letters from the New Mexico Congressional delegation (3/87) and Governor Garrey Carruthers (4/87) and was subsequently incorporated into the Second Modification to the Consultation and Cooperation Agreement between the State of New Mexico and DOE (8/87) and in the 1992 WIPP Land Withdrawal Act (102 P.L. 579).

An NRC certified package that conforms to the certificate of compliance requirements is considered by the NRC and by the U.S. Department of Transportation (DOT) to be safe for use on designated routes in normal interstate commerce without any additional requirements. Some states have required extra conditions, such as escorts and prior notification on certain types of radioactive material shipments but these additional precautions are not a requirement of certification.

2. Many of the shipments to WIPP have been along routes in New Mexico where road construction was underway (e.g. US 285 between Clines Corners and Carlsbad and the Santa Fe by-pass).

3. DOE has a number of procedures in place to ensure that all WIPP shipments comply with NRC and DOT requirements. We have no reason to believe that these procedures are not being strictly followed. States along the route also provide safety checks.
EEG does not know whether commercial truck accident rates are higher in construction zones.

EEG wrote a report in 1990 (Risk Analysis of the Transport of Contact Handled Transuranic (CH-TRU) wastes to WIPP Along Selected Highway Routes in New Mexico Using RADTRAN IV, EEG-46) where we used highway accident rates and the numbers of shipments projected at that time to estimate the number and severity of accidents involving TRUPACT-II shipments to WIPP. The following findings are relevant:

a. Over 99% of the expected radiation dose due to transportation occurs from incident free transport and less than 1% from accidents;

b. For 20,900 shipments throughout New Mexico we estimated there would be about 5 accidents and only one would involve releases. The release is likely to be less than 0.000001 (1 part in a million) of the radioactive material in the shipment;

c. The probability of an accident occurring to a single shipment on I-40 between Coors Blvd. and San Mateo Blvd. is about 0.00000563 (1 in 175,000) and (because this is in an urban area where speeds are less) there is only a 3.3% probability this will be a release accident (1 in 5.4 million).

Because the probability of an accident for a shipment is so low we believe that the procedures already in place and those that may be applied to specific circumstances by the Highway Department are adequate.
Jack Gilbert
Waste disposal Operations Team Leader
75th Quarterly Meeting
August 7, 2001
PROPOSED GROUTING PROGRAM FOR THE TOP UPPER 80 FEET OF THE EXHAUST SHAFT
PANEL ONE UTILIZATION
Panel 1 Utilization

Waste Rate: VandeKraats July 13, 2001

August 2001 update

Panel 1 Fill Complete 08/23/01

Room 7 Fill Complete 08/23/01

Room Closure

Proposed Room Closure

CAM Location

Proposed Final CAM Location

Panel 1 Fill Complete 09/23/02

Room 7

Room 6

Chain Link Barrier

Room 5

Room 4

Room 3

Room 2

Room 1
Room Renovation

- S-1950 Floor Renovation and ground control complete
- Presently mining floor in Room 3
- Plan to renovate Rooms 3 and 2 together
- Renovate Room 1 at a later date as needed per waste receipt rate
FILL SCHEDULE

- Complete utilization of Room 7
- Fill S-1950 portion of Rooms 6, 5 and 4
- Complete utilization of Room 3, 2, and 1
Carlsbad Field Office Vision

As it should be: A National TRU waste system operating safely in compliance with applicable regulations and agreements, cost-effectively and at full capacity in a fully integrated mode.

As it is:

- CBFO is responsible for disposal of the nation’s TRU waste
  - WIPP waste volume - 6.2 million cubic feet
  - RH-TRU approximately 4% of total

- Over two years into operations, WIPP throughput goals are not being met

- Inefficiencies and solutions identified by CBFO
  - National Research Council findings
Carlsbad Field Office Vision

As it should be:

Desired end state: A National TRU waste system operating safely in compliance with applicable regulations and agreements, cost-effectively and at full capacity in a fully integrated mode.

- 17 shipments per week of CH TRU waste will result in timely disposal of all DOE CH TRU
- In order to cleanup all DOE facilities, RH TRU waste must be disposed in the same time frame
- End state can only be realized by establishing cost-effective and efficient operations for both CH TRU and RH TRU waste
  - National Research Council recommendations apply to both

Performance-Driven Approach

- CH TRU waste characterization program is process oriented and is not optimized
- RH TRU waste characterization program is driven by repository performance
  - Only information necessary for safe operations or compliance will be obtained
  - Only activities necessary to obtain that information will be performed
  - These, when combined, can lead to optimization
Regulatory Authorities

• WIPP operations are regulated by the NMED and the EPA

• Documentation for review includes:
  – Draft request for RCRA Class 3 Permit Modification
  – Draft Notification of Proposed Change to the EPA 40 CFR 194 Certification

The RH TRU Waste Characterization Program

• Characterization objectives established

• Characterization processes established
  -- Acceptable knowledge
  -- Non-destructive assay
  -- Non-destructive examination

• Quality assurance processes established
  -- 40 CFR 194.22(b) old data qualification
  -- Confirmation activities for RCRA
RH-TRU Review Criteria

- CBFO believes its proposed RH TRU Waste Program appropriately answers the questions
  - Meets regulatory requirements
  - Is performance-based
    - Establishes appropriate characterization objectives
    - Proposes acceptable knowledge as primary characterization process
  - Follows NRC/NAS recommendations

Small Volume, Small Impact
Large Cleanup Results

- There is a relatively small volume of RH TRU waste to be disposed of at WIPP. How we manage it affects cleanup of the national TRU waste complex and leads the way for other important environmental cleanup activities
**RH TRU Waste Program – Peer Reviews**

- **Institute for Regulatory Science (RSI)**
  - Review Panel consists of 7 experts
  - Peer review and workshop (7/30 – 8/3/01)
    - ASME/RSI peer review procedures followed
    - Presentations by external experts, regulators and project participants
    - Comments from stakeholders (Personally Impacted, Administratively Impacted, Generally Concerned)
  - Panel review comments available around 8/8/01
  - *Report of the Review Panel* available in a few months

- **National Research Council’s Committee on WIPP**
  - First meeting on RH (8/1 – 8/3/01)
  - Next meeting (9/12 – 9/14/01)
The National Research Council's new Committee on WIPP

The National Research Council's new Committee on WIPP has been selected and approved by the Board on Radioactive Waste Management of the Council in July 2001. The chair of the new committee has not been named, but it is likely to be Professor Ken Mossman (ASU Health Physics Professor and past President of the HPS - he would make an outstanding chair!). Whoever is chair, the new committee will be made up of the following experts (in alphabetical order):

Eula Bingham (IOM) is a professor of environmental health at the University of Cincinnati. Dr. Bingham's interests include risk assessment, regulatory toxicology, environmental carcinogenesis, and occupational health surveillance. She was a volunteer investigator at the National Institute of Environmental Health Sciences and the Assistant Secretary of Labor, Occupational Safety and Health Administration. She was the first recipient of the William Lloyd award for occupational safety. Throughout her career, Dr. Bingham has served on numerous national and international advisory groups including advisory committees of the National Research Council, Food and Drug Administration, Department of Labor, National Institute for Occupational Safety and Health, National Institute of Health, Natural Resources Defense Council, and the International Agency for Research on Cancer. These committees addressed issues concerning research needs in health risk assessment, and the potential health effects of environmental exposure to chemicals. In 1989, Dr. Bingham was elected to the Institute of Medicine. She earned her M.S. in physiology and her Ph.D. in zoology from the University of Cincinnati.

Sanford Cohen is the founder and president of SC&A, Inc., an energy and environmental consulting firm providing expertise in radiation sciences, management, health and safety analyses, communications services, and information management. He has managed several contracts for agencies of the U.S. Government, including the Environmental Protection Agency, the Centers for Disease Control, the Council on Environmental Quality, the Congressional Office of Technology Assessment, the Department of Energy, and the Nuclear Regulatory Commission. Dr. Cohen is involved in regulatory guidance pertaining to environmental management (including RCRA/CERCLA requirements), the remediation of contaminated sites, safe disposal of hazardous wastes, site characterization in support of decontamination and decommissioning projects, recycling of scrap metal from nuclear facilities, electric and magnetic fields effects, and indoor air quality. Prior to founding SC&A in 1981, Dr. Cohen was the vice president and manager of Teknekon, Inc. Washington Operations and president of Teknekon Research, Inc., a consulting group working with the governmental agencies above. Dr. Cohen earned his B.S. in Science Engineering at Northwestern University and his Ph.D. in Nuclear Engineering at the University of Michigan.

Milton Levenson (NAE) is an independent consultant. Mr. Levenson is a chemical engineer with more than 50 years of experience in nuclear energy and related fields. His technical experience includes work in technologies related to nuclear safety, fuel cycle, water reactors, advanced reactors, and remote control. His professional experience includes research and operations positions at the Oak Ridge National Laboratory, the Argonne National Laboratory, the Electric Power Research Institute, and Bechtel. Mr. Levenson is a fellow and past president of the American Nuclear Society; a fellow of the American Institute of Chemical Engineers; and recipient of the American Institute of Chemical Engineers'
Robert E. Wilson Award. He is the author of more than 150 publications and presentations and holds three U.S. patents. Mr. Levenson served as chairman and/or committee member in several NRC studies, including the most recent study on the WIPP. He was elected to the National Academy of Engineering in 1976. He received his B.Ch.E. from the University of Minnesota.

Kenneth Mossman is professor of health physics and director of the Office of Radiation Safety at Arizona State University (ASU) in Tempe, where he also served as assistant vice president for research. Prior to his arrival at ASU, Dr. Mossman was a faculty member of the Medical School and Dental School at Georgetown University in Washington, D.C. and was professor and founding chairman of the Department of Radiation Science in Georgetown’s Graduate School. Dr. Mossman’s research interests include the biological effects of low level radiation, radiation exposure in pregnancy, health effects of environmental radon, radiation protection, and public policy. Dr. Mossman has over 110 publications, including six books and proceedings related to radiation health issues. He has presented testimony before the U.S. House of Representatives and the U.S. Senate. In 1984, Dr. Mossman was awarded the prestigious Elda Anderson Award from the Health Physics Society (HPS), in 1995 he received the HPS Marie Curie Gold Medal, and from 1996 to 1998 he served as a Sigma Xi Distinguished Lecturer. Dr. Mossman was elected fellow of the HPS in 1994 in recognition of outstanding contributions to the field of health physics; he also served as president of HPS. Dr. Mossman earned a B.S. in biology from Wayne State University, M.S. and Ph.D. degrees from the University of Tennessee in radiation biology, and M.Ed. degree in higher education administration from the University of Maryland.

Ernest Nieschmidt is the director of the Laser Laboratory and adjunct associate professor of physics at the Idaho State University, College of Engineering. His research interests span from the development of a neutron activation analysis facility, to sonoluminescence, and the destruction of hazardous organic components of mixed waste by free-radical chemistry. He is also involved in the development of the Laser Isotope Separation Laboratory to pursue research in separation of isotopes utilizing selective excited states induced by laser. For most of his career, Mr. Nieschmidt worked for different contractors at the Idaho National Engineering and Environmental Laboratory on techniques to assay radioactive and transuranic waste material. These included passive and active neutron interrogation, analysis of active gamma rays and gamma rays produced by neutron inelastic scattering, neutron capture, chronomaging, time correlation, and the application of position-sensitive detectors. He authored 106 publications related to topics in physical sciences. Mr. Nieschmidt earned his M.S. in Physics at the San Diego State College.

Heino Nitsche is a professor in the Department of Chemistry at the University of California-Berkeley. His research interests focus on two main topics: (1) basic and applied research on the environmental behavior of non-radioactive and radioactive metal ions, with emphasis on actinides, and (2) the production, chemistry and nuclear properties of the heaviest elements. His environmental research spans analytical chemistry, solution thermodynamics and kinetics, and solution/solid interfacial reactions. He also studies the chemical properties of the heaviest elements to establish the architecture of the newest sections of the periodic table. Since 1998, he is the director of the Glenn T. Seaborg Center, part of the Lawrence Berkeley National Laboratory. Prior to his arrival at Berkeley, he was a professor of radiochemistry at the Technische Universitaet and director of the Institute of Radiochemistry
in Dresden, Germany. Dr. Nitsche is a former member of the NRC Committee on Nuclear and Radiochemistry. Dr. Nitsche earned his M. Sc. and Ph.D. in chemistry at the Freie Universitaet of Berlin, Germany.

John Plodinec is the director of the Diagnostic Instrumentation and Analysis Laboratory at Mississippi State University. His laboratory is specialized in developing instrumentation for unusual environments, and in characterizing processes and technologies under "real-world" conditions. Dr. Plodinec is an internationally recognized expert in waste management and glass science. He has made important contributions in several areas in radioactive waste management, ranging from waste characterization to glass durability modeling. Prior to joining the Mississippi State University, he worked for 22 years at DOE's Savannah River Site where he collaborated in building and operating the first remote in-cell melter and served as primary technical lead for the product qualification program. In this capacity, he oversaw the remote-handled transuranic waste streams produced by the Savannah River Site. He has authored over 90 publications, primarily on waste vitrification and thermodynamics of waste management. He holds a patent on a device to sample high-level waste and on a slurry-feeding device for glass melters. Dr. Plodinec earned his Ph.D. in Physical Chemistry from the University of Florida.

Anne E. Smith is a vice president of Charles River Associates (CRA), an economics consulting firm. Dr. Smith is an expert in risk management, cost-benefit analysis, economic modeling, and integrated assessment of complex environmental and energy issues. Issues that she has analyzed include contaminated sites, global climate change, air quality, and emissions trading. Dr. Smith has developed and reviewed decision support tools for risk-based ranking of contaminated sites and for making risk trade-offs in selecting remediation alternatives. She has submitted formal comments on the development of EPA's Hazard Ranking System for identifying Superfund sites, has served on committees of the National Research Council on assessing contaminated site risk management activities, was a project leader in a review for the U.S. Congress of Superfund and RCRA concerns within the U.S. nuclear weapons facilities, and her testimony has been sought by committees of the U.S. Senate on air quality issues. Dr. Smith has a Ph.D. in economics from Stanford University, with a Ph.D. minor in engineering-economic systems. Prior to joining CRA, Dr. Smith was a vice president of Decision Focus Incorporated. She has also served as an economist in the Office of Policy Planning and Evaluation of the U.S. Environmental Protection Agency.
The Committee makes 14 recommendations in 3 major categories (DOE disagrees with 3):

- WIPP Performance \((4)(1)\)
- Site Characterization \((4)(1)\)
- The National TRU Program
  - Characterization (2)
  - Transportation \((4)(1)\)

\(\#\) # of recommendations DOE CBFO disagrees with
## 1. Brine migration monitoring
- **NAS Recommendation:** Monitoring (35-100 years) to gain information on brine migration and moisture access to the repository (both open and closed panels).
- **Proposed DOE Response:** Moisture increase in sealed room will be very small in first 50-100 years. Sample air for humidity increase using manifold system.

## 2. Gas generation monitoring
- **NAS:** Monitoring (35-100 years) of gas generation rates (production of hydrogen, carbon dioxide and methane) behind a closed panel seal.
- **DOE:** Install a manifold and dedicated sampling line system (can be permanently sealed when sampling terminates) to periodically draw air from a sealed disposal room for analysis. This manifold sampling system will be used for measurements of other parameters as well.

## 3. Magnesium oxide (MgO) efficacy study
- **NAS:** Reevaluate the net benefit of MgO used as backfill and consider the option to discontinue emplacement of MgO.
- **DOE:** DOE will continue its evaluation of MgO, and should the case be sound, propose to EPA the elimination of MgO backfill.

## 4. Deformation of rock and interaction of site with TRU waste containers
- **NAS:** Pre-closure monitoring of room deformation and of the disturbed rock zone (DRZ) healing. Seal performance should also be assessed.
- **DOE:** A reliable decades-long measurement of room deformation behind a sealed panel will be difficult. The same long-term measurement of the properties of the DRZ will be near impossible. (DOE disagrees with this recommendation)
4. Gas generation safety analysis for TRUPACT-II

- NAS: Conduct risk-informed analysis of shipment issues to identify core hydrogen generation issues and provide basis for alternative cost-effective criteria while reducing risk (e.g., H₂<5% limit).
- DOE: TRUPACT-II SARP Rev. 19 has been approved (8/2/01). Analysis is underway for Hydrogen getters, ILC breaching, Oxygen getters (not consistent w/ regulatory position), and demonstration of no consequence (deflagration calcs. and tests to show no safety impact w/ Arrow-Pak). Need for a better understanding of fundamental science associated with gas generation in general has been submitted to the EM Science Program (funding FY03).

Path Forward

- WIPP Corporate Board to approve DOE/CBFO responses
- CBFO to develop and provide formal response package to NAS
- The Council’s former Committee on WIPP (15 members) has been dissolved
- A new 8-member Committee on WIPP was formed in July 2001 (see brief information on members)
- DOE meetings with Committee (to discuss the proposed RH Program)
  - Aug. 1-3, BCL, Ohio
  - Sep. 12-14, Carlsbad, New Mexico
Waste Isolation Pilot Plant
Carlsbad Field Office

Modification Status
Submitted to CBFO

- Sealed sources--Class 2
- DR/CT--Class 3
- Characterizing repackaged homogenous solids as retrievably stored--Class 2
- Use of radiography for newly generated waste--Class 2
Undergoing NMED Review

- **Storage capacity increase for ten drum overpacks--Class 2**
  - Public meetings have been held
  - Comment period is closed
  - Final decision by NMED is anticipated by August 30, 2001

- **Drum age criteria (DAC)--Class 2**
  - Public meetings have been held
  - Comment period closed
  - Final decision by NMED is anticipated by August 30, 2001

- **Consolidation of container descriptions--Class 2**
  - Public meetings have been held
  - Comment period closed
  - Final decision by NMED is anticipated by August 30, 2001

- **Centralized confirmation facility--Class 3**
  - Public meetings have been held
  - Public comment period has been extended by 45 days and will close on September 27, 2001
  - Possible EPA Rulemaking required
Approved by NMED on July 6, 2001

- Addition of 25 new hazardous waste numbers
- Removal of several procedures from the permit
- Revised several training programs
- Extension of time for groundwater data reporting
Pending Actions

- Electronic Data Management--Class 3
- Reduced Headspace Gas Sampling--Class 3
- Elimination of Solids Sampling--Class 3
- Material Parameter Weights--Class 3
- Remote Handled Waste--Class 3
- PCB--Class 2