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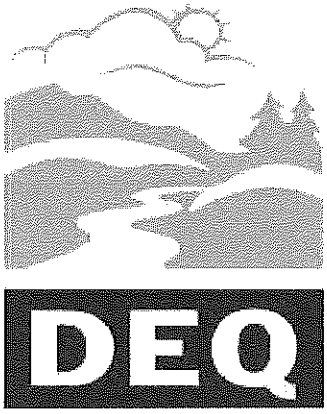
OREGON
ENVIRONMENTAL QUALITY
COMMISSION MEETING
MATERIALS 08/18/1999



State of Oregon
Department of Environmental Quality

A G E N D A

ENVIRONMENTAL QUALITY COMMISSION MEETING

August 18, 1999

DEQ Conference Room 3A
811 S. W. Sixth Avenue
Portland, Oregon

Note: Because of the uncertain length of time needed for each agenda item, the Commission may deal with any item at any time in the meeting. If a specific time is indicated for an agenda item, an effort will be made to consider that item as close to that time as possible. However, scheduled times may be modified if agreeable with participants. Anyone wishing to listen to the discussion on any item should arrive at the beginning of the meeting to avoid missing the item of interest.

Beginning at 10:00 a.m.
Work Session

10:00 - 11:30 a.m. **Informational Item**: New Technology to Replace the Dunnage Incinerator at the Umatilla Chemical Agent Disposal Facility

12:30 – 3:00 p.m. **Informational Item**: Presentation on Carbon Filters

Hearings have already been held on the Rule Adoption items and the public comment period has closed. In accordance with ORS 183.335(13), no comments can be presented by any party to either the Commission or the Department on these items at any time during this meeting.

The Commission will have lunch at 11:30 a.m. . No Commission business will be discussed.

The Commission has set aside September 30-October 1, 1999, for their next meeting. The location will be in Coos Bay, Oregon.

Copies of staff reports for individual agenda items are available by contacting the Director's Office of the Department of Environmental Quality, 811 S. W. Sixth Avenue, Portland, Oregon 97204, telephone 229-5301, or toll-free 1-800-452-4011. Please specify the agenda item letter when requesting.

If special physical, language or other accommodations are needed for this meeting, please advise the Director's Office, (503) 229-5301 (voice)/(503) 229-6993 (TTY) as soon as possible but at least 48 hours in advance of the meeting.

April 10, 2000

EQC Agenda

Environmental Quality Commission
Special Meeting

Umatilla Chemical Agent Disposal Facility

August 18, 1999
10:00 a.m. to 3:00 PM
MEETING ROOM 3A
DEQ Headquarters
811 S.W. Sixth
Portland, OR 97206

Time	Agenda topics	Presenter
10:00 a.m.	Introduction	DEQ
10:10 a.m.	Dunnage Incinerator	U.S. Army Program Manager for Chemical Demilitarization
11:00 a.m.	Question and Answer Session	EQC
11:30 a.m.	**Lunch break**	
12:30 p.m.	Introduction	DEQ
12:35 p.m.	Application of Carbon Filter Technology to Stack Emissions	National Research Council
12:55 p.m.	Current Design of Carbon Filter System at UMCDF	U.S. Army and Raytheon Demilitarization Company
1:15 p.m.	Carbon Filter Technology	G.A.S.P., et al.
2:15 p.m.	Question and Answer Session	EQC and all Presenters
2:45 p.m.	Summary Discussion	EQC/DEQ
3:00 p.m.	Adjourn	

Oregon Department of Environmental Quality

A CHANCE TO COMMENT ON...

INVITATION TO COMMENT ON CARBON FILTRATION TECHNOLOGY AT THE UMATILLA CHEMICAL AGENT DISPOSAL FACILITY (UMCDF)	**Public Notice Date: July 19, 1999** **Written Comments Due: Sept. 20, 1999**

UMATILLA CHEMICAL AGENT DISPOSAL FACILITY (UMCDF)
UMATILLA CHEMICAL DEPOT
HERMISTON, OREGON
ORQ 000 009 431

For what facility?

This Invitation to Comment is related to the **Umatilla Chemical Agent Disposal Facility (UMCDF)** under construction at the U.S. Army Umatilla Chemical Depot near Hermiston, Oregon. The UMCDF is an incineration facility that will be used to destroy the stockpile of chemical warfare agents that are stored at the Depot.

In February 1997, the Environmental Quality Commission (EQC) and the Department of Environmental Quality (DEQ) approved an Air Contaminant Discharge Permit (Air Permit) and a Hazardous Waste Storage and Treatment Permit (HW Permit) for UMCDF.

What do the carbon filters do?

The design of UMCDF includes a carbon filtering system for final treatment of exhaust gases before they are released to the atmosphere through a stack. Each of the furnace systems at UMCDF has a standard Pollution Abatement System (PAS) to ensure that air emissions meet Oregon's environmental standards. (UMCDF uses five incinerators of four different types (housed in a single building) to treat the various components of the chemical weapons stockpile at the Umatilla Depot.) The gases exiting the standard PAS are conditioned to remove moisture and then channeled through carbon filter beds before being released from a stack.

The air emissions from the UMCDF furnaces must meet all of the emission standards required by the state Air and HW Permits **before** the gases pass through the carbon filter system. The Environmental Quality Commission required inclusion of the carbon filter systems at UMCDF to provide an additional measure of safety.

Why does the EQC want comments on carbon filters?

The Army has re-designed the carbon filter system since the time of the original permit decision in February 1997 (the Department approved the design modifications in November 1998). Although the permit modification process incorporated two public comment periods, there have been concerns raised by some members of the public that the carbon filtration system proposed for use at UMCDF is "unproven." The EQC wishes to collect additional information regarding the use of carbon filters to clean exhaust gases from hazardous waste incinerators.

What additional information does the EQC want to collect?

The EQC is interested in any information that the public could provide regarding the application of carbon filtration technology to a combustion facility. For example:

- Effectiveness of carbon filters in emission reduction, including emissions of dioxins, furans, and metals;
- Operational complexity of a carbon filter system;

	❖ Safety of carbon filter systems, including the risk and consequences of catastrophic failures, and safety features available to preclude such failures; ❖ Waste generation from carbon filter systems, including the treatment and disposal of spent carbon; and ❖ Other issues of concern to the public about the use of carbon filters at UMCDF.
Where can I find more information?	The Air and HW Permits, and other information related to UMCDF, can be found at the following information repositories: DEQ--Hermiston Office 256 E. Hurlburt, Suite 105 Hermiston, OR 97838 (541) 567-8297 or 1-800-452-4011 Pendleton Public Library 502 S.W. Dorion Avenue, Pendleton, OR 97801 (541) 966-0210 Portland State University Library 951 SW Hall, Fifth Floor Portland, OR 97204 (503) 725-4617 Hermiston Public Library 235 E. Gladys Avenue Hermiston, OR 97838 (541) 567-2882 Mid Columbia Library (Kennewick Branch) 1620 S. Union St. Kennewick, WA 99336 (509) 586-3156 or 1-800-572-6251 Umatilla Community Outreach Office 245-B East Main Street Hermiston, OR 97838 (541) 564-9339
Will there be public meetings or public hearings?	The Environmental Quality Commission will be having a special meeting about UMCDF on August 18, 1999. The meeting will be held at 811 S.W. Sixth Avenue, Portland, Oregon, Room 3A, and will begin at 10:00 a.m. with a presentation by the U.S. Army concerning the Army's plans for the Dunnage incinerator (one of the five furnaces permitted for UMCDF). The work session on UMCDF carbon filtration technology will be held from 12:30-3:00 p.m.. Persons on the DEQ's Umatilla mailing list received the August EQC meeting agenda with this Chance to Comment Form. If you did not receive an EQC Agenda for the August 18 meeting please contact the Hermiston office of the DEQ at the number given above.
Where do I send my comments?	Written comments should be presented to the DEQ by 5:00 p.m., September 20, 1999. The mailing address is Wayne Thomas, Umatilla Program Manager, DEQ – Hermiston Office, 256 E. Hurlburt, Suite 105, Hermiston, OR 97838.
Accommodation of disabilities:	Please notify DEQ about any special physical or language accommodations you may need as far in advance of the meeting or hearing as possible. To make these arrangements, contact Sylvia Herrley at 1-800-452-4011 (toll free in Oregon), or at (503) 229-5317. People with hearing impairments may call DEQ's TDD number at (503) 229-6993.
Accessibility information:	This publication is available in alternate format (e.g. large print, Braille, Spanish) upon request. Please contact DEQ Public Affairs at (503) 229-5317 to request an alternate format.

PMCD
Program Manager for
Chemical Demilitarization

IMPLEMENTATION OF THE POLLUTION ABATEMENT SYSTEM FILTER SYSTEM (PFS) AT THE UMATILLA CHEMICAL AGENT DISPOSAL FACILITY (UMCDF)

Presented to:
Oregon Environmental Quality Commission

Mr. Rick Holmes, Operations Team,
Project Manager for Chemical Stockpile Disposal

18 August 1999

NRC REPORT: CARBON FILTRATION FOR REDUCING EMISSIONS FROM CHEMICAL AGENT INCINERATION

PMCD
Program Manager for Chemical Demilitarization

UMATILLA
chemical agent disposal facility

Three Key Points:

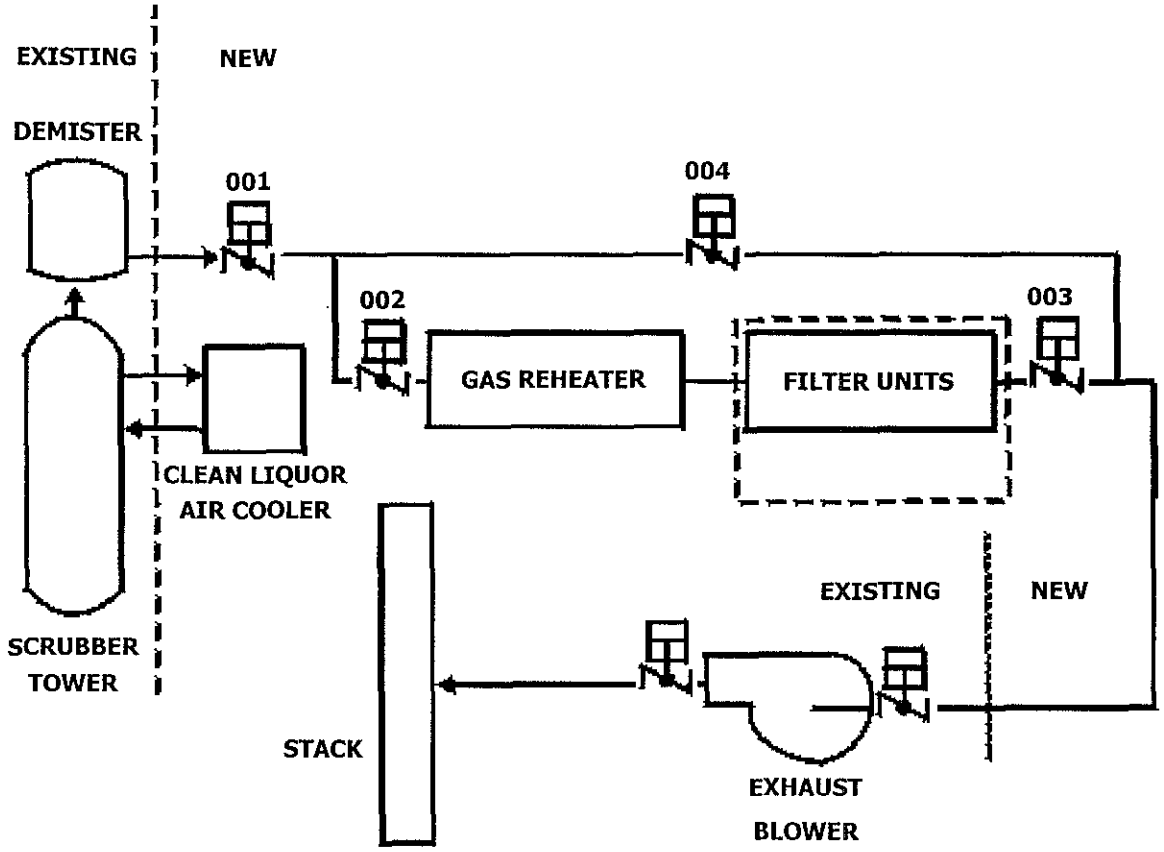
- Continue forward with the PFS as a component of the UMCDF unless there is a significant public sentiment for its removal
- Complete the site specific implementation of the PFS at UMCDF
- Move forward with the implementation of the Change Management Process

PMCD
Program Manager for Chemical Demilitarization

IMPLEMENTATION OF THE PFS AT THE UMATILLA CHEMICAL AGENT DISPOSAL FACILITY

UMATILLA
chemical agent disposal facility

- **Existing System Design:**



PMCD
Program Manager for Chemical Demilitarization

IMPLEMENTATION OF THE PFS AT THE UMATILLA CHEMICAL AGENT DISPOSAL FACILITY

- **Complete System Design**
  - ➤ Systems hazard analysis - Completed
  - ➤ Equipment fabrication - In progress
  - ➤ Filter unit vendor testing - Completed in June 1999
  - ➤ Challenges:
    - ✓ Change-out frequency for inlet HEPA filter
    - ✓ Details of charcoal replacement and handling
  - ➤ Integration of all equipment components during Systemization

PMCD
Program Manager for Chemical Demilitarization

IMPLEMENTATION OF THE PFS AT THE UMATILLA CHEMICAL AGENT DISPOSAL FACILITY

- **Finalize Worker Risk Assessment/Manage Identified Risks**
  - **Phase 2 QRA for the entire facility- Underway, then update continuously**
  - **Capture industrial experience - Incorporate as applicable**
  - **Develop operating procedures - Complete Process and Job Hazard Analysis**
  - **Validate procedures during Systemization**

PMCD
Program Manager for Chemical Demilitarization

SUMMARY OF THE PFS AT THE UMATILLA CHEMICAL AGENT DISPOSAL FACILITY

- PMCSD will continue with the PFS as a component of the UMCDF unless there is significant public desire to remove them
- Implementation of the PFS will require the completion of the design and integration of the workforce with the equipment to comprise a functional system
- Use of the Change Management Process will continue

PMCD
Program Manager for
Chemical Demilitarization

SECONDARY WASTE PROCESSING AT THE UMATILLA CHEMICAL AGENT DISPOSAL FACILITY (UMCDF)

Presented to:
Oregon Environmental Quality Commission

Mr. James L. Bacon, Program Manager for Chemical Demilitarization
Mr. Mark Evans, Chief, Operations Team, Project Manager for Chemical Stockpile Disposal
Mr. Loren Sharp, Deputy Project Manager, UMCDF, Raytheon Demilitarization Company

18 August 1999

PMCD
Program Manager for Chemical Demilitarization

SECONDARY WASTE PROCESSING AT THE UMATILLA CHEMICAL AGENT DISPOSAL FACILITY

PMCD Charter: Dispose of the stockpile at Umatilla Chemical Depot while ensuring MAXIMUM PROTECTION to the workers, the public, and the environment

Strive to provide best value while ensuring NO COMPROMISE to our maximum protection charter

Not a cost/benefit trade-off - no sacrifices in safety or environmental protection are tolerated

PMCD
Program Manager for Chemical Demilitarization

SECONDARY WASTE PROCESSING AT THE UMATILLA CHEMICAL AGENT DISPOSAL FACILITY

- **Current RCRA permit correctly identifies the DUN as the best available technology for disposing of secondary waste**

- **Planning in support of JACADS closure indicates that equally-protective, more cost-effective approaches may be possible - but these approaches remain undemonstrated**

PMCD wants to ensure environmentally - responsible, cost effective means are implemented at the UMCDF

SECONDARY WASTE PROCESSING AT THE UMATILLA CHEMICAL AGENT DISPOSAL FACILITY

PMCD
Program Manager for Chemical Demilitarization

- "Maximum protection" means that changes that impact the start date of stockpile destruction operations must be avoided
- Time for meaningful public involvement must be included in any change assessment process
- Oregon's strong preference for DEMONSTRATED technology applications must also be taken into consideration

The challenge: Deriving an approach to allow for consideration of demonstrated alternatives while maintaining the start date for stockpile destruction operations

PMCD
Program Manager for Chemical Demilitarization

SECONDARY WASTE PROCESSING AT THE UMATILLA CHEMICAL AGENT DISPOSAL FACILITY

- **The dunnage incinerator was designed and permitted for waste streams with different characteristics**
- **In order to accommodate these wastes, the DUN was designed for the worst case for each waste as compared to the design requirements for any one waste stream**
- **This manifests itself in cost ($30M)**

The DUN meets environmental standards but is a relatively expensive unit to procure, install, and operate

PMCD
Program Manager for Chemical Demilitarization

SECONDARY WASTE PROCESSING AT THE UMATILLA CHEMICAL AGENT DISPOSAL FACILITY

- **Work in support of JACADS closure has identified different approaches for each waste stream permitted for the DUN**
- **Preliminary analysis indicates that these alternatives are "risk neutral" from an environmental and risk (chronic and acute) perspective**
- **Preliminary analysis also indicates that cost savings in the range of 13-20 million dollars are possible**

SECONDARY WASTE PROCESSING AT THE UMATILLA CHEMICAL AGENT DISPOSAL FACILITY

PMCD
Program Manager for Chemical Demilitarization

UMATILLA
chemical agent disposal facility

- **Alternative approaches will not be demonstrated in time to allow for permit modification and installation at Umatilla (if warranted) prior to the scheduled start of stockpile destruction operations**
- **85% of cumulative public risk from stockpile destruction operations will be eliminated during the first disposal campaign at the UMCDF**

The challenge: Identify a way to allow for demonstration and possible use at Umatilla without delaying the start date

PMCD
Program Manager for Chemical Demilitarization

SECONDARY WASTE PROCESSING AT THE UMATILLA CHEMICAL AGENT DISPOSAL FACILITY

- **Proposed approach:**
  - ➤ **Develop a firm compliance schedule tied to testing and demonstration activities at other sites and to critical milestones at the UMCDF**
  - ➤ **The DUN remains on-hold pending decision process**
  - ➤ **Ensure that Oregon DEQ has FULL and OPEN access to all developments in secondary waste**

Approach consistent with "maximum protection", Oregon desire for demonstrated solutions, and prudent fiscal practices

PMCD
Program Manager for Chemical Demilitarization

SECONDARY WASTE PROCESSING AT THE UMATILLA CHEMICAL AGENT DISPOSAL FACILITY

- **What is the down side?**
  - ➤ **Some wastes in storage longer than originally anticipated**
    - ✓ **50% of charcoal was originally programmed to be disposed of in closure - now 100%**
    - ✓ **Protective clothing from first campaign would also have to be stored for later processing**
  - ➤ **Oregon concerns over "legacy wastes" - will the Army commit to the disposition of these wastes in a timely manner?**

PMCD
Program Manager for Chemical Demilitarization

SECONDARY WASTE PROCESSING AT THE UMATILLA CHEMICAL AGENT DISPOSAL FACILITY

- **Public/worker risk from proposed approach will be minimal and will follow practices demonstrated at the JACADS**
- **Compliance schedule with clear, tangible commitments will allow State to have sufficient control over process to ensure legacy waste issue is not created at UMCDF**

The Army needs to work with the DEQ to ensure the State has adequate visibility and control of the process

SECONDARY WASTE PROCESSING AT THE UMATILLA CHEMICAL AGENT DISPOSAL FACILITY

Raytheon

- **Raytheon Demilitarization Company uniquely positioned:**
  - ➤ **Operating, Maintaining, and Closing JACADS**
    - ✓ **First-hand knowledge on DUN design and performance**
    - ✓ **Ten years experience with handling and storage of charcoal, PPE, and other secondary wastes**
    - ✓ **Programmatic Lessons Learned Program to feed experience forward**

SECONDARY WASTE PROCESSING AT THE UMATILLA CHEMICAL AGENT DISPOSAL FACILITY

Raytheon

- **Raytheon Demilitarization Company uniquely positioned: (continued)**
  - ➤ **Currently designing the JACADS carbon micronization and thermal decontamination system**
    - ✓ **Responsible for installation, testing, and operations**
    - ✓ **Developing permit modifications**

Raytheon Demilitarization Company ensures Oregon not only a demonstrated technology but a demonstrated performer

TIER 1 1ST FURNACE TURNOVER (MAY 00)	TIER 2 START OF THERMAL OPS (JAN 01)	TIER 3 START OF STOCKPILE DESTRUCTION OPS (OCT 01 - FEB 02)	TIER 4 COMPLETION OF 1ST CAMPAIGN (FEB 03 - JUL 03)
• Submittal of compliance plan permit mod • Submittal of permit mod for storage pending on-site disposal • Submittal of waste analysis plan update	• Submittal of waste management plan for stockpile destruction operations (1st campaign) • Submittal of waste minimization plan for destruction operations (1st campaign) • Submittal of GB test results for TDS • Submittal of permit mod to allow contaminated wood to be processed in MPF and to address misc. wastes • Furnish copy of JACADS permit mod packages for TDS & CMS	• Submittal of Permit package for PPE disposal • Submittal of report on initial operations of JACADS CMS	• Submittal of permit package on carbon disposal

SECONDARY WASTE PROCESSING AT THE UMATILLA CHEMICAL AGENT DISPOSAL FACILITY

Raytheon

Additional initiatives:

- DEQ participates in JACADS Closure integrated process team (IPT)
- DEQ witnesses installation, testing, and operations at JACADS, CAMDS
- Creation of new IPT to guide/oversee development of all Tier 1 modifications

Full participation and involvement

PMCD
Program Manager for Chemical Demilitarization

SECONDARY WASTE PROCESSING AT THE UMATILLA CHEMICAL AGENT DISPOSAL FACILITY

- **PMCD remains committed to executing the program in a manner which ensures maximum protection and satisfies State of Oregon requirements**
- **PMCD desires the latitude to continue to pursue prudent cost-reduction initiatives while ensuring no compromise to environmental protection or worker/public safety**
- **PMCD looks forward to working with the DEQ to develop/finalize a compliance schedule modification to allow process to continue**

Maximum protection, best value -
and NO compromises to environment/safety

Department of Environmental Quality

Memorandum

To: Environmental Quality Commission
Langdon Marsh, Director
Stephanie Hallock, Eastern Region Administrator

From: Wayne C. Thomas WCT 8/13/99
Program Manager, Umatilla Chemical Agent Disposal Program

Date: August 13, 1999

Re: August 18, 1999 EQC Work Session: Dunnage Incinerator and Carbon Filters at Umatilla

DEQ Item No.: 99-1367

A copy of the National Research Council's report on the Army's Carbon Filter Systems is enclosed. We are sorry we couldn't get the report to you earlier, but it was released yesterday and we have just received it today. We have not had time to review the report.

In addition, the Department has prepared some background information for you concerning the issues surrounding the Dunnage Incinerator. A one-page "fact sheet" about the Dunnage Incinerator (DUN) is enclosed, and a summary of the Department's discussions and correspondence with the Army concerning the DUN is presented below.

Background

On August 18, 1998 the US Army notified the Department that it was considering the removal of the DUN from the permitted design at the UMCDF (copy enclosed). In its correspondence the Army stated that they believe, based on experience from other chemical demilitarization facilities and estimated waste processing requirements for the DUN, that an improved method for meeting these requirements could be utilized at the Umatilla Chemical Agent Disposal Facility (UMCDF).

In response, the Department advised the Army on August 27, 1998 that deletion of the DUN would require a Class 3 permit modification with review and approval by the EQC (copy enclosed). The Department also requested that the Army provide us with a comprehensive briefing on their proposed decision to remove the DUN from the UMCDF design.

The Department and the Army met on October 27, 1998, to discuss the DUN and the overall issue of the management of secondary wastes. The Army indicated that they were evaluating a variety of methodologies as alternatives to the DUN to treat secondary wastes produced by the demilitarization process at UMCDF (meeting notes prepared by the Army are enclosed). As a follow-up to the October meeting, the Department reiterated to the Army in a letter dated December 3, 1998 that removal of the DUN would require the approval of the Environmental Quality Commission, and that UMCDF could not be used as a test site for a prototype system to treat secondary wastes (copy enclosed).

On June 15, 1999, the Army and the Department met to discuss the environmental permitting requirements of the various options under consideration for secondary waste treatment technology at the UMCDF. A copy of the meeting notes are enclosed, and a summary of the options that were discussed is presented below.

Dunnage Incinerator options identified in the June 15, 1999 meeting

1. ***Install the DUN as permitted in the existing design.***

   If the Army decides to install the DUN as originally designed and permitted, it will be necessary for the Army to justify that decision in light of the fact that the DUN is not operating at the Tooele facility (TOCDF) or at JACADS, and that the Army itself seems to have little confidence that the DUN can work as designed. A permit modification would be required to incorporate the justification and additional information into the permit application and allow for the public to review the materials.

2. ***Removal of the DUN from the permitted design of UMCDF and replacement with a new technology or technologies.***

   Removal of the DUN will have significant ramifications in terms of environmental permitting and will require a Class 3 Permit Modification and approval by the Environmental Quality Commission. Because of Oregon's statutory requirements concerning hazardous waste treatment facilities, a proposal to replace the DUN technology with some other technology will result in the need for a Class 3 Permit Modification and possibly a determination of "Best Available Technology" by the Oregon Environmental Quality Commission. That process, which can begin only after a valid Permit Modification Request has been received, will take approximately 18 months.

3. ***Modification of the existing DUN design and installation at UMCDF.***

   Modification of the existing DUN design will require a Class 3 Permit Modification and approval by the Environmental Quality Commission. That process, which can begin only after a valid Permit Modification Request has been received, will take approximately 18 months.

Summary

The Army has had many years to resolve the treatment of secondary waste in general, and the use of the DUN in particular, but has made little progress. It appears that the Army has limited its mission to destruction of chemical warfare agents, and incorrectly assumes that wastes produced from the demilitarization process are something that can be taken care of later. That kind of thinking has resulted in the innumerable sites around the country (at both private and government facilities) that now require costly clean-up, usually after significant environmental damage has already occurred. Oregon has consistently informed the Army that treatment of the chemical weapons stockpile must include treatment of all wastes generated during storage, maintenance, processing, and closure operations.

The Department's position has been that the Army must have an acceptable on-site treatment methodology for all secondary wastes prior to the start of thermal operations at UMCDF. Given the current schedule, and the Army's lack of progress in resolving the secondary waste issues, the Department recognizes that this position may cause a delay in the start of disposal operations, resulting in increased risk to the community from continued storage.

We anticipate that the Army will present a proposal to the EQC on August 18 concerning the development and implementation of a permit compliance schedule to enable the start of thermal operations prior to the full resolution of secondary waste treatment issues.

Enclosures: Dunnage Incinerator Fact Sheet (prepared July 1999)
August 18, 1998 Army notification to DEQ about possible removal of the DUN from UMCDF
August 27, 1998 DEQ response and request for briefing
October 27, 1998 meeting notes (provided by the U.S. Army)
December 3, 1998 DEQ follow-up letter to October 27 meeting
June 15, 1999 meeting notes (provided by the U.S. Army)

UMATILLA CHEMICAL AGENT DISPOSAL FACILITY
HERMISTON, OREGON
DUNNAGE INCINERATOR Q&A

(Prepared by Department of Environmental Quality)

What is the Dunnage Incinerator?

The Dunnage Incinerator (known as the "DUN") is one of five furnaces to be used at the Umatilla Chemical Agent Disposal Facility (UMCDF) under construction at the Umatilla Chemical Depot in eastern Oregon. UMCDF is a permitted hazardous waste treatment facility designed to destroy the entire chemical weapons stockpile that has been stored at the Umatilla Chemical Depot since the early 1960s.

What other furnaces will be used at Umatilla?

The chemical weapons destruction process involves draining and dismantling the various munitions and containers. This produces four separate waste streams that require treatment. Liquid waste (nerve and blister agents and decontamination solutions) are treated in two liquid-injection incinerators. Explosives and propellants ("energetics") are treated in the Deactivation Furnace (a thick-walled rotary kiln). Metal parts are treated in the Metal Parts Furnace, a roller-hearth furnace that essentially "bakes" the metal at high temperatures to destroy any residual chemical agent. Each furnace at UMCDF, including the DUN, has its own pollution control system.

What waste will be treated in the Dunnage Incinerator?

The DUN was intended to treat a variety of solid wastes, including the wooden pallets used to store the munitions. Other solid wastes that might be fed into the DUN include paper, cleaning rags, small metal parts (such as banding, and small machine components), plastic wastes, laboratory solid wastes, and carbon filter materials (from various filters used throughout UMCDF to ensure that agent-contaminated air is not released to the atmosphere). Much of the waste that will be treated in the DUN will be contaminated, to a varying degree, with chemical agents.

How does the Dunnage Incinerator work?

The DUN is a natural gas-fired, ram-fed furnace with a horizontal primary combustion chamber approximately six feet wide by six feet high by 16 feet long. Dunnage material is usually loaded into eight-foot-long cardboard boxes (wood pallets are not put into containers) and pushed into one end of the furnace. There is a vertically-oriented secondary combustion chamber (afterburner) that operates at about 2,000 °F to insure combustion of the gases from the primary chamber. When combustion of a charge is complete, the next charge is pushed into the furnace. There is an ash discharge door located at the far end of the furnace.

Why has the Dunnage Incinerator become an issue?

On August 18, 1998, the US Army notified the Department that it was considering the removal of the DUN from the permitted design at the UMCDF. The Department and the Army met on October 27, 1998, to discuss the DUN and the overall issue of the management of secondary wastes. The Army indicated that they were evaluating a variety of methodologies as an alternative to the DUN to effectively treat secondary wastes produced by the demilitarization process at UMCDF. The Department told the Army in a letter dated December 3, 1998, that removal of the DUN would require the approval of the Environmental Quality Commission, and that UMCDF could not be used as a test site for a prototype system to treat secondary wastes.

What is the status of the Dunnage Incinerator?

The Department believes that the Army must demonstrate an acceptable and proven on-site waste disposal methodology for all chemical demilitarization secondary wastes prior to the start of thermal operations at UMCDF, currently scheduled for January 2001. The Army has told the Department that a decision about the DUN will be made in July 1999. A briefing has been scheduled for the Environmental Quality Commission on August 18, 1999.

Prepared July 2, 1999. For more information please contact Wayne C. Thomas, DEQ Umatilla Program Manager, at 541-567-8297, ext. 22

SO

98-0584

DEPARTMENT OF THE ARMY
PROGRAM MANAGER FOR CHEMICAL DEMILITARIZATION
ABERDEEN PROVING GROUND, MARYLAND 21010-5401

18 August 1998

Project Manager
for Chemical Stockpile Disposal

PMU – 980709

SUBJECT: Decision Being Pursued to Remove the Dunnage Incinerator (DUN) from the Umatilla Chemical Agent Disposal Facility (UMCDF) Scope

STATE OF OREGON
DEPARTMENT OF ENVIRONMENTAL QUALITY
RECEIVED
12:13

Mr. Wayne Thomas
Program Manager, UMCDF
Oregon Department of Environmental Quality
256 East Hurlburt
Hermiston, OR 97838

HERMISTON OFFICE

Dear Mr. Thomas:

Notification is provided that the U.S. Department of the Army, Program Manager for Chemical Demilitarization (PMCD) is pursuing a decision to remove the DUN from the UMCDF scope. PMCD believes, based on experience at other chemical demilitarization facilities and estimated waste processing requirements for the DUN, an improved method for meeting these requirements can be utilized at the UMCDF.

In order to proceed with making this decision, PMCD intends to utilize the Change Management Process (CMP) to solicit public input concerning this decision. PMCD is completing the necessary studies and activities required by the CMP process. These include updates to the Health Risk Assessment and Quantitative Risk Assessment.

Currently, efforts are on hold with regard to procurement of the DUN and design efforts are underway to provide for DUN the removal. Implementation of efforts beyond design will be made in accordance with regulatory requirements and will not be undertaken until after a decision has been finalized.

PMCD looks forward to working with the Department of Environmental Quality in proceeding with the decision process and the required regulatory actions to implement the decision, if so decided.

If you have any questions, please call my point of contact, Mr. Wendell Wrzesinski at (541) 564-7053.

Sincerely,

Martin A. Jacoby
Lieutenant Colonel, USA
Commander
*CERTIFICATION STATEMENT

Raj K. Malhotra, P.E.
UMCDF Site Project Manager
*CERTIFICATION STATEMENT

CF:
Mr. B. McKnight (DEQ-Bend)
Ms. K. Massimino (EPA)
Mr. J. Michael (EPA Headquarters)

*I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

FILE

98-0606 10

Oregon

John A. Kitzhaber, M.D., Governor

Department of Environmental Quality
Eastern Region
Hermiston Office
256 E Hurlburt
Hermiston, OR 97838
Phone: (541) 567-8297
FAX: (541) 567-4741
TTY: (503) 229-6993

August 27, 1998

Lieutenant Colonel Martin A. Jacoby
Commander
Umatilla Chemical Depot
Hermiston, OR 97838-9544

Mr. Raj Malhotra
Project Manager for UMCDF
78080 Ordnance Road
Hermiston, OR 97838-9544

Re: Dunnage Incinerator
Umatilla Chemical Disposal Facility
DEQ Item No. 98-0606

Dear LTC Jacoby and Mr. Malhotra:

The Department of Environmental Quality (DEQ) acknowledges receipt on August 20, 1998 of your letter providing notification that the U.S. Army Program Manager for Chemical Demilitarization (PMCD) is pursuing a decision to remove the Dunnage Incinerator (DUN) from the permitted facility design. The Department understands that the Army will utilize the Change Management Process to solicit public input in October 1998 concerning the decision to delete the DUN.

The Army's recommendation to proceed with a decision to delete the DUN from the approved permitted design is a very significant decision. This decision will require a Class 3 permit modification with review and approval by the Environmental Quality Commission. The Department is currently evaluating the regulatory requirements to allow the Army to proceed with this decision; however, it is difficult to fully assess the requirements until we have more information from the Army. Therefore, the Department requests that within 30 days the Permittee provide a comprehensive briefing on the proposed decision. At a minimum, the briefing must address the following issues:

- Potential effects on the Health Risk Assessment Analysis and Quantitative Risk Analysis
- Management of Secondary Waste Streams currently targeted for the DUN
- Campaign schedule

I have designated Sue Oliver as the Department lead person for this complex regulatory and technical issue. If you have any questions please contact Sue Oliver in the Hermiston Office at (541) 567-8297, Ext. 26.

Sincerely,

Wayne C. Thomas

Wayne C. Thomas
Program Manager
Umatilla Chemical Disposal Program

S.O
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DEPARTMENT OF THE ARMY
PROGRAM MANAGER FOR CHEMICAL DEMILITARIZATION
ABERDEEN PROVING GROUND, MARYLAND 21010-5401

98-0943

November 12, 1998

Project Manager
for Chemical Stockpile Disposal

PMU – 981007

SUBJECT: Dunnage Incinerator (DUN) Replacement and Alternative Waste Management for the Umatilla Chemical Agent Disposal Facility

Mr. Wayne Thomas
Program Manager, UMCDF
Oregon Department of Environmental Quality
256 East Hurlburt
Hermiston, Oregon 97838

Dear Mr. Thomas:

Please find the enclosed meeting minutes from the subject presentation to the Oregon Department of Environmental Quality (DEQ) on October 7, 1998. This correspondence responds to an action item to issue a letter defining schedule for the next meetings regarding DUN replacement.

PMCSD will be prepared to discuss planning for proceeding with implementing the Change Management Process (CMP) in making a decision on DUN replacement and to discuss approaches to proceed with permitting of the DUN by early December. We will be in touch with Ms. Sue Oliver of your staff to schedule a specific meeting date.

If you have any questions, please call my point of contact, Mr. Wendell Wrzesinski at (541) 564-7053.

Sincerely,

Martin A. Jacoby
Lieutenant Colonel, USA
Commander
*CERTIFICATION STATEMENT

Raj K. Malhotra, P.E.
UMCDF Site Project Manager
*CERTIFICATION STATEMENT

Enclosure

*I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

SAIC Meeting Minutes: DUN Replacement Presentation for ODEQ

MEETING TITLE:	DUN Replacement and Alternative Waste Management for UMCDF
LOCATIONS/DATE:	UMCDF, Hermiston, Oregon 27 October, 1998
ATTENDEES:	Listed in Attachment A
PURPOSE:	Present PMCSD's DUN elimination plan for Oregon Department of Environmental Quality

SAIC Meeting Minutes: DUN Replacement Presentation for ODEQ

A presentation meeting was held on 27 October 1998 at the Umatilla Chemical Destruction Facility (UMCDF) for the representatives from Oregon Department of Environmental Quality (ODEQ). Goal of the meeting was to present PMCSD's plan for DUN replacement and alternative waste management at UMCDF. Meeting started at 1:00 p.m. and ended at 4:40 p.m. List of participants is included in Attachment A.

Summary of opinions and comments made by the ODEQ representatives are presented below, followed by a list of action items, and a detailed record of discussion during the meeting.

Summary of significant comments and opinion expressed by ODEQ on the DUN replacement plan:

1. Sue Oliver (S.O.) has been designated to be in charge of the DUN project, and she will be the designated point of contact (POC) for ODEQ.
2. In accordance with the permit specifications, only agent-free waste can be shipped off-site.
3. DUN elimination proposal is a significant change to the permitted waste analysis plan. It will be considered as a Class III modification or a mini part B permit application. Evaluation of the permit modification request is estimated to take at least 18 months.
5. Request for a temporary authorization (TA) to install the carbon micronization system (CMS) would not be evaluated favorably because:

    a) Data on agent contaminated spent carbon incineration (treatment) utilizing the CMS is not available (required prerequisite for a favorable evaluation of a TA request)
    b) From ODEQ's perspective, JACADS (and not Oregon) should be the first place to test new technologies before being implemented at CONUS sites. ODEQ does not intend to approve implementation of a prototype treatment system (CMS) at UMCDF.
    c) Issuing a TA (for CMS) would be considered a pre-approval of the proposed change prior to the formal modification review process, hence the reluctance to issue any future TA for a significant modification.
    d) Environmental Quality Commission (EQC) review

6. System testing including only a surrogate trial burn for the CMS may be evaluated favorably providing there is comprehensive test data on agent contaminated spent carbon processing.
7. Operation of UMCDF without the DUN could be permitted if an acceptable waste disposal methodology is submitted in a permit modification application.
8. Decision to operate UMCDF with the DUN will be questioned by the EQC (because of the perceived Army's lack of confidence in performance of the DUN).
9. Permit application for DUN replacement and micronization system must prove that the CMS is the best available control technology (BACT) in comparison to the DUN. In

addition, EQC may request evaluation and comparison to alternative technologies, including ACWA type technologies.

10. The agency (ODEQ) is neutral on the methodology and approach for waste disposal as long as the process is safe and does not introduce additional risk for the public. All new proposals will have to meet the regulatory risk limits and not increase the baseline risk.
11. The agency is open to any new proposals and implementation approaches not requiring a TA.
12. Permit modification request to install a dual-fuel burner (without the CMS; micronization mill, etc.,) in the DFS for future use with the CMS would be evaluated favorably providing that comprehensive permit modification including detailed design and performance data is submitted.
13. Original assumptions or methodology for the baseline HRA evaluation (performed by E&E) must be used for any risk assessment evaluations associated with proposed changes. Changes of the assumptions or methodology most likely will not be accepted.

Other comments expressed by the ODEQ representatives:

1. TA for the PFS expires on 17 November 1998 and ODEQ is still awaiting additional information in order to complete evaluation of the permit modification application.
2. In retrospect, ODEQ should not have issued the PFS TA and should have demanded a more complete and comprehensive permit modification application before issuing the TA for construction of the PFS.
3. Scope for the DUN elimination permit modification application should be defined before the application is submitted (lessons learned from the PFS TA)

Action Items:

Action Item 1:	SAIC to verify that the permit does specify that all waste must be treated on-site prior to shipment off-site.
Action Item 2:	SAIC to re-evaluate drum disposal method for the proposed CMS methodology.
Action Item 3:	P. Bergeron to provide ODEQ with additional technical information required for the PFS permit modification evaluation.
Action Item 4:	SAIC to specify separate activities for CMS design and fabrication on the proposed implementation schedule.
Action Item 5:	W. Wrzesinski to issue a letter scheduling a follow-up meeting on DUN replacement to define a scope of the proposed change.

Internal Action Item 1: P. Bergeron to notify Col. Fisher that obtaining test data for agent contaminated spent carbon treatment with CMS will take a considerable effort.

Detailed record of the discussion during the meeting:

1. After Paul Bergeron's (P.B.) introduction, Wayne Thomas (W.T.) stated that he has designated Sue Oliver (S.O.) to be in charge of the DUN project and she will be the designated point of contact (POC) for ODEQ.

2. P.B. stated that Wendell Wrzesinski (W.W.) will be the designated POC for PMCSD for the DUN project.

3. During description of the RCRA defined waste streams for the DUN (presentation slides #3 and #4), S.O. inquired about the DPE suits disposal approach. Wojtek K. Tomanek (W.K.T.) replied that the DPE suits are not defined in the permit as a waste stream for the DUN and are not being addressed in this evaluation. This response was accepted by the DEQ without comment.

4. During presentation of the proposed alternative waste management for DUN replacement (presentation slide #6), W.T. questioned the not-exposed-to-agent classification. S.O. questioned, how will the agent-contamination be determined? W.T. also commented on the definition of not-exposed-to-agent with a follow-up statement that it would be reasonable to assume that in an igloo with a leaker all wooden pallets would be exposed to agent vapors (to some degree) and should not be classified as not-exposed-to-agent.

   W.K.T. and P.B. replied that in parallel with the operational experience and precedence established to date only pallets with a leaking munition on that pallet and exposed to the liquid agent are generally considered agent-contaminated. (Not all pallets in an igloo that has had a leaker should be considered agent-contaminated.)

   Then, S.O. added that the permit specifies that only agent-free dunnage (waste) can be shipped off-site. S.O. asked if the Army is intending to utilize "knowledge of the process" to determine the agent-contamination classification and how would that be done. P.B. concurred that the knowledge of process would be utilized in determining the agent contaminated wood pallets.

   W.T. questioned, how could the waste stream classified as "wood, not-agent-contaminated, non-RCRA-hazardous," or anything else be sent to a non-regulated solid waste land fill? Further, W.T. stated that the permit states that all generated waste streams will be treated on-site *[Action Item 1: SAIC to verify that the permit does specify that all waste must be treated on-site prior to shipment off-site.]*. W.T. continued stating that this proposal (DUN elimination) plans to dispose of large amounts of waste off-site which is not in accordance with the permitted waste analysis plan. He summarized that this is a significant change in the waste treatment plan, and it would be scrutinized by the

commission and the public. A review of a permit modification as significant as this one should be expected to take approximately 18 months.
W.K.T. replied that this category (non-agent-contaminated and RCRA-non-hazardous) is intended for dunnage that is not related to demilitarization such as office supplies packing and similar items. All of the munitions pallets and crates used for demilitarization purposes have wood preservative and thus would be classified as RCRA-hazardous waste; under this proposal wood non-agent-contaminated related to the demilitarization (munitions pallets) would be sent to a RCRA regulated TSDF.

5. In a discussion on spent carbon processing from removal from filters to disposal (presentation slide #11), W.T. commented on the proposed off-site disposal of 3X or 5X waste at TSDF, that in accordance with the current permit only "agent-free" waste can be shipped off-site. In addition, W.T. inquired if the spent carbon would be segregated by the contamination levels.

   W.K.T. replied that the plan is to inventory all spent carbon, segregate by type of agent contamination into separate igloos. Within an igloo, drums would be further segregated by the level of contamination. Carbon from filter banks #1 and #2 which is expected to have higher level of contamination would be segregated from carbon from the remaining filter banks. On the issue of spend waste classification (5X vs. agent-free) the drum disposal approach is to be re-evaluated. *[Action Item 2: SAIC to re-evaluate drum disposal method for the proposed CMS methodology.]*

6. During the presentation covering description of the proposed carbon micronization system, equipment location, and methodology processing (presentation slide #12), W.T. inquired about the HVAC designation of the room proposed to house the micronization system.

   W.K.T. clarified that the current HVAC "B" designation for the DUN room would be the same for the DUN room housing the CMS.

7. During presentation of the CMS feed pipe routing (presentation slide #15), W.T. asked about the length and elevation changes of the feed pipe, and if an additional booster fan may be needed and what will happened to the carbon in the feed pipe if the system goes down? S.O. also expressed a concerned about explosions and thought the feed pipe may need to be able to withstand explosions both from the DFS and from carbon dust.

   W.K.T. responded that the prototype system setup approximates the proposed feed pipe length routing and elevation changes and that the existing booster fan provides adequate performance. Also, if the system shuts down the feed pipe will be equipped with isolation valves located immediately downstream of the booster fan and DFS room wall penetration. Based on operational experience of the CMS prototype, upon system re-start it is very easy to re-suspend the micronized carbon in a feed air stream. Also, the amount of carbon trapped in the feed pipe and the mill would be very small,

approximately several pounds of micronized carbon are entrapped in the feed pipe and mill.

8. During presentation of the CMS implementation approach and identification of key tasks (presentation slide #40), W.T. corrected the initial task definition stated in that presentation chart. He indicated that ODEQ does not intend to provide any formal input or comments as a part of the change management process (CMP). However, he added that it is appropriate to state that ODEQ has been briefed and advised on the intent and proposed change and that no decision would have been reached or formal guidance/opinion provided.

9. Comments made by W.T. during the discussion related to CMS implementation and Temporary Authorization (TA) (presentation slide # 41) were as follows:

   a. ODEQ just learned from PMCSD that to comply with CWC, chemical munitions have to be destroyed by 2007 but not necessarily the secondary waste.
   b. Based on information obtained at the latest environmental workshop, it is clear that the CMS is being proposed to be implemented first at UMCDF.
   c. ODEQ has very strong reservations and does not see any justification to issue a TA to install CMS because of the following:

      (1) The Army stated in the permit application the DUN process will work for the agent-contaminated carbon.
      (2) DUN has been installed at ANCDF (which suggests that it is intended to be used there).
      (3) There is no test data for the CMS incineration of agent contaminated carbon.
      (4) From ODEQ's perspective, JACADS (and not Oregon) should be the first place to test new technologies for new technologies prior to being implemented at CONUS sites. UMCDF will not be the first facility trial testing performance of the CMS incineration.
      (5) ODEQ wants to see operational or test data on CMS with agent contaminated spent carbon from JACADS or other facility in a permit modification application.
      (6) According to recently submitted permit renewal application for TOCDF, DUN has not been included indicating that the intent is to abandon it in place.
      (7) ODEQ is aware that the CMS has been scheduled to be implemented at JACADS.
      (8) The proposed waste management approach is a very significant change requiring Class III modification. It would be classified as mini part B permit application. The Class III modifications are reviewed and approved by the Environmental Quality Commission (EQC). Issuing a TA by ODEQ would give an impression of issuing a premature authorization before due process

is completed by the EQC. Hence, approval of the TA request would not be considered in a favorable light and would be an uphill battle especially in view of the difficulties in dealing with the Army in recently processed TA and modification for the PFS.

d. Test data from agent contaminated spent carbon incineration (from JACADS) is a precondition for successful consideration and possible approval of a TA for installation of the CMS.

P.B. replied that although ANCDF has installed the DUN, PMCSD's plan would be not to continue with systemization and to abandon the DUN in place, if the decision is made not to proceed with the DUN. CMS is the programmatic approach for spent carbon disposal. Also, P.B. added that in order to obtain data from JACADS, we (the Army) would have to wait till the end of operation (at JACADS) for CMS installation and operational test results in order not to interfere with the demilitarization activities.

10. When questioned (by P.B.) what is the ODEQ's position on operating the facility without the DUN, W.T. answered that it is difficult to answer that question. A comprehensive permit modification submittal would have to be reviewed to evaluate possible negative impacts. S.O. continued that the ODEQ foresees some similarities to the nuclear industry where tons of wastes were leftover without a good plan for treatment or disposal. She added that a situation where waste is left after the demilitarization operations with possibilities of budgetary cuts would leave the State of Oregon to deal with the waste problem, which would not be a desirable situation.

P.B. further inquired if the plant could be operated without the DUN. W.T. replied that ODEQ would have to review a permit modification application to evaluate if the facility would be permitted to operate without the DUN. He continued stating that ODEQ is requesting only the same level of technical information as it was provided in the original permit application.

[Action Item 3: P.B. to provide ODEQ with additional information required for the PFS modification permit evaluation]

[Internal Action Item 1: P.B. to notify Col. Fisher: that obtaining test data for agent contaminated spent carbon treatment with CMS will take considerable amount of work.]

W.T. stated that a proposal to conduct a surrogate trial burn may be acceptable, however, at this point, a definitive answer cannot be made.

11. During presentation of the operational implementation approach for spent carbon and miscellaneous waste processing (presentation slide #42), W.T. commented that the terminology used (in the presentation and in general by the Army) is misleading. From

the permit perspective, closure is considered as the end of all processing activities for both munitions processing and secondary waste treatment. Therefore, Army's use of terminology referring to waste processing during closure should be referred to as processing after the end of demilitarization operations.

P.B. added that PMCD sees an opportunity to process spent carbon during the HD ton containers campaign if the multi-agent monitoring is implemented and multi-agent processing is permitted. This would significantly reduce the amount of spent carbon to be processed after demilitarization operations. Results from the multi-agent monitoring equipment tests to be conducted at JACADS are scheduled to be available some time next summer.

P.B. inquired about a possibility of installing the CMS during construction. S.O. replied that the Army should propose (submit a permit mod request) to install the new burner (dual-fuel burner to be used for normal operation and micronization) but without the micronization system. She continued that there is nothing in the way of proposing modification to install the new burner. W.T. reiterated that it would be something ODEQ could definitively consider.

12. During discussions on the CMS implementation and operational processing of the spent carbon and miscellaneous wastes disposal in DFS and MPF (presentation slide #44 and #45), W.T. commented that the implementation schedule should show separate activities for system design and fabrication *[Action Item 4: SAIC to specify separate activities for CMS design and fabrication on the proposed CMP implementation schedule.]* and the permit modification must contain information on finalized and complete design and not a conceptual plan. Further, W.T. inquired if the presented schedule reflects the expected construction schedule slippage. P.B and W.K.T replied that the presentation is based on the official PMCSD schedule, and it does not incorporate any potential construction schedule delays.

13. There were no significant comments on the presentation of QRA results.

14. HRA results presentation included participation of a representative from E&E (as an ODEQ's subcontractor, E&E performed baseline HRA for UMCDF). S.O. questioned the small increase in risk for the adult resident and child resident (HRA presentation slide #20). However, she stated that comments that are more specific may be presented after closer review of the results by E&E. Gordon commented that it is true that DUN data applied to DFS and MPF is very conservative and better data could be used once it becomes available.

P.B. commented that the HRA methodology includes a very conservative assumption for the HVAC to emit all three agents throughout the operational life of the facility at a 20% level of the allowable stack concentration (ASC). W.T. replied that ODEQ is aware of the

issue of ton containers containing GB agent which were previously used to store L agent at TOCDF. Therefore using emissions from all three agents at the same time is considered conservative but justifiable.

W.T. also stated that it would be very difficult to explain to the public the reasons why conservative assumptions in the risk evaluation are being made less conservative in assessing risks related to a significant change. Therefore, ODEQ does not intend to change the original assumptions used in the HRA evaluation. W.T. added that in order for new permit modification proposals to receive favorable evaluation, the proposals must show that the regulatory requirement limits are not exceeded and the risks should be the same or smaller than the baseline risks.

Post-presentation discussion

W.T. inquired who would be preparing the permit modification application.
P.B. replied that RDC would be preparing the permit modification application.

On the issue of the currently scheduled CMP meeting on 8 December 1998, P.B. clarified that PMCD will have to re-evaluate schedule for the CMP meeting.

W.T. proposed a meeting to define a scope of the proposed change (DUN replacement and micronization) of the permit modification application to avoid problems experienced during the PFS permit modification process. W.W. proposed for the PMCD to follow up with a letter within a week or two to propose a date for a follow-up meeting. *[Action Item 5: W. W. to issue a letter scheduling a follow-up meeting on DUN replacement to define a scope of the proposed change.]*

W.T. commented that the TA for PFS expires on 17 November 1998 and that ODEQ is still awaiting additional information to complete permit modification evaluation. He further commented that in retrospect, ODEQ should not have issued the PFS TA and should have demanded a more complete and comprehensive permit modification application before issuing the TA for PFS construction. ODEQ views any TA as an endorsement prior to the formal modification review process, hence the reluctance to issue any future TA for another significant modification.

P.B. inquired what would be the ODEQ's position if the DUN would be installed. W.T. replied that EQC would question Army's confidence in DUN's performance in view of the intent to propose DUN elimination at UMCDF and other sites.

In closing, W.T. summarized the following items:

a. DUN replacement & micronization modification application will have to show that the proposed approach is a BACT in comparison to the DUN processing.
b. EQC will most likely request evaluation of other alternative technologies, including ACWA type technologies, since questions of that type have already been asked by the EQC members.
c. ODEQ will inquire with the state of Pennsylvania about the permitted micronization system in a prison facility.
d. Visit and inspection of the working prototype would be helpful for ODEQ in evaluation of the system.
e. EQC members have not visited the UMCDF since construction started but are planning to visit the site some time in April.
f. There is a new member on the EQC; Mark Reeve, an attorney.
g. Additional new member is expected to join EQC next June.
h. ODEQ is open to alternative approaches in addition to TA in dealing with the DUN issue.
i. The agency is neutral on the type of methodology used for waste disposal as long as the process is safe and does not introduce additional risk for the public in comparison to the baseline/.

Attachment A

UMCDF

27-Oct-98

DUN Replacement and Alternative Waste Management

First Name	Last Name	Organization	Phone Number
John	Litinski	CHPPM	410.436.6708
Ronie	Shackelford	CHPPM	410.436.7718
Mark	Walter	CHPPM	410.436.7724
Tejpal	Basra	DEQ	541.567.8297 x29
Tom	Bean	DEQ	541.567.8297 x30
Len	Chapin	DEQ	541.567.8297 x27
Sue	Oliver	DEQ	541.567.8297 x26
Wayne	Thomas	DEQ	541.567.8297 x22
Carl	From	Jacobs	626.568.7124
Paul	Bergeron	PMCSD	410.436.5168
Clara	Moraga	PMCSD	541.564.7077
Wendell	Wrzesinski	PMCSD	541.564.7053
ius	Aljure	RDC	541.564.7228
Allan	Bean	RDC	541.564.7166
Stephanie	Johansen	RDC	541.564.7172
Glenn	Levan	RDC	541.564.7167
Dave	Nylander	RDC	541.564.7220
Megan	Proctor	SAIC	541.564.7078
Wojtek	Tomanek	SAIC	410.671.6735
Cindy	Williams	SAIC	410.679.8164

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Oregon

John A. Kitzhaber, M.D., Governor

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December 3, 1998

Lieutenant Colonel Martin A. Jacoby
Commander
Umatilla Chemical Depot
Hermiston, OR 97838-9544

Mr. Raj Malhotra
Project Manager for UMCDF
78080 Ordnance Road
Hermiston, OR 97838-9544

Re: Dunnage Incinerator
Umatilla Chemical Agent Disposal Facility
DEQ Item No. 98-1031

Dear LTC Jacoby and Mr. Malhotra:

On October 27, 1998 representatives from the Department of Environmental Quality (DEQ) and the U.S. Army Program Manager for Chemical Stockpile Demilitarization (PMCSD) met to discuss the Army's decision to remove the Dunnage Incinerator (DUN) from the permitted facility design. The Army's recommendation to proceed with a decision to delete the DUN from the approved permitted design is very significant and will require a Class 3 permit modification with review and approval by the Environmental Quality Commission (EQC).

The Permittee has requested the DEQ consider a temporary authorization (TA) to install the carbon micronization system (CMS). The Department will not consider the issuance of a TA for the CMS as this would constitute a pre-approval of the proposed change prior to the formal modification review process by the public and the EQC.

The Department is concerned that the Permittee has proposed to use the Umatilla facility as a testing site for the CMS. We believe that the JACADS facility should be the test location for this new technology prior to implementation at the Umatilla Chemical Agent Disposal Facility (UMCDF). DEQ will not approve implementation of a prototype CMS at UMCDF.

The Department will evaluate operation of UMCDF without the DUN if the Permittee can demonstrate through a permit modification, acceptable and proven onsite waste disposal methodologies for all secondary wastes originally slated for the DUN. Any alternative treatments proposed for the DUN secondary waste streams must be able to meet the regulatory benchmarks for acceptable human health and ecological risks. New risk assessment evaluations (intended for comparison of treatment technologies) should be conducted using the same basic methodology and assumptions used in the 1997 Pre-Trial Burn Human Health and Ecological Risk Assessment (Pre-RA) conducted by Ecology and Environment on behalf of the DEQ.

The Department recognizes the challenge the Permittee is addressing and we are available to meet with you as needed to discuss issues prior to the formal submission of the Class 3 permit modification. One item we discussed would be a permit modification request to install a dual-fuel burner in the DFS for potential future use with the CMS. This issue requires further discussion.

I have designated Sue Oliver as the Department lead person for this complex regulatory and technical issue. If you have any questions please contact Sue Oliver in the Hermiston Office at (541) 567-8297, Ext. 26.

Sincerely,

Wayne C. Thomas

Wayne C. Thomas
Program Manager
Umatilla Chemical Agent Disposal Program

C.f. James Michael, USEPA, Washington DC
Cathy Massimino, USEPA, Region X, Seattle

DEPARTMENT OF THE ARMY
PROGRAM MANAGER FOR CHEMICAL DEMILITARIZATION
ABERDEEN PROVING GROUND, MARYLAND 21010-4005

99-1031

June 25, 1999

Project Manager
for Chemical Stockpile Disposal

ENV-99-0139

SUBJECT: Umatilla Chemical Agent Disposal Facility Hazardous Waste Permit (ORQ 000 009 431) – Summary of June 15, 1999, Exploratory Meeting regarding the Dunnage Incinerator

STATE OF OREGON
DEPARTMENT OF ENVIRONMENTAL QUALITY
RECEIVED
JUL 02 1999
HERMISTON OFFICE

Mr. Wayne C. Thomas
Program Manager, UMCDF
Oregon Department of Environmental Quality
256 East Hurlburt
Hermiston, Oregon 97838

Dear Mr. Thomas:

Enclosed is a summary prepared by the UMCDF staff of the subject meeting. The support of your office in exploring various permitting strategies regarding the Dunnage incinerator is very much appreciated.

If you have any questions, please call our technical point of contact, Mrs. Megan Proctor, at (541) 564-7078.

Sincerely,

Martin A. Jacoby
Lieutenant Colonel, USA
Commander
*CERTIFICATION STATEMENT

Raj K. Malhotra
Raj K. Malhotra, P.E.
UMCDF Site Project Manager
*CERTIFICATION STATEMENT

Jay T. Bluestein
Raytheon Demilitarization Company
Project Manager
*CERTIFICATION STATEMENT

Enclosure

*I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

CF:

Ms. L. LaMere (AMSIO-ACE-S)
Mr. R. Wynne (CEHNC –CD-UM)
Mr. R. Ayo (CEHNC-CT)
Mr. J. Stang (SFAE-CD-ME)
Capt. V. Johnston (SFAE-CD-CO-O)
Mr. J. Bluestein (RDC)
Mr. M. Yakawich (UMCD)
Mr. D. Nylander (RDC)
Ms. C. Moraga (SFAE-CD-CO-U)
Mrs. M. Proctor (SAIC)
Mr. S. Murff (SAIC)
Mr. R. Mosley (SAIC)
File

99-1032

24 June 1999

Summary of June 15, 1999, Meeting with the DEQ on the Dunnage Incinerator (DUN)

Attendees: Wayne Thomas, Tom Beam, and Sue Oliver (DEQ), Marty Yakawich (UMCD), Clara Moraga (PMCSD), Megan Proctor (SAIC), and Gus Aljure and Allan Bean (RDC)

This was an exploratory meeting to identify permitting strategies for Umatilla Chemical Agent Disposal Facility (UMCDF) secondary wastes pending the Army's decision on the DUN.

The time frame for the Army's decision on the DUN was discussed. Ms. Moraga stated that from what she knows, it is unlikely the final decision will be made by mid-July 1999 because briefings will be occurring then. Mr. Thomas stated that if a decision on the DUN was not going to be made in July 1999, DEQ wanted to be informed of when a decision would be made as soon as possible. He would like to be informed of the decision time frame by no later than mid-July 1999, in accordance with a previous agreement with Col. Lesniak. Early notification to the DEQ is essential since the Department is obligated to reconsider issuance of the UMCDF permit, per settlement of the recent lawsuit pertaining to the permit. DEQ will base their decision partially on the status of the DUN.

An issue that arose early in the meeting was that no matter what decision is made on the DUN, installation and facility construction certification of the chosen system for the incineration of secondary wastes is not likely to be complete prior to the current scheduled date for the start of hazardous waste (surrogate) treatment operations. Hazardous waste treatment operations are currently scheduled to commence in mid-January 2001 with surrogate shakedown. This is true whether the current permitted DUN design is installed with no modification or an alternative treatment technology is permitted and installed.

Another issue that arose during the meeting was the immediate need to install the DUN or an alternative treatment technology. Mr. Thomas expressed that Oregon was very concerned about getting into a "Hanford" scenario where miscellaneous wastes and contamination are left at the site after the primary mission of the project is complete. Namely, if the Army is allowed to treat all of the munitions and bulk containers first in order to meet their treaty obligations, then the State may be left with all of the secondary wastes to manage. To avoid this scenario, DEQ intends on making the issue of secondary waste treatment a condition for commencing hazardous waste operations. Therefore, DEQ's position is that if either the DUN, as currently permitted, or an acceptable treatment alternative is not installed and certified, then hazardous waste (surrogate) treatment operations cannot begin at UMCDF. Mr. Thomas noted that he has personally informed both Col. Lesniak and Mr. Bacon of Project Manager for Chemical Stockpile Disposal (PMCSD) of this position.

Mr. Thomas asked if the installation of the DUN approved in the permit is covered in the current facility construction schedule. Mr. Bean stated it was not since construction of

the DUN has been placed formally on hold by the Army under an approved Engineering Change Proposal (ECP). Mr. Thomas was not satisfied with this response and questioned why it was not addressed in the schedule.

The following options were discussed:

1. Proceed with the Current Design of the DUN:
If the Army decides to proceed with the current design of the incinerator and its associated pollution abatement system without major modification, the following issues were identified:

- Justification for proceeding with current design will need to be made to DEQ and most likely to the Environmental Quality Commission (EQC). DEQ expects the Army's pending decision will include sufficient justification to present to the EQC. The DEQ also wants to be informed of the evaluation process used to make the decision.
- The impact on the current schedule was discussed. Because the DUN has not yet been procured, it was identified that installation and certification of the system would not be possible before January 2001, the start of surrogate operations.
- Permit modification of the design should not be an issue since the basic design would not change. It was noted that a permit modification would be needed to address existing ECPs that change the permitted design. Also, DEQ stated that they would require the justification studies that supported proceeding with the current design to be added to the permit application by a permit modification.
- It was noted that if the current schedule was maintained, Facility Construction Certification (FCC) of the DUN would occur after commencement of hazardous waste operations in other UMCDF treatment units. DEQ stated that they were unwilling to allow hazardous waste operations to commence at UMCDF until all required FCC systems are installed and received FCC approval from the State.
- It was agreed that the "Best Available Technology" determination would not have to be revisited for the current DUN design.

2. Proceed with installation of DUN with major modification:
If the Army decides to proceed with installation of the incinerator and its associated pollution abatement system with major modification, the following issues were identified:

- DEQ's opinion is that whatever modification is proposed for the DUN, the Department will consider it to be a Class 3 modification and approval of the EQC will be required.
- The amount of time it would take to present to the DEQ a modification request to address the proposed changes to the DUN was discussed. Mr. Bean identified that any estimates were highly speculative since a 100% design is needed prior to submittal of a request. Nevertheless, the following projections were made:
    - 100% design is not expected to be available until at least Spring 2000 since the necessary changes first need to be identified and then would need to be approved by an ECP prior to commencing the design.
    - The changes are expected to be extensive and could affect the combustion chamber, waste feed system, ash removal system, the pollution abatement system, and various operating parameters.

- Upon completion of the 100% design, it would require 3 months to negotiate with the DEQ and prepare an adequate permit modification request.
- Prior to the permit modification request being submitted to DEQ, the proposed changes would need to undergo public review per the Army's Change Management Process.

➢ The time needed to obtain DEQ approval was discussed. It was agreed that it would take a minimum of 18 months after modification submittal to the DEQ before approval by the Department. Depending on other constraints, it was identified that UMCDF may submit a temporary authorization request to proceed with construction at the Army's risk. The DEQ did not indicate their receptiveness to this suggestion.
➢ DEQ stated that most likely a "Best Available Technology" determination would have to be made for the DUN if major modifications are made since this issue would be going before the EQC.
➢ The Health Risk Assessment will also have to be revisited and updated.

3. Cancel DUN & Proceed with Alternative Treatment Technology:

If the Army decides to proceed with installation of alternative treatment technology, the following issues were identified:

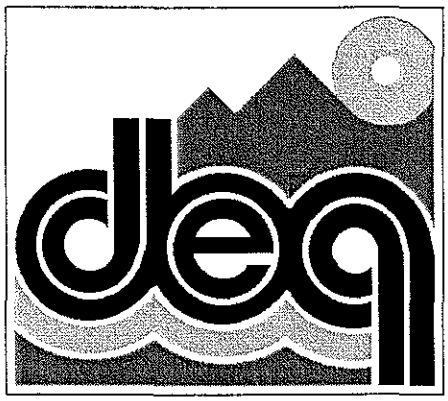
➢ DEQ stated that a "Best Available Technology" determination would have to be made. It was explained that DEQ works in conjunction with the EQC for determining the criteria for determining Best Available Technology.
➢ The DEQ will require proven technology supported by at least pilot testing data.
➢ The time needed to obtain DEQ approval was discussed. It was agreed that it would take a minimum of 18 months after submittal before approval and probably longer.
➢ It was identified that the Army would need to evaluate a revision to the UMCDF EIS.
➢ The Health Risk Assessment will also have to be revisited and updated.

Depending on the option decided on, RDC identified they might want to proceed with the permitting of various waste feeds to the MPF and DFS. This option could commence within about a year. However, before proceeding with this effort, the current permitted design needs to be aligned with the constructed design and most likely combustion studies/modeling will need to be performed to support the proposed waste feed rates.

RDC identified that prior to the availability of a means to treat secondary waste at UMCDF, the wastes could be placed in permitted storage. It was noted that the UMCD has submitted a permit application for the storage of these types of wastes. DEQ was not willing to discuss storage as a viable option at this time. Additionally, the Department indicated that the On-site/Off-site issue, which involves the transfer of waste to and from UMCDF and the processing of nonstockpile wastes, needs to be resolved prior to any further consideration of storage. DEQ is currently reviewing a proposed permit modification request to clarify the On-site/Off-site issue.

In conclusion, it was agreed that a decision on the status of the DUN was needed before further progress could be made in resolving how to proceed with a permitting strategy. DEQ requested the following:

a. Status on the progress being made with carbon micronization
b. Briefing on why technologies were not considered for Best Available Technology, including any identified cost concerns



Environmental Quality Commission

August 18, 1999

Worksession on the Umatilla Chemical Agent Disposal Facility

Prepared by

Oregon Department of Environmental Quality
Umatilla Program Office
Hermiston, Oregon

DEQ Item No. 99-1509(92.01)

Environmental Quality Commission
August 18, 1999
Worksession on the Umatilla Chemical Agent Disposal Facility

[DEQ Item No. 99-1509 (92.01)]

INTRODUCTION

This document is a partial transcript (prepared by the Oregon Department of Environmental Quality) of the meeting of the Environmental Quality Commission on August 18, 1999 held in Portland, Oregon. The meeting was held as a special worksession to discuss the Umatilla Chemical Agent Disposal Facility (Permit No. ORQ 000 009 431). Agendas for the worksession are included as Attachment A.

After introduction by staff, there was a presentation by the U.S. Army concerning "Secondary Waste Processing at the Umatilla Chemical Agent Disposal Facility." This portion of the meeting is not included in the transcription, although the question and answer session immediately following the Army's presentation is included. A copy of the Army's presentation materials are included as Attachment B.

Copies of the audio cassette tapes of the meeting are available upon request from the Department of Environmental Quality.

SPEAKERS

The following persons spoke at this meeting:

NAME	TITLE	ORGANIZATION
Carol Whipple	Chair	Environmental Quality Commission
Tony Van Vliet	Member	Environmental Quality Commission
Linda McMahon	Member	Environmental Quality Commission
Melinda Eden	Member	Environmental Quality Commission
Mark Reeve	Member	Environmental Quality Commission
Stephanie Hallock	Eastern Region Administrator (Acting Director for this meeting)	Department of Environmental Quality
Larry Knudsen	Counsel to the EQC	Department of Justice
Wayne Thomas	Umatilla Program Manager	Department of Environmental Quality
James Bacon	Program Manager for Chemical Demilitarization	U.S. Army
Mark Evans	Chief, Operations Team	U.S. Army Project Manager for Chemical Stockpile Disposal

NAME	TITLE	ORGANIZATION
Rick Holmes	Member, Operations Team	U.S. Army Project Manager for Chemical Stockpile Disposal
Loren Sharp	Deputy Project Manager, Umatilla Chemical Agent Disposal Facility	Raytheon Demilitarization Company
Karyn Jones	President	G.A.S.P.
Thomas Stibolt, M.D.	Consultant	Representing G.A.S.P., Oregon Wildlife Federation, Oregon Sierra Club, and other petitioners
Richard Condit	Counsel	Representing G.A.S.P., Oregon Wildlife Federation, Oregon Sierra Club, and other petitioners
Mick Harrison	Counsel	Representing G.A.S.P., Oregon Wildlife Federation, Oregon Sierra Club, and other petitioners
Dr. David Kosson	Chair	National Research Council Committee on Review and Evaluation of the Army Chemical Stockpile Disposal Program (National Academy of Sciences)
Dr. Walter May	Member	National Research Council Committee on Review and Evaluation of the Army Chemical Stockpile Disposal Program (National Academy of Sciences)
Dr. Kathryn Kelly	Member	National Research Council Committee on Review and Evaluation of the Army Chemical Stockpile Disposal Program (National Academy of Sciences)
Don Siebenaler	Study Director	National Research Council Committee on Review and Evaluation of the Army Chemical Stockpile Disposal Program (National Academy of Sciences)

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Environmental Quality Commission
August 18, 1998
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(Partial Transcript, Prepared by the Department of Environmental Quality)

Commissioner Whipple: —Chemical Agent Disposal Facility. I believe there is an agenda in the back of the room, as well as some materials. I expect you all know, but I would remind you that we are here today to take in information, basically to be listeners today, there is no scheduled, nor will there be any action taken by the Commission today on these issues. I'd like to introduce the members of the Commission. To my right, Linda McMahon and Tony Van Vliet, to my left Mark Reeve, and we are expecting Commissioner Eden.

Also with us today from our staff, Larry Knudsen, Legal Counsel for the Commission, Stephanie Hallock, the Acting Director for today, and Kitty Purser, the official recordkeeper for these events. We're going to move right into the agenda, I'd like to again welcome all of you today. I know there is certainly a great deal of interest in this topic, and I recognize a few of you folks in the audience. Particularly I would like to welcome Commissioner Dennis Doherty from Umatilla County and Commissioner Dan Brosnan from Morrow County, as well as the rest of you folks. We will have a question and answer session at 11:00 following the dunnage incinerator presentation. That is largely for the Commission to be asking questions. We will, if, depending kind of on our time schedule, we intend to break at 11:30 and then re-open at 12:30. So, all that being said, I would like staff to present the topic for the morning.

Wayne Thomas: Good Morning Madam Chair, Members of the Commission. I'd like to thank the Commission for taking the time to hold this special worksession for the Umatilla Project specifically on the issues of the Dunnage Incinerator and Carbon Filter Technology. For the record, my name is Wayne Thomas. I am the Manager of the Umatilla Program, located in Hermiston, Oregon. With me is Sue Oliver, Senior Hazardous Waste Specialist, and the lead staff person for the Dunnage Incinerator question.

This morning we will be hearing from the Army and its contractor on the Dunnage Incinerator issue. On August 18 of 1998, exactly one year ago, the Department was notified that the Army was considering removal of the Dunnage Incinerator from the permitted design for Umatilla. The Department and the Army have had several meetings on this question and in May

of 1999 we were advised by the Army that they would reach a decision on this question by the end of July of this year.

Based on our discussions with the Army, it appears that, it is our belief that, the Army has limited its mission to destruction of chemical warfare agents, and incorrectly assumes that wastes produced from demilitarization processes is something that can be taken care of later. This kind of thinking has resulted in the innumerable sites around the nation that now require costly clean-up and restoration, usually after significant environmental damage had occurred. The Hanford experience for the local community is always at the forefront of our thinking and we do not want to re-create that situation at the Umatilla project.

Oregon has consistently informed the Army that treatment of the chemical weapons stockpile must include treatment of all agent-contaminated wastes generated during stockpile, maintenance, processing, and closure operations. The Department's stated position has been that the Army must have an acceptable on-site treatment methodology for all secondary wastes prior to the start of thermal operations at the Umatilla project. However, given the current schedule, and the Army's lack of progress in resolving the secondary waste issues, the Department recognizes that this position may cause a delay in the start of disposal operations, which may result in increased risk to the community from continued storage.

At the June 25th EQC meeting I advised the Commission of the Department's concerns regarding the dunnage incinerator and secondary waste and at that time the Commission requested that the Army come to you today and present a briefing on the status of this question. Representatives from the Army and the Raytheon Demilitarization Company are here today to provide that briefing and I believe propose a strategy for management of secondary waste.

Commissioner Whipple: Thank you.

[Transcription note: The meeting then progressed with a presentation by the U.S. Army concerning "Secondary Waste Processing at the Umatilla Chemical Agent Disposal Facility." Mr. James Bacon (U.S. Army Program Manager for Chemical Demilitarization) introduced Dr. Theodore Prociv, Deputy Assistant Secretary of the Army for Chemical Demilitarization, who was in attendance at this meeting, although he did not address the Commission. Mr. Bacon's introduction was followed by presentations by Mark Evans of the Chemical Stockpile Disposal Program and Loren Sharp of the Raytheon Demilitarization Company. This portion of the meeting is not included in this transcription. A copy of the Army's presentation materials are included as Attachment B.]

Commissioner Whipple: [After completion of the Army's presentation.] Thank you very much, all of you. I would like you folks to stay where you are and have the Department, Sue Oliver and Wayne Thomas, to come up a little closer. I would also like to note that Commissioner Eden has joined us, courtesy of probably Horizon, which may explain a thing or two. I guess, I think we are ready to enter our question and answer phase. I think I'll ask the first one of staff and then open it to the Commission. Is this, the presentation that we've had this morning, are you familiar with this, have you folks had an opportunity to discuss some of these things particularly or is this your first cut at this?

Wayne Thomas: This is Wayne Thomas. We have seen the presentation earlier this week; we have not had a real opportunity to review it in the detail that I would like at this time. We have had the opportunity to do a preliminary review and we were aware of what was going to be [unintelligible word] today.

Commissioner Whipple: O.K. Well, I think, let's hear from the Commission.

Commission Van Vliet: Madame Chair, I have a question [unintelligible]. Is this considered a Permit Modification or a complete change in the permit itself?

Larry Knudsen: At present, we do not have either in front of us, but we are talking about the potential for a Permit Modification.

Stephanie Hallock: Madame Chair? I think that one thing that I would like to get clarified if able to do it at this time, it's a little unclear to me from the presentation what particular technology you are considering? Is it one that, if I am understanding you correctly, you will be experimenting at JACADS and you are inviting us out to see it, are you able to tell us any more about it, or is it when the Permit Mod request comes in that we actually see what it is? Because, I think, for those of you who have been through this process with us, there will have to be review by our folks in terms of what kind of analysis of that technology our law requires that we do, so obviously the sooner that we know what it is the earlier we can get on with it.

Mark Evans: Sure. What the Army is proposing is a parallel path while we maintain the DUN on hold, because we know the DUN will work and we know the DUN is permitted and will meet its permit requirements. While we go ahead to develop, and these are all thermal systems, these are not alternatives of that type, where alternatives seem to carry magic meaning to some folks. For instance, if you look at charcoal its really using the deactivation furnace system, which is already permitted to handle certain waste, putting in a different kind of feed gun into that system to allow us to introduce the charcoal into that system as well. That's how we achieve a capital cost reduction, the furnace is already paid for, the Pollution Abatement System is paid for, the Filtration System at the back end is already paid, for a relatively minor capital investment we can expand the use of that incinerator system.

For the DPE suits, the system that seems to have the most promise, is relatively low technology, it's an actual extrapolation off the autoclave technology which elevates the temperature to drive off organic compounds from contaminated surfaces, and that's basically what the unit will be comprised of. At this stage, to do things the way that the State of Oregon has a clear preference to do, I would like to be able to lay processing data on the table and someone has to make that evaluation as opposed to an engineering extrapolation. We certainly have an engineering extrapolation, and we would certainly be willing to share all of that information, but prior to the Army even making the decision that it does or does not wish to request a permit modification we really need to get that kind of data into hand.

In addition, I think our program experience clearly teaches us the risks of making economic projections at this early stage of the development of a new approach. I think we need to field this and see does it or does it not truly deliver the return on investment prior to making that decision.

Commissioner Whipple: Thank you.

Mark Evans: You're welcome.

Commissioner Van Vliet: How much of the current Dunnage Incinerator would you be starting now anyway if you developed a new system?

Mark Evans: Would that be [unintelligible] sure I understand the question. Would we go ahead and install the DUN? We would have to go ahead at this stage to make the decision to install the large unit and the Pollution Abatement System. If we went forth with the DUN at this stage, as opposed to leaving it on hold, we would in fact have to put the whole unit in. We would have to make the capital investment to do that, given the procurement lead times and the time to takes to install and test the unit, which is why this is a very important time for us. Once we cross that particular threshold and make the capital investment to do it, since there is no compelling risk driver in either direction, our intention will be to move forward and use that unit even though we may be pursuing different approach elsewhere, so we're kind of at a very important point in our evolution. Is that the answer?

Commissioner Van Vliet: Yes, that's a fair answer. Is Raytheon right now on target and on budget? Is there any cost over runs right now running on the project?

Mark Evans: I believe the best answer to that is, yes, there are some cost issues we are working to resolve and most of those deal with our method for incorporating lessons learned from our Johnston and our Tooele Facility. We budgeted anticipating lessons learned, and where we have a lot of lessons that we learned, we incorporate. The question became our ability to timely incorporate those lessons and how far along in construction we got before those lessons came to bear.

That's really the cost challenge that we have. The budget we have for incorporating the lessons is adequate, potential breakage to the construction program, i.e., re-working of work that we may have done is leading to some of the cost issues that you have probably read about, and that's our challenge today is working the best business answer for incorporating those changes. Which changes do we want to do now, which changes do we wish to defer to systemization, which in some cases makes sense—we're going to be testing the unit with multiple end effectors, why spend the money to do the end effector test today, when I know we will be changing it in a year from now, and which changes might even make more sense to implement during operations, and there are some which fall into that kind of category.

Commissioner Van Vliet: Well, not considering the Dunnage problem at all, right now at this point in time, are they on target and on budget?

Mark Evans: We are within our programmatic life cycle, which is different than their contract cost. I am not trying to dodge the question, I'm trying to be very direct. There's two dollar figures—what we have on the contract with them, and how much Mr. Bacon budgets to actually execute the job. So while there may be a change in contract value, right now they are within how much money we had anticipated we would spend for change incorporation.

Commissioner Eden: I believe it was Mr. Sharp who said something about what happens if the alternatives to the DUN don't pan out, then we are in the year 2002 or 2003, what happens to our project here in Umatilla if the alternatives don't pan out?

Mark Evans: Let me first address the schedule. I don't believe we will actually be out in 2002 or 2003—

Commissioner Eden: I was just going on what you had on your slide.

Mark Evans: Well, that's the timeline when we would submit certain things. That's why I said, that's to submit a permit modification if a permit modification is necessary. If for instance the initial JACADS processing data on carbon indicates that the system is certainly not delivering what it had been designed to do, we can move forward to implement the DUN. We would be able to do that in advance of that schedule, that's when we would be able to go through our change management process, which adds some time, before we make a decision to submit a permit modification.

Commissioner Eden: And what effect would that have on the schedule to begin burning here?

Mark Evans: If there was a requirement to have the Dunnage incinerator installed and tested, prior to commencement to agent operations it would delay that agent operations.

Commissioner Whipple: Excuse me, but isn't that sort of—kind of where we are now anyway?

Mark Evans: Yes it is. We are at the stage now, do we move forward to install the Dunnage incinerator or not, that's why this is a very important time for us. But I would like to emphasize that the decision not to install the Dunnage incinerator today is not a decision as to whether or not the Dunnage incinerator is going to be used. That is not the issue I believe we face today. The issue is do we install it today or do we allow it to remain on hold for the alternatives will mature so we can make a decision based on demonstrated data as opposed to engineering projection, that's what we are after.

Commissioner Van Vliet: You mentioned that one of the downsides was the doubling of the tonnage of carbon that needs to be destroyed, up to 782 tons, what's the increased risk factor by storing that amount?

Mark Evans: We have looked at that. It's not doubling how much is going to be destroyed, it's when it gets destroyed—it gets destroyed during closure. Given the contamination experience in the half-life of agent on charcoal that we experience historically this is a minimal to no risk impact issue for us. Because they are going to have to download it and handle it anyway. If you look at the actual restriction on multi-agent processing it's going to have to go to storage at some stage anyway and come back out of storage, minimally six months to a year or later.

We have looked at that, we have looked at how agent and carbon behave with one another, there should be no public, or worker risk increase based upon that extension. Now of course, we need to finish developing the method and nailing that down to a greater level of definity so we can submit an updated quantitative risk assessment and we are not yet at that stage.

Commissioner Eden: Here is a simplistic question: Why can't we just burn it as we go along?

Mark Evans: Burn the charcoal as we go along? It's a very interesting issue that comes up and that is that the charcoal that we are primarily taking about comes from the building ventilation system, it's not done its useful life, we're actually going to be changing it here to comply with

the literal provisions of the permit before it's even done its useful life and we will take it out at the end of each agent campaign. Here is the issue, I am at the end of a GB agent campaign, I have charcoal with GB on it I have to take it out, I can't multi-agent process it so I can't process it during the next campaign which is VX, I have to wait until the next GB campaign comes along. If you go through the leapfrog of the order of campaigns, that's what ends up to us not, quote, processing as we go along. PPE, we would hope that we could process as we go along, I think you saw that from what we talked about only the PPE for the first campaign would still not be that way, all the rest we would process as we go along.

Commissioner Reeve: Madame Chair? What's happening at Utah right now?

Mark Evans: [break in recording] —they're actual agent-used protective ensembles from TOCDF. So some of those suits from our Tooele facility actually go to this unit that we're testing in Tooele to verify that it works. So far, the test data looks very promising and those suits can be processed into a landfill at that stage. Wood, the gross majority, ninety-eight some odd percent of our wood is not contaminated wood. We have a landfill on the Tooele Army Depot we're size reducing it, chipping it and landfilling that wood on Depot, so that's what's happening with current waste-handling practices at Tooele.

Commissioner Reeve: So the DUN is installed but it's not being used?

Mark Evans: Correct.

Commissioner Reeve: What is the intent in terms of using the DUN there?

Mark Evans: We do not intend to use the DUN.

Commissioner Eden: Why don't you just take that one and bring it over here?

Mark Evans: We have talked about that and actually, we would probably bring you the DUN that's sitting outside and inside Anniston, Alabama if the issue became to expedite the delivery

of the Dunnage Incinerator, and that has been taken under consideration [unintelligible] Ideally—we've even talked about bringing in the one out at Johnston Island, taking it out. Because that's a different type of constructed facility, it's a steel panel building as opposed to a hardened concrete facility, so maybe extrication would actually be easier at JACADS. We think that if the decision was made that we must move forward with the DUN, we will bring the DUN from Anniston.

Commissioner Reeve: Would that have a significant impact on the cost savings?

Mark Evans: We've taken the cost—that into consideration in our economic projections. We look across the entire program and right now, we have one DUN, if every site, and we are going to do this at every site, and each site may have some different preferences on how they wish to move forward. Right now, we have the DUN in Alabama; we are prepared to use it in Alabama if the preference there is to use one in Alabama. We have one on order for Pine Bluff, we can move forward to do that as well, so we have several options, but we do have the DUN in Tooele.

I would hope not to extricate that from the facility. I would find it difficult to believe that that would be the best cost decision from a program perspective, given the [unintelligible]. But then again that Dunnage Incinerator has never seen agent operations either. It does have about 30-40% of the modifications we want to put into the DUN already installed, so we have thought about that.

Commissioner McMahon: We have been talking a lot about risk and money, and I understand those are important considerations, and the idea of flexibility is the one that the Commission has often embraced as important. I think what's troubling me right now and I know we aren't making any decisions today, is that this isn't a usual issue that we deal with, this is an issue of extremely high public visibility and volatility and uncertainty makes our job really really hard, so that's—how do we address that problem of uncertainty and even with a great deal of public involvement, how does that keep the waters quiet while we go around looking for alternatives, whether there is a risk or not is almost—is much lessened in that kind of environment.

Mark Evans: That's a great question. That's why to us—the first thing—the standard that has to be met is a compliance schedule with rigor. If there is not a compliance schedule with rigor, with teeth, then we shouldn't embark on this path. Because that is the answer, to some degree, of risk control, risk management that we share with the State, not just the Army and that's why it was very important when we came up with milestones to tie to. I can quote a million milestones out of our systemization program that really don't have a lot of meaning to us. We can not possibly execute the program without those critical milestones, tier one, two, three, or four. Those are absolute critical path activities towards the destruction of the first campaign's worth of munitions.

The easy answer that the Army could have made is to install the DUN. That would have been the easy answer, and I think the fact that that you know that we're here tells you 13 million to 20 million dollars is real money, and it's not money that we want to spend unless it is really the best answer and at this stage its absolutely a workable answer and a compliant answer, but there are things that appear to be equally compliant and a heck of a lot less expensive. And it's on the horns of that dilemma that we find ourselves. We think there's a way to satisfy both and that is what we are really trying to achieve.

Commissioner Van Vliet: What was Congress' response to the expense of this program?

Mark Evans: Mr. Bacon would probably be the best one to address that.

Mr. Bacon: Obviously Congress in each year as the appropriations passed, expressed concern for the high cost of the program, it is a 15 billion dollar program, about 12.3 of which is for our chemical weapons stockpiles at the eight states, at the eight sites in the United States and the one on Johnston Island. The other parts are what we call non-stockpile in which we remove the binaries, the binary weapons, out of Umatilla and other former production facilities, etc., and the other component is the CSEPP Program, the emergency preparedness managed jointly by the Army and Federal Emergency Administration.

The short answer is, Congress is concerned about the high cost of the program, and in fact the language for this year, the '00 bill, asks, directs us to evaluate alternatives, methods, shouldn't use the word alternatives that's not in their language, but evaluate ways to reduce the

cost of the program and be more cost effective. So we are continually undergoing that rationale in doing that and now we have a report that will be due to Congress next March, March 2000, addressing the very point you asked.

Stephanie Hallock: Madame Chair, may I ask a question? I would be curious to know the kinds of conversations that you had in Utah when you decided not to use the DUN at Tooele and also the kinds of conversations that are going on at Anniston and Pine Bluff and sort of where those conversations are?

Mark Evans: Sure. The decision not to use the DUN in Utah, it really didn't even require a permit modification at this stage of given the interpretations of our disposal options under the existing permit language, we did talk repeatedly with the State about what we were or weren't doing with wood, PPE, things of this type. Utah is a unique location as well because of the location of CAMDS, which is our pilot facility where we can test things so when we put the thermal destruction system, the autoclave next generation, for protective clothing in there, they permitted that, they recognized that this will have potential long-term benefits with them for coming up with a method.

It really is always an issue of what is the best economic decision given the disposal restrictions and requirements in each particular state. In Alabama and Arkansas we are going to be doing something very similar to what we are doing here, which is saying, here's what the choices are that we really are faced with. We are absolutely committed, if the sentiment is to move forward with the DUN, we'll install the DUN. We do think there are ways to save money and achieve the same end state that we think are legitimate and it's a legitimate point of discourse, but it's very early in that discussion process.

Commissioner Whipple: Mine's going to be simple. I guess one of the things that's kind of sticking in my mind, is, we're talking about the Dunnage Incinerator, which I think is one of five furnaces that would be at Umatilla, and now we are looking at doing something so we don't have to install the fifth one. But in your discussion of what those technologies may be it sounds like really they're not truly the alternative as we have come to understand alternative technologies in this arena. So now we are thinking, well, essentially let's just burn what we have in one of our

existing incinerators. That does not strike me as a particularly creative solution at this stage in the game. Why are we so slow to come around to say, gosh why don't we just burn it up in something we already have?

Mark Evans: The process, actually, the burning part of it isn't the complexity that we are going to deal with, it's putting the carbon into a form that combusts the way we'd like it to. There's a micronizer, it's a mill, for lack of a better term, that grinds it, to deliver the particle size that we are talking about using in this system. At this stage of our maturity of our lifecycle, we keep abreast of what is going on in our, I'll put it in quotes, more "creative" world of alternatives. But to truly achieve—when we have a system that we know is totally environmentally compliant now, designed now, I am not necessarily in the market for creativity per se, I mean, I can implement what I have, unless there is another advantage to the process. Is it safer, is it more compliant, is it substantially less money while being as safe as well as environmentally compliant and that is what you are watching us go through is that kind of thought process.

The advantage of using one of the existing incinerator systems, is that it may not be creative technologically, but if you look at where the program was eight years ago when we proposed the DUN and where we are today, it is from a waste management perspective, different than that which we originally thought. Trying to capitalize on the fact these systems may have capabilities that we had not originally intended before. I tend to think that this demonstrates a degree of management creativity as opposed to technological creativity. We do keep abreast though, we do, we pay attention and I'm sure if something was suddenly to emerge that was, that met, the same degree of standards and could demonstrate a return on capital of this way, I'm sure we would want to talk about it, but given the key word in the State of Oregon is demonstration.

The unit at JACADS has not been demonstrated with surrogate waste, it's a [unintelligible] waste, the same contamination levels we have here in the same kind of plant we have here. It's going to create an unparalleled opportunity for direct extrapolation here. It really gives us a good opportunity to shake it down so that what gets put here, whatever it might be, the DUN, be it something else, is a truly demonstrated unit on the actual waste that we process.

Stephanie Hallock: Madam Chair, may I ask another question? Is there any relationship between the discussion that we are going to have this afternoon on carbon filters and the decision that you might make with regard to the DUN and disposal of waste?

Mark Evans: Let me answer that very directly. No, and here's why. The Pollution Abatement System Filtration System is an additional environmental or safety safeguard added into the system. We talk much differently when we talk about maximum protection when we are talking about systems which were installed primarily from that perspective as opposed to something like this. This discussion is really a business discussion as to what's the best business answer to meet the same set of standards. That discussion's going to have a much different flavor.

Commissioner Eden: But wouldn't the carbon filters left over from a Carbon Filter Pollution Abatement added onto the end of the abatement system be disposed of in a Dunnage incinerator?

Mark Evans: Or an alternative, absolutely.

Commissioner Eden: I'd like to follow up on the cost issue. I am having trouble understanding why it would cost $30 million if you already have a Dunnage Incinerator or two sitting around some place, I understand there are costs associated with installation and operation, but we're not talking about $30 million if you've got one you are not using some place else.

Mark Evans: For instance the Pollution Abatement Filtration System, the PAS filters which we're talking about, are not procured, that's not a sunk cost we've made yet. The pollution abatement system itself, the quench tower, the baghouse has not been procured yet. So we still have all those capital investments, we have the modifications to the Dunnage incinerator, which we will make to allow it to be optimally reconfigured between the multiple modes that it has. Before we are finished we are going to spend some serious money on that particular unit.

Also given the way that the DUN is integrated into the facility we have a relatively big testing program we do to test all of those integration points before we are finished we are probably looking $30 million. We are pretty confident on that number. At one site the number

might $26 million because of the capital cost of DUN itself is about 4 million, so one site may be at 26 million dollar number, that would be Anniston, Umatilla or Pine—

Commissioner Eden: That was the answer to my question. What was the capital cost of the—

Mark Evans: —of the unit just in and of itself.

Commissioner Whipple: If I can step in here for just a minute and ask—we're not ready to stop this conversation, but I think about a seven minute break is in order, so we'll re-convene here about 11:05.

[Break]

Commissioner Whipple: Good morning, I'll think we'll reconvene here. We'd like to spend a bit more time with questions for the folks on the panel, including our department staff. Unless someone else has a burning question, I'd like to ask a couple of questions of Wayne. Where do we go from here? I mean, I think there's a clearly, I sense there are a lot more technical questions that the Commission would like to ask these folks while they're in front of us, and we certainly will. I wonder if you could give us a flavor, procedurally, for where we are. I mean, we don't have any specific request in front of us at the moment, so—

Wayne Thomas: That's correct Madame Chair. As I interpret what the Army is proposing today, this is a concept that they would like the Department and the Commission to consider. Prior to them developing a permit modification. A permit modification is the instrument that the Department and Commission will act upon to make a decision. At this point, I think the proposal needs considerable review by staff. There are many questions that are unanswered from our perspective. One thing that I noticed in the tiered approach that was laid out is all based on the submittal of items, not approval of items, by the Department, that has significant impact on schedule and the Commission's involvement with those Class 3 Permit Modifications that would be necessary.

My recommendation, if I can make one at this time, I think that we need to meet with the Army and their representatives and explore what they have presented here in more detail and try to fill in some of the blanks. There are a lot of questions that I think need to be asked yet. At this point it is very preliminary for us to make a recommendation either way on whether this is an [unintelligible] approach that we would [unintelligible].

Commissioner Whipple: Thanks. How about any more comments from Commission members?

Commissioner Van Vliet: Yes. I was interested just from the standpoint of having worked in wood, huge piles of materials we are worrying about spontaneous combustion. You get 782 tons of carbon filters piled up, is there any indication, or any study at all, of spontaneous combustion in those kind of piles?

Loren Sharp: What we have experienced on JACADS, and I believe we would see the same thing here, when you take these charcoal trays out of the filter units they're about double their weight in humidity that's been absorbed on them. I would expect the same type of thing, so we end up with essentially two trays and a 110-gallon drum with both trays being double-wrapped in plastic and the barrel is also double-wrapped. We have stored about 127,000 pound on the island, with no problems at all that have developed. That's the best answer from the JACADS experience

Commissioner Van Vliet: The reason I ask, my experience with wood chip piles is with high moisture content is you get spontaneous combustion on it and why wouldn't that also be true in some of your carbon?

Mark Evans: I can tell you sir that we have looked at that as part of risk bounding, to see how this material would behave over a long period of time, we are talking about several years of storage. So far there is no data to indicate that this particular waste, given its characteristics, would actually demonstrate that. You're right, we looked at mulching, things of that type, absolutely, particularly underneath where there is an oxygen-deprived environment and then you

suddenly get oxygen introduced, there is some history with that, but this particular waste stream, given what we understand of its characteristics our assessment would not indicate that that has a likelihood of occurrence.

Commissioner Eden: Madame Chair? Now, are we just talking about the 782 tons that would be stored? That's the carbon filters from the ventilation system, right?

Mark Evans: That is all part of the filtration, to include the PFS units themselves as well, the carbon from that, so it's not just the building ventilation system.

Commissioner Eden: And what are you going to do with it on JACADS after you figure our exactly what you are going to do, you are going to do something with it?

Mark Evans: Sure, right now we have something called the micronizing burner, that's what you see is the "CMS," it's a Carbon Micronization System. Micronization is the process that is up front of the burner, it's what actually takes the charcoal—we use a coconut charcoal mix—to pulverize it to the size that we want, introduce it with JP5, which is the fuel of choice on Johnston Atoll, given what we have available on the Island, and burn it in the rotary kiln, the DFS. That's what we are proposing to go forward with as part of our closure initiatives on JI, Johnston Island.

I Just want to note that that is one of the best, the primary concept that is under exploration for carbon disposal. We would pursue that while maintaining the DUN on hold. That's why, if you'll notice, the tiered structure, at any one moment of those tiers, the DUN can emerge as the answer, in which case we do not have to proceed any further. Once we're going to make that capital investment, we're going to make that capital investment, and that's why if you notice, the topic of most folk's interest is the DUN, and we've come here to talk about secondary waste and the tier is actually laid out to go down each secondary waste type and at any one of those tiers the DUN could emerge as the answer. I don't consider it necessarily to be highly likely but its certainly is possible that it could. But that's what we're talking about doing at J.I.

Commissioner Eden: Now, is the only reason you don't like the DUN is because of the expense?

Mark Evans: Yes, $30 million, when we have alternatives that are sitting at half that dollar figure, that's real money.

Commissioner Eden: Thank you.

Mark Evans: You're welcome.

Commissioner Van Vliet: Coming back, you are still talking about incineration no matter what whether you use a new technique, why was not the rotary kiln approach looked at originally if it was a much better approach today, because that's not exactly new technology—

Mark Evans: —No it is not

Commissioner Van Vliet: —so when you are looking at this, is any of the DUN incinerators worked at all, have they been in operation, do you have any running data on any of the DUNs?

Mark Evans: Yes, we operated the Dunnage Incinerator at Johnston Atoll, disposing of wood. We never put it into its exclusive charcoal mode, we put it into a co-processing configuration, that's relatively different. That's given us some good insights to what we would do differently as we would go forward to implement it here. We also did some preliminary testing to show out some of the modifications had worked at Tooele prior to us looking at the dollars are not supporting us doing this, there are cheaper alternatives for us to do here. But, I want to come back to your primary point. This is still incineration, this is not something other than that. It is using the deactivation furnace system.

Now the reason we did not jump on it earlier was the dollars were against it in terms of where we could house the unit, the micronizing unit. In fact the cost estimate used to be about twice that which it is today and then the JACADS team came up with an innovative location. If you do it during closure you can put the unit in a place where we can't put it if we do it co-

processing or processing as we generate it, quote unquote. That reduced the cost by half and suddenly there emerged this a very attractive option, and that's what's changed over time. The original concept of where we would house would be very expensive. Housing it elsewhere in the facility drops the cost substantially.

Stephanie Hallock: Madame Chair, may I ask a question? If you haven't taken operation of the Dunnage Incinerator through all of its paces that it designed to do, then how come you are able to conclude at this point, given sort of the unproven nature of some of the other things that you are trying, that a) one is going to work as well as the other and b) that you are really going to save all that amount of money?

Mark Evans: Well, the dollar savings—the alternatives are going to be relatively well tested on the specific waste streams that they have to do. So that part of the projection we are relatively comfortable with. The wild card in the DUN cost is how much money from the equipment enhancement and modification there is, if you look at that $30 million there is a placeholder in there for that kind of work. We need to recognize though—the DUN—while we did not put the JACADS DUN in its final ultimate charcoal configuration, that configuration was actually the configuration tested at out CAMDS facility which exclusively had a charcoal configuration. So we had that test data to draw on, we had the JACADS test data to draw on, so we are fairly comfortable we can extrapolate relatively accurately for that.

Commissioner Whipple: But the DUN at Tooele is also not doing anything?

Mark Evans: The DUN at Tooele is—no, it is not.

Commissioner Reeve: At the risk of asking the same, question again, why wouldn't the economics at Tooele work in favor of just using what's in place. I mean, I understand the need to analyze other types of processes to some extent, sort of with CAMDS here, you are looking at alternatives for secondary waste treatment, but at Tooele you've got the system in place but it's not being used and it makes me ask again why isn't not being used, why couldn't it be used?

Mark Evans: Sure, when we look at the process we would want to move forward with the modifications with DUN—let's look at the waste streams in pieces. The DUN's multiple waste streams. We don't have the need to process hardly any wood, which is the primary design function, remember I talked about multiple waste streams and what paces the design of the DUN? Wood in many cases is the extreme design case, so it's what paces the design of the DUN; we have virtually no wood that we would need to process there.

Commissioner Eden: Wait a sec. Can I interrupt you there? Isn't there a discussion between you and the DEQ about how much wood there actually would be here?

Mark Evans: It's a permit issue. There will be discussion and dialogue here as to making sure we have common understanding as to the permit requirements as it relates to wood. I am sure that process will continue and it will probably be—as you saw in Tier 1 there is a discussion of a waste analysis and characterization. That's part of what we'll talk about which is why you'll notice we drove all of the—that's a bad word, the issues of potential controversy we put into phased tier one. As you move to the right, you start to move into more technical issues on the tiered schedule. The issue's making sure we have a common understanding of what will and won't be the wood requirement is something we will have to resolve.

The way the laws and regulations are interpreted in Utah we have very little wood that we have to process in a hazardous waste incinerator. Most of it's not hazardous waste so we can do other things with it, and we do. So we take one waste stream, we take it out, now we go get the PPE suits we made a program decision, notice we do not specify in the permit application here that we were going to put those in the DUN, it was listed as an option we could consider as we move forward. So by definition now I have the thermal destruct system that we are going to try to move forward there.

So now, I get down to what is the best answer exclusively for charcoal. And now that is the issue we talk about at Tooele, we believe that the micronizing burner is a good answer for Utah. We believe the burner itself is not that capital expensive. We're also considering a concept, following up on a question I think you asked, about equipment sharing. I happen to be a big believer in equipment sharing particularly certain types of items. That maybe these micronizers can go from site to site when they are done. If we look at the time lines, Tooele's

micronizer could very easily end up somewhere else, assuming that we can show that it is agent-free for shipment. So when you look at that whole package there is some benefits to us moving forward with this kind of integrated approach and that's what is driving the value decision.

Commissioner Reeve: Speaking of time lines, is there a risk or a likelihood that operations at the Umatilla Facility would be extended as a result of going through this process?

Mark Evans: Let's break that into two pieces if I could sir. The destruction of the stockpile itself, no.

Commissioner Reeve: Right.

Mark Evans: Unless a decision is made that requires the unit to be installed and tested prior to commencement of that destruction operation. Assuming that that is not the case the issue would be the duration of closure. That falls under my area of responsibility. We are really looking at the lessons from JACADS as to what becomes the pacing issue during closure, what really drives the duration of closure at JACADS. Is it charcoal disposal? Right now the answer to that is no.

The pacing item's actually our ability to how many toxic entries we can make into the facility in a certain unit of time. That's actually now the pacing item for the closure of the facility itself, so we do track that and we absolutely do track the economics of that as well and what emerges that make sense. If somehow we have magic breakthrough, which I do not anticipate, in terms of toxic area efficiency of entry, perhaps we would come back to it. But if we did we have the option in place today, it's the DUN. And then we would say now at this stage, the life cycle costs now tells us to go to the DUN. Today the life cycle cost don't tell me to go with the DUN.

Commissioner Reeve: Can I re-ask the question though, just in terms of your current estimate. I know that a decision hasn't been made in terms of a possible change to dealing with secondary waste, but if a decision were made in the future, a different system for dealing with secondary waste, not the DUN, is there the possibility or likelihood that closure activities would go on longer then they're contemplated now?

Mark Evans: I don't think that that's likely, again I don't think that this will become the pacing item for closure. But something—it's a point that we all have to keep in our heads that we have a lifecycle program, Mr. Bacon's very clear in communicating to us, it's just not cost savings in '00 and '01, it's across that entire lifecycle in managing that entire equation. So believe me, the questions you're asking are the right questions, and the question that Mr. Bacon asks us all the time, make sure we don't make a good capital decision in '00 that costs us in '02 and '03. Today, when we look at the DUN, the answer is no. JACADS is also going to give us a magnificent opportunity to know what it really takes to close one of these facilities and it's going to be a very educational process as we figure out exactly what—when you go from closure, from a concept, to a tangible fielded operation we're going to learn some interesting things.

Commissioner Reeve: At Umatilla, could the—I understand the DUN has not been procured, could the DUN be procured and in place in time to meet the start of operations?

Mark Evans: We would probably use the DUN from another location, that would be our short-term answer. Whether or not we would—if we want to install the modifications that I believe would be prudent to do, not from a safety perspective, but in terms of process throughput and efficacy, it's going to be very challenging to do. And when someone like me says very challenging, I hope you understand what that means. I can't tell you it's outside the realm of possibility, I consider it unlikely.

Commissioner Reeve: These would be modifications to the DUN itself?

Mark Evans: Yes, to help increase its throughput rate or it becomes even a worst investment. You know, all I have talked about so far is investment cost, the alternatives also look like they will save us over the lifecycle, $4 million in operating cost. And that assumes the modifications I am talking about making, if I don't make those modifications it's going to be more expensive for us to operate.

Commissioner Reeve: So the throughput, in terms of the DUN as it's currently designed, is not what you would like to see?

Mark Evans: No, it is not.

Commissioner Reeve: And you are talking about modifications that would basically increase the throughput of it?

Mark Evans: Yes it would, even though the issue that we are really dealing with is the throughout rate, not its instantaneous rate of production. The permit mod—let me give you an example. Charcoal here is permitted, I believe it's 368 pounds an hour. The DUN will do 368 pounds an hour. The question is going to be, over the lifecycle, the way the DUN operates at JACADS we had periods when we shut it down to extricate the ash manually. That's time that the DUN is not available to be processing, because we have to cool it down, go in, do that, bring it back up to temperature. Therefore, [unintelligible] I'm really not talking about its ability to do in any one hour, I am talking about its ability to do something over a relatively longer period of time. There are things I would want do so that I would want to be able to capture those windows of time, because this facility is going to cost $350,000 a day to operate, and those days add up.

Commissioner McMahon: A question on that, if you've got modifications in mind, assuming that the DUN goes in, do those require permit modifications as well?

Mark Evans: We've looked at those and I believe the answer is yes.

Commissioner McMahon: Would they be minor, major, what?

Wayne Thomas: Those changes would probably not come to the Commission for review, the Department would look at those.

Commissioner Van Vliet: The DUN incinerator, use of words, is attached to Dunnage, but if you process that wood or whatever stream of material you have to go through, really any kind of

incineration project could be determined and be called the Dunnage Incinerator, right? And take care of the carbon too?

Mark Evans: Yes.

Commissioner Van Vliet: So why the big change on why the worry about what you put in as long as it works. If you put in a rotary kiln type thing and call it a Dunnage Incinerator, all right. Now I come to my next question. Having been in the legislative process, I am not internally confident that Congress is going to somewhere along the line squeeze down some more on this particular project. If we don't have something in place, do we end up with 782 tons of material out there that become the responsibility of Oregon to get rid of, and in a sense create another hazardous waste situation? If they don't fund you in the year '01, '02 or '03?

James Bacon: That's a good question sir, but the mandate Congress also give us is the closure of facility, the disposal of all chemical agents and related material, i.e., secondary waste, closure of the facility in accordance with permit requirements. And in this case, complete elimination of the equipment and even of the main de-mil building here in Umatilla, in other words, no waste left. We will have to certainly make sure that we meet that mandate [unintelligible] and it's our challenge to make sure that Congress understands that each year as we justify the budget.

Commissioner Van Vliet: Your key word is "understands."

James Bacon: Yes sir.

Commissioner Van Vliet: And the second thing is, as an old budgeter I know that you can leave a lot of things on the book as mandates, but you just don't fund them.

James Bacon: I hear what you're saying. I've heard that term, unfunded mandates, but I'm not sure I know what that means.

Commissioner Van Vliet: I've become aware of those over 20 years of legislative work, but that's what worries me is basically, it should be on track and we hope that Congress understands the gravity of it, but I am not confident that Congress always does. If you don't have some kind of Dunnage facility that will take care of the carbon on-site as part this contractual agreement right now, and there is a withdrawal of funds and you don't get to move around one of those Dunnage Incinerators that you want to move around.

Mark Evans: Let me offer a thought for your consideration.

Commissioner Van Vliet: O.K.

Mark Evans: Part of what we try to do is to give ourselves flexibility. The thermal destruction system that is designed for JACADS is mobile. It's mobile with intent. I am not saying that is the best answer for Oregon, maybe the best answer would be to fit it into the facility itself in a fixed structure, but to give ourselves flexibility it is mobile. We have also looked at the ability of taking the micronizing mill—the only issue that would be totally unique to Umatilla would be the burner, because remember I said JACADS uses JP5, and here we use natural gas. So the burner itself, which is a little less than a million-dollar unit, just the burner, is the issue of capital that really shifts.

If somehow—I don't envision that that would occur, but the right answer may not necessarily still be spending the $30 million for the DUN, but it may be tying into making sure that we have equipment that we can relocate if that does turn out to be the most cost effective answer. I believe, like Mr. Bacon says that we will have the funding necessary to implement this. However, I just offer that for your consideration, that we have things of that type that we try to give ourselves flexibility, in case something that we don't foresee should emerge.

Commissioner Van Vliet: After you are done using such a mobile unit, is there any contamination in that unit left residual?

Mark Evans: We will prove the answer to that is no. I can tell you as an engineer who has looked at the system and its test data to date, I am confident that the answer will be no. But the

Oregon way is to "show me," and I have to run the unit to show you and that's what we are planning on doing. And if we look at the test program we're going to lay out at JI that's part of what they need to demonstrate. The unit is going to have reach that stage because we have to RCRA close it, so its going to have to achieve an agent-free status anyway. The question is, can I do so in a non-destructive way, right, so we can use it again. That's part of what we have to demonstrate.

Commissioner Van Vliet: Well, as you well know, as you start to transport those type of units through States, it becomes quite a degree of gastric juices arising in people's stomachs.

Mark Evans: Absolutely sir.

Commissioner Van Vliet: O.K.

Wayne Thomas: If I could add a comment? The Department was really concerned about this issue and we sent a letter to the Army back in early part of this year. With the pending closure of JACADS we did not want to have equipment magically appear at Umatilla, as a way to close JACADS, that has not gone through a rigorous decontamination process. It would be certified prior to shipment that it had done so. So the Army is very well aware of the requirements that we have in terms of equipment coming from other sites.

Commissioner Whipple: I have a question about—you know, trying to go back and thinking how we got started in all this anyway, in thinking about—of course, the driver being the greatest risk was storage and so one of things I am struggling with and even based on your testimony here today, I haven't heard anything here to alleviate that is that you are talking about things that maybe you are on the closure end, my concern and I think one of the drivers here is in fact on the beginning side of this equation. And I would have to say that it's going to be a very hard sell to me for anything that slows that down. And, frankly I don't think its unreasonable, I still don't think it's an unreasonable request from the State to say "We want the entire process operational before it starts."

So the work, certainly at least part of the work that needs to go on between the Department staff now and you folks, at least for me, is to answer that question. Balancing out what you see as the mature life—you used a phase, obviously I'm not an engineer, but it made sense—mature lifecycle. You're looking at the overall cost, and I understand that, and believe me, I don't want this to cost any more than it should either. But I think you need to understand that in a perfect world, I want to know that that lifecycle is operational from the get-go, and I don't know that I'm willing to tinker with it a lot.

Mark Evans: Let me just offer one thing for a thought as we move forward to work with the DEQ. and that's this. The only waste we can process as we go, that we are talking about changing, that is probably PPE, and that is only for the first campaign. Charcoal is never processed as you go anyway. And that's part of what we need to work out. What really is the tangible change that we are talking about doing, and it really ties to that 390 tons, that's the tangible difference between the two approaches.

Commissioner Whipple: Yes, but to me, the difference is—I mean understanding that maybe necessarily it wasn't going to be processed as we go along, but it was going to be clearly in place how it was going to be processed when we got to the right place to process it. And what I hear us doing now is tinkering with that and it makes me very nervous.

Commissioner Eden: Another way to put that, if I may Madame Chair, is why should the people of Umatilla and Hermiston accept this proposal? What's in it for them? And what's in it for us as so-called representatives of human health and environment in this State? It saves you money and everybody gets a federal tax bite out of their pay, but how do you sell this to Hermiston and Umatilla?

Mark Evans: Let me go through what I believe are the advantages of what we are articulating. Number one, it is as environmentally sound as what we originally proposed so there is no degradation in environmental protection or in worker or public safety, that's a major issue. So those issues are not the determinative issues you are talking about. Two, it is substantially less expensive and that is not just an issue to the Federal Government that tax dollar comes from

those folk as well as the people in this room, too. If you look at this upon multiple sites, you are talking, what eleven, fifteen, million dollars, three sites, forty-five to sixty million dollars.

Next, you also have that it is going to be, it will ensure that the best incineration technology that we know is being applied, if the data from JACADS indicates that it has advantages, then we'll implement it. If it doesn't, we will implement the Dunnage Incinerator, but whatever we emerge will be the most demonstrated acceptable method.

One of the issues that you often get asked is, what if something better comes up tomorrow? I don't want to get into pie in the sky of what other people [unintelligible] alternatives, but we know that were going to be testing something in one of our other facilities. It seems to me legitimate to say to the people of Hermiston, if that does turn out to be the best answer we want to be in a position to put that answer here. And that is all we are truly saying today, we want to be in the position to do. If it does not turn out to be the best answer then we're in the position to put the DUN in and use it as the best answer.

That is the answer we have, we understand that many folks, when if comes to a maximum protection program, cost is not the determinative factor. We're not saying it should be, but given all else being equal, it should have a place at the table to be discussed, and that's the position we find ourselves in.

Commissioner McMahon: Madame Chair? I think you just said, sort of, what's on my mind in some ways, but maybe not quite as you meant it. For me, if cost is the only thing we are talking about here, I am not inclined to have the Department tinker too much. If there are other factors that have to do with safety and efficiency in the process way, then I am a little more open, but if it's just cost we're talking about, with an issue of this volatility, I am just not inclined to be real convinced. So I think that that's sort of my advice to you as you work with the Department. You are going to have to do more than cost on this issue from my point of view.

Commissioner Reeve: Madame Chair? Just a few observations. Obviously we're making a decision here and I think it's been very helpful and informative to listen to the proposal and I'm sure the Department and the Army will be talking and working this through. But just a few observations to help guide you, you probably want to know where we're coming from, too.

Where I'm coming from, at least in terms of what I've heard so far, is that I have sort of three main things that I'd like you to take with you as you talk to the DEQ.

The first is an issue that staff has raised, and I think its shared by us on the Commission and that is a sensitivity to the issue of legacy waste or the fact of allowing the secondary waste to be treated and processed "to be determined in the future," we are particularly prickly about "to be determined in the future" of legacy waste issue. So, recognize that that sensitivity is one that is fairly widely shared, and shared by myself as well.

The second point I'd like you to consider and think about is the risk of any of these activities or the risk of talking about or moving down the road to, what would be a Class 3 modification or a significant modification to the Permit as itself posing a risk. Now , usually when we talk about risk we are talking about human health and safety and the Environment. Well, I see a sort of a secondary risk in terms of Department decisions, Environmental Quality Commission decisions, being subject to other actors; and I am specifically talking about judicial review.

Judicial review is itself a risk. That is, our decisions, the Department's decisions, even if they go through public involvement processes; even if they are made in good faith based on the best science available, they are subject to challenge. Any process that sort of re-opens decisions and allows additional challenges, is something that carries risk, and if there is any possibility that that would, that those challenges would delay the start date for processing materials, that comes back to affect the risk to human health, obviously because storage itself is a risk. We are trying to get these materials treated as quickly as we can.

I know you have that in mind already, but its something again that I am sensitive too. Perhaps, my day job as a lawyer gets me more sensitive to that and the fact that judicial process is not a speedy one either. Finally I hope that you will review and take to heart some of the comments that are contained and what we will talk about this afternoon and that is the NRC Report on carbon filtration concerning the change management process, the CMP. The report is relatively critical of the Army, at least at some other sites, in terms of how that CMP was implemented, the commitment of the Army to really following it, and I think that if you will take that to heart, recognize those criticisms are out there and that it's a respected body that's making them, I think that will serve you well in terms of going through the process with DEQ, and with the citizens surrounding the Umatilla facility.

Mark Evans: Part of my job is to serve as the liaison between the Army and the National Research Council, it's one of the highest pleasures and honors that I have in my job. And we do take very close to heart their comments on the Change Management Process. Part of what drives the tiered schedule to be longer than some may like, is the need to put the time in to correctly and adequately engage the public stakeholders in the decision process. The engineers among us will get frustrated because that adds time to the process, but that is kind of what drives some of the schedule durations that you've seen, and [unintelligible] we've discussed them before, so I think it is a very good note to make and I can tell you we have every intention of following through on the commitments we have made relative to change management.

Stephanie Hallock: Madame Chair, can I add one thing?

Commissioner Whipple: Sure.

Stephanie Hallock: I just wanted to gently take issue or bring to your attention with one thing you said about—in response to the cost questions, that all else is equal. I don't think that, just based on the discussion today, that I certainly feel that I understand the alternative that you would be proposing and that it is in fact equal in terms of protection of human health and the environment, and if you do decide to have a Class 3 Permit Modification proposal or some further discussion with the Commission about it, I think that we're going to need a lot more information rather than you just assuring us that it is equal.

Mark Evans: Oh, absolutely, and we've talked about having a bounding estimate on the risk issue which is why I can say today these things appear to be equal, and the need to get demonstrated data to back up whether the bounding things we put in—bounding estimates by definition have a degree of engineering assumption. I would prefer less engineering assumption, more demonstrated data, to support the position that it takes, but I totally agree with you. Watch our change management process, the first tier it has to clear is the risk tier before we even talk about it from any other perspectives. I agree with you that that burden has yet to be satisfied, it's early in that process, we would have to satisfy that burden prior to us even moving forward.

Commissioner Whipple: Thank you. We're actually, by the clock on the wall, we're along toward quarter to twelve. We probably haven't asked all the questions we'd like to yet, but I think, my question to Department staff would be—you certainly have some sense, I think, of some specific questions relative to the Commission, and what staff responsibilities are, you know well. Do you have enough information to review this and then prepare to reply to us, I guess, or to address a reply to the Commission?

Wayne Thomas: Madame Chair, I think we have enough comments from the Commissioners to enter into a dialogue with the Army on this issue and to report back to you at a future meeting where the Department stands on this question. We will begin that immediately

Commissioner Whipple: Thank you all very much for being here.

[Commissioner Whipple offers a opportunity to County Commissioners Doherty and Brosnan to make comments to the Commission. They both decline to comment at this time. The Commission then took a lunch break.]

Commissioner Whipple: Now we're going to re-convene. We'd like to hear now from the group representing G.A.S.P., so if you would introduce yourselves, we'll continue on.

Karyn Jones: My name is Karyn Jones and I am here representing G.A.S.P. With me here is Professor Tom Stibolt, and Richard Condit, our legal counsel, and Mick Harrison, another attorney of ours, will be joining us by speaker phone. I want to re-iterate that we are here today because of our concerns over human health, worker safety, and the environment. With that, I would like to turn this over to Tom, and he'll be followed by Richard and Mick.

Thomas Stibolt: Thank you Karyn. I am Doctor Tom Stibolt, I'm a pulmonary and critical care physician here in Portland. I actually have an interest in incineration that goes back about 12 years at this point. I was part of the original Metro task force that was looking at municipal incineration when Metro was considering putting in a municipal solid waste incinerator in St.

Helens. I ended up trying to follow the area, as you know, a highly technical area and [unintelligible] there are a lot of things that we can use all the help we can get on.

My comments mostly have to do with the public involvement process, which I've found somewhat difficult with this particular issue. The original agenda is—we received in the mail said there was going to be no opportunity for comment at all, and then toward the end of last week in the Oregonian I discovered the opposition, whatever group that is, was going to be given an opportunity to speak. I don't feel I'm part of the opposition, I think I am in agreement with what this group is here for, which is to try to destroy these munitions as safely and effectively and as rapidly as we possibly can. Because I don't feel like there is any opposition to that, just questions of making sure the t's are crossed and the i's are dotted.

There have been a large number of groups that have provided comments to this process in the past, both people and groups. Dr. Trygve Steen from Portland State has been involved in that, because of the short notice wasn't able to be here, also a large number of groups including Citizens for Environmental Quality, the Oregon Chapter of the Physicians for Social Responsibility, Oregon Peace Works and other groups have actually been involved, and should be kept involved in this process, because this is a difficult decision you are making. It seems that we need all the help we can get, is not a problem, but is actually helpful.

I also just want to share with you, for twelve years in other venues I have made comments to DEQ on various permit processes and I'm always impressed that what I do sort of disappears into a black hole so I don't ever get any [unintelligible] read my comments, or paid any attention to them, certainly there's been no changes ever in any decisions that have been made based upon them, that I can see, where I notice that industry, the group that is supposed to be being regulated, if they have objections, those end up in large changes that are made in permit requirements [unintelligible] and I think it's something that DEQ and EQC really need to think hard about. And then just finally just point out that the issues brought out by the public over the years really do need to be addressed. There are a lot of comments that have been provided that I think were thoughtful comments about some very important issues that need to be really dealt with. [unintelligible] doesn't mean you stop anything, they really need to be looked at and incorporated if possible.

The two areas that I can think of off the top of my head are the whole risk of incineration that we've learned a lot about, air toxics, and various effects, other than cancer that they have, so

those need to be considered. How this device will operate during upset conditions, which are very difficult to measure is an important area, and to ask that you keep the door open to changes that come along as the process goes on. That just needs to be watched until the last of the munitions and all those other wastes generated [unintelligible]. Thank you.

Commissioner Whipple: Thank you.

Richard Condit: Good afternoon, my name is Richard Condit one of the attorneys that has been representing that opposition, along with Stuart Sugarman a local lawyer here, and my colleague on the telephone, Mick Harrison. We represent the Hermiston-based group G.A.S.P., the Oregon Wildlife Federation, the Sierra Club, and a number of individuals that live near, in close proximity to this proposed facility. I would like to acknowledge, given the short time we had to prepare for today's meeting, and with particular respect to receiving the report from the NRC, as you all did just a short time ago. I would like to acknowledge, with appreciation, the help of the Oregon CPR, G.A.S.P. folks, the Chemical Weapons Working Group, and other folks who have contributed to help us to quickly get a handle on understanding [unintelligible].

I'd like to start by addressing how we got here, and I think that's a significant issue because part of the problem is that this whole incineration process being proposed by the Army, seems to happening in a rather haphazard fashion from the point of view of those citizens who are concerned about health and safety. You all—some of you may not have been on the Commission at the time, but the EQC essentially approved a hazardous waste permit for this facility in February of 1997. G.A.S.P. and others then sought reconsideration of that decision in April of '97 and that reconsideration was denied shortly thereafter. We then petitioned for review in the local court here, in the Multnomah County Circuit Court, and that led us into a court process that you are undoubtedly very familiar with.

That court process resulted in a December 1998 decision indicating that the Court felt it did not have authority to second guess you all, given the authority that you have coming from the legislature, but it was concerned that it did not understand where you all stood on the question of carbon filters and their significance in the permitting decision. And so it sent the matter back to you for clarification on that matter, which you are undoubtedly aware of, as you subsequently put together a proposed [unintelligible] order that said although carbon filters weren't the be all

and end all of our decision making on allowing incineration to be chosen as the best available technology, they are simply an additional safety measure, and with that the Court recently concluded the proceedings thus far.

But before doing so, it did raise a concern and it was concerned about the fact that there is a lot of evidence accumulated, much of what we submitted, that is based on both new developments overall, and operational history, if you will, of the Utah facility in particular, that we have submitted to the Court and are trying to get the court to address as part of it's review process. And in concluding the proceeding the Court decided to get agreement form counsel for you all that we would have an opportunity to have those issues addressed for you, before the Court would consider them. And of course, one of those issues was carbon filters and whether they are reliable, and whether they were functioning, et cetera, et cetera. So that is how we got here.

We are still troubled by the idea that this Commission has, in the view of my clients, and the folks that I have been working with, and a number of the members from the public, flip-flopped considerably on its attention to carbon filters as being a key component of the incineration system. One only needs to look to the quotes of Henry Lorenzen through the record of previous proceedings of this Commission, to understand that at least from the person sitting in the audience perspective there was pretty much no doubt that carbon filters were the deciding factor, in the view of many in choosing incineration over possible alternatives.

That is a troubling issue which you may or may not decide to deal with. You certainly have provided a clarification, such as it is called, in terms of your new finding and order, indicating less significance of carbon filters. But you need to really understand that you labor under some criticism or concern by the public, given the record that existed before that new decision. I want to talk a little bit about the scope of my testimony today because we are here because the Commission invited us, and because the Commission is focused at the moment on carbon filters only. And although I will make references to some other issues that are very troubling in this incineration program that the Army has, I want you to understand that it is not my intent to have those issues aired here today.

We fully expect that we are going to get additional process to air those issues, as was part of the agreement that I think came out the conclusion of the recent Court process. So again, although my comments may focus on some other matters, I am solely addressing the carbon filter

issue for the purpose of the discussion today. Now, the intent of my testimony also needs to be discussed a little bit before we get into the specifics. The folks I represent and work with do not intend to suggest that the DEQ or EQC should reject carbon filter technology as a potentially meaningful method to reduce some of the risks of operating the incineration system.

My client's concerns are not a basis for refusing or failing to provide desperately needed safety systems for the proposed incinerator. However, you will see, based upon review of the evidence at the moment, that the Army does not have a proven carbon filter technology to bring to the facility. If a carbon filter technology is not deployed then some other technology or combination of technologies must be added to reduce or eliminate the impacts of emissions, accidents, malfunctions on public health and the environment. So, the reason I am telling you that is because I want you to understand that we are not opposed to additional safety measures.

We are opposed to being experimented on, that is not acceptable and that is the message we want you to take from the totality of the discussion today. Now, what is the regulatory posture of the carbon filter system in the Army's permit, this is a confusing question to us. Sitting in the back of the room today and listening to the NRC presentation and an earlier presentation, I thought to myself, wow, this is really interesting stuff, too bad it hadn't occurred four years ago. How is it that we are in the throws of construction and a significant percentage of construction being done, and we are still trying to figure out the design for a safety system. I don't understand that. How can that be?

Was the application that Army submitted to the EQC for the permit of this facility originally defective, so seriously defective that we're still talking about options and plans and what type of system and what type of carbon and what the configuration should be? All things that should be well under control by now. It should have been well under control at the time you approved this permit. So I find it very troubling from a regulatory perspective that we are here at this moment dealing with that issue. And, the same goes for the Dunnage issue. It is very interesting that the Army is wanting to reconsider its Dunnage options at this point and time.

Now, re-considerations in and of itself is not necessarily a bad thing if it's going in the right direction, but it's fascinating that this incineration technology has been painted for years as the mature and only technology capable of dealing with this problem and yet the history of it suggests quite to the contrary. Why do we have hundreds of permit modifications at the Utah facility if it's so damn mature? I don't understand. And you folks need to grapple with that

question and figure out where you stand on the maturity and capability of this technology and the continued changes that you are seeing throughout this process. It does not suggest maturity and strong development to me or to many members of the public who would be most affected by the operation of this facility.

And before I leave this area, the question that comes to me is why are we moving forward without a final design on carbon filters? I'm just at a loss, I don't understand this. Now I would like to turn my attention to the National Research Council report presentation and say at the outset, of course, as I mentioned earlier, that we have not had a great deal of time to review this, so our comments at the moment are preliminary, but there are a few, I think, large points that you could take notice of very early. One is, is that it appears that the primary function of the NRC report, which is essentially stated in the report, was to evaluate what the Army had done, really. It's not this far-reaching, independent, evaluative mechanism that's designed to look into all the corners of the literature on the technology of carbon filter beds, and things of that nature and give you some kind of independent analysis.

The NRC was provided lots of information from the Army and reviewed that information and probably looked at a little information on its own, but essentially the NRC is relying on the Army to inform it about the specifics of the carbon filter system that it is considering. So, don't walk away from this proceeding today, or walk away reading this report, thinking that "oh yes this is a wonderful, independent, thorough scientific examination of what the Army is offering. It is not.

Another, sort of, general criticism of the NRC report is that it relies on test burn results than on current operating realities. You've heard the discussion by the chair of the committee about the significance of the test burn results, regulatory concern, et cetera, et cetera, et cetera. What nobody is doing is adequately monitoring or obtaining information on how the facilities are actually operating and especially how are they operating when they have the major problems that they have?

And, one reason not to rely on the test burn results, for example, is that because of problems processing rockets at the Utah facility they have gone to a process where they chop some of the rocket, but instead of draining the agent out entirely, because the agent has congealed or gelled to some extent in the rocket they are burning that large piece of rocket and agent all at the same time. This of course is slowing down the process dramatically Now, when

we recently asked Army officials whether or not they did a test burn on what kinds of emissions and other things you get from changing the process of burning rockets and burning the way I just described, the indication was that there were no such test burn. But yet, Utah officials much to the dismay of the public there, have agreed that they can be allowed to do that. You should not be so easy, quite frankly.

The NRC expresses concerns about the alleged risk of the continued storage of chemical weapons and that seems to be, as I was sitting in the back of the room again, something that everyone seemed to agree on. Oh, we just have such significant risk if we continue to store the stuff, that we must rush ahead, we must burn this awful material. Well, that again does not consider the operational realities. The operational realities are that the risk, the primary driver, as I understand it, of the risk of storage is the storage of rockets. Now, if the Utah facility is bogged down in producing rockets and processing them quickly and for example, recent information that I've heard is that they are allowed to process up to 40 rockets an hour and they are presently processing about two rockets a day. That's a very big difference, because of the problems that they have.

So, are we going to, if I assume for a moment, if I agree with you and the Army for a moment, that there is this all-present, pressing risk of storage, from the continued storage of these rockets, am I gonna get there, am I gonna alleviate that risk, by doing two rockets a day? Your stockpile has 105,888 M-55 rockets. If only 10% of those rockets are a problem, like the problem rockets they have in Utah, that would be roughly 10,000, O.K.? If there are just 10,000 that are a problem, and you can only do 2 rockets a day, it will take 13-1/2 years just to do those 10,000.

Now, of course, which you're going to hear from the Army, that this is another lesson learned. By golly, we are learning all the time on this mature technology of course, we are learning all the time, and by the time it gets to your site in Oregon, it's going to be fine. You can't buy that. You can't possibly buy that. You should have proof that it's fine long before it gets here and long before they decide to operate it. At the moment if you look at the Utah facility as the example and if your concerned about rockets getting out of storage then you probably ought to be thinking about an alternative technology to deal with those rockets, because incineration isn't getting the job done in Utah at the moment.

The NRC report refers to theoretical design and configurations of a carbon filter system for the Umatilla facility instead of evaluating a firmly established design and process plan for carbon filters in Umatilla and this is, of course, not the NRC's fault, but they basically had to work with what they had and the Army again, does not have a permanent design, and I won't reiterate what I said earlier, but it seems at this stage of the process that that is a significant weakness and significant problem. Finally, in terms of the overview points let me say that the Army's credibility has seriously been damaged I think by this report. And I am going to read a passage to you, to tell you what I am talking about. If you look at page 47 of the report concerning the evaluation of major design changes. And I have to confess that I had to read this like eight times to make sure that I really [unintelligible] what this said. Let me see what you think.

It says on the bottom of the second column on page 47 it says [quoting] "the Army could consider installing the carbon filter units in accordance with current design and permitting requirements but not loading the filter elements. A PFS without the HEPA filters and activated carbon would be simply an elaborate piece of duct work that would minimize or eliminate the risks associated with operating the PFS, as well as the cost increases and schedule delays associated with removing the PFS." [end quote] Now, I can't believe somebody would write that down.

I can't believe that someone would suggest that it's a viable option that we build a PFS carbon filter system and not operate it because it's going to help us meet the cost, I mean, the scheduling issue. I can't believe that would even be suggested. And I hope that you will certainly not go along with a plan such as that. In the earlier part of today's presentations on the Dunnage, there was all this talk that we're concerned about cost, we're concerned about cost.

You know, to build some elaborate duct work would probably cost tens of millions of dollars and then not have it operate seems to rather fly in the face of being concerned about cost. Moreover, that statement is, from the NRC report, is such a cynical and manipulative statement that it's difficult to comprehend. I think it evidences, quite frankly, a desire by the Army to move mountains if necessary to simply have its agenda to continue, to have incineration continue at Umatilla and elsewhere. And I think that you ought to be wary, based on that statement, of what is to come down the road on this carbon filter issue.

That statement, combined with the evidence of the fluidity, if you will, of design and other important aspects of the carbon filter system at issue for Umatilla, suggests again to me that perhaps there was not an accurate statement made about carbon filters in the Army's original application. And perhaps there haven't been accurate statements made all along about the carbon filters, and I would strongly suggest to the Commission, and the DEQ for that matter, that they ought to go back and look carefully at what they were told and what they've been sold on this carbon filter issue.

And perhaps there are concerns about false statements being made by Army officials in the application to get this facility rolling. Those questions should be seriously examined, I am not saying that they're related, but I'm saying that the unusual nature of the fact that we're here, where we are today, however many percent construction complete and we're still trying to figure carbon filters, suggest to me that they never had a handle on this from the start. That's the overview of the NRC report.

Let me talk about a few specifics that we had time to pull out of the NRC report. The NRC does, to its credit, recognize and is somewhat troubled by, the fact that there are no final plans and that certain risk evaluations have not been completed, and things of that nature. So that is a good point. We are concerned when reviewing the report, with a question of whether or not the Army or the NRC provides evidence that carbon bed filters will reduce the potential dioxin and agent air pollution under normal, upset, and accident conditions. The NRC references and discussions of actual incinerators seem to be limited to carbon injection, which is a different design of the filter, of the filter mechanism or pollution control mechanism than a carbon bed filter. So we are concerned that there aren't a great deal of references in the NRC report to actual experiences with carbon bed filtration. That's something that the Commission and the DEQ staff should be looking into.

One other concern that we picked up in going through the report was that the NRC recommends that the carbon filter bed be bypassed in the case of upsets or accidents. Now, this appears to us to diminish the significance, or importance, or purpose of the filters. And if you have to bypass them when you are in a critical event, then one of the main functions of this additional protection we were hoping to have was, I think, to give us some additional security in the event of a critical event or a serious malfunction. If I'm reading it correctly, it seems to me

that the NRC report suggests that the carbon filter system may not be able to handle such an event.

You heard a little earlier about the use of coconut shell carbon beds, and it's unclear to us, in looking at the literature cited, that that would be, that that kind of carbon, would be the best kind of carbon for the carbon filter system. Many of the industrial, current industrial processes that have carbon bed filters use some kind of crushed coal or other type of carbon, and so you should look into that questions, staff should look into that question carefully as to what would be the best, if you go forward with this, what would be the best type of carbon to use.

We were a little concerned that the references used by the NRC to support the carbon filter bed technology were not necessarily as comprehensive as we hoped they would be, or perhaps as current as we hoped they would be. For instance, there is a reference to a 1994 presentation by Professor [unintelligible] about five-stage gas cleaning system as being state of the art technology in Europe, but that same researcher did a more current and peer-reviewed analysis of current technology in 1996, which I don't believe was referenced by the agency. It's a more current document.

In addition, to make the point again about kind of combing the landscape to understand what's possible in terms of pollution control and further protection. We didn't see any reference in the NRC report to current development of any disposal technology at the Department of Energy's Idaho National Energy Laboratory. There is a fair amount of literature and information out there right now about the Department of Energy's effort to deal with the very significant mixed low-level radioactive waste and hazardous waste, waste stream problem, and the information we've reviewed thus far indicates that they are looking at a thermal system with about eight steps in terms of pollution control in affecting the ability of the gases to be as clean as possible.

In addition, their target is to decrease the offgas pollutants to a factor of ten below the regulatory emission requirements. You've heard reference to meeting, or below, regulatory standards, they're specifically targeting to get a factor of ten below in that facility. So when we're thinking of state of art and we're thinking about the importance of the safety of the people living near this facility, we should perhaps be thinking more broadly and more creatively about what might be possible in terms of pollution control and protection [unintelligible] considered by the NRC report at this point.

Appendix F of the NRC report contains a description of, what the NRC even terms, as a briefly considered two alternative filter processes, carbon injection and catalytic oxidation. It's unclear to us from that analysis why one versus the other would be better. There doesn't appear to be a significant enough development of the information of the choice to be made in that Appendix, to go with one choice versus the other, and the staff, or the Commission should look more closely at that information in Appendix F.

Now, what's important about carbon filter system, if one can exist, or some other types of devices to enhance the safety and protection of the public, is that, as I mentioned earlier, we do have real world, not test burn, real world obtainables of the current operation of the Utah facility, for instance, that demonstrate to us that there are other protections that are needed to try to shore up the system. That, of course, also says to us that a technology other than incineration needs to be chosen. But we don't know that you are of a mind to consider that option. So if you are going to consider some additional protections, you need to think about a couple of issues. I mentioned earlier the great difficulty that the Utah facility is having in processing rockets.

In addition, there have been a number some stack alarms at the Utah facility that you may or may not be aware of. The stack alarms from the devices, that are supposed to be capable of detecting agent at fairly small quantities, that tell us that there is a danger, or a potential danger. Those alarms, as you probably realize are very significant not just for the immediate workers in the vicinity, but to trigger emergency response and other types of activities if necessary. What we are learning, in our view, about what's happening in TOCDF is that, the alarms themselves, or the devices that are used to trigger these alarms are—seemed to be inaccurate or seem to be unreliable from our point of view.

When we ask Army officials or contractor officials to explain that certain alarm, the explanation always is "it wasn't agent," and then when we ask "what was it?" the answer is "we don't know." And so what's happening in Utah is that there are significant quantities of some chemical going out the stack, which is claimed not to be agent, and perhaps is not agent, but that its toxicity, or the toxicity of a variety of chemicals if it's more than one, is not known, it is not assessed in the risk assessment, it is not being handled in the regulatory structure. You should not settle for that kind of ambiguity in the system that is going to be set up in Umatilla.

An example of that problem is a March 30, 1998 incident, which some of you may have heard of, maybe not, where during the course of processing MC-1 bombs, a bomb was allowed

to go into the metal parts furnace, that had not been completely drained. The device that was used to detect whether or not the bomb had been adequately drained was apparently malfunctioning and there were some bad decisions made by the operators, the people, that were in charge at the time, and the bomb went into the metal parts furnace. It had approximately 70-75 pounds of agent GB in it. Now, to put that in context, the metal parts furnace is only permitted to have very small quantity of agent in any of the metal parts that end up in that furnace.

So what happened was, immediately as the bomb began to be incinerated, there was a temperature excursion of great significance because the agent GB was acting as a fuel and so the temperatures got really hot, so there had to be a quench to cool it down. The duct from the metal parts furnace, that leads to the main stack, had an ACAMS unit in it, one of these units that supposedly detects agent, and it alarmed, and when it was read by one of technicians later on, it basically alarmed off the scale, it pinned the device in terms of how far, of how high it can read.

About seventy to eighty feet from that device are the stack ACAMS, which interestingly enough did not alarm. Now it's only because we have been engaged in litigation with the folks operating, with the Army and other folks operating the Utah facility, that we eventually learned that, interestingly enough, at the time that this event was occurring there was a technician involved in challenging or doing other things with some of the ACAMS alarms in the stack. So there's a question, a serious question, about whether or not those alarms where properly functioning.

Absent those alarms going off, the Army's response was is that no agent went out the stack. Despite the fact, that 70 or 80 feet away, they don't deny that agent was present in the duct work going to the stack. Now, one of the ACAMS alarms was determined to have been saturated by some chemical and didn't go off, for some reason that's unclear to us.

And so, you know, the problem with this incineration technology, and the problems that you are encountering as regulators, are that there are so many pieces of this that have to be done really perfectly, and frankly, aren't being done perfectly. That should cause you enough concern to be thinking about alternatives and thinking about other ways to treat this waste. Because I don't think we can rely on the fact that these devices are going to protect you, give you adequate warning of agent going out the stack, or other things. It just does not seem to be something that we've got the science to really [unintelligible] down well enough.

And so other means of dealing with disposal of agent, that are more closed, and don't involve stacks and things of that nature are probably really critical for you to consider, especially since we seem to still be in the design phase of this facility, given the status of carbon filters.

There are also at the Utah facility concerns about the waste stream, the characterization of the waste stream. There was arsenic for instance in some of the ton containers. There had to be all kinds of testing and re-testing done to determine whether it was just arsenic or whether there had actually been Lewisite, another type of agent, that wasn't supposed to be present in any of these tanks or containers. But in any case there is arsenic that they have to deal with, that they didn't know they had to deal with. So the question of the proper characterization of the wastestream and the materials in the munitions is an important issue for you to consider when you are considering safety systems like carbon filters or anything else or when you are more appropriately considering new technology.

The NRC mentions something that I hadn't seen before, or heard too much about, which I'm interested in and I think you and the DEQ staff should probably follow up on, which is this issue of frequent puffs. Puffs in my experience with other types of incinerators, occur when there is a pressure problem in the kiln, or the devices around the kiln, such that the gases have to escape so they escape through seams in the unit, things of that nature.

So, I'm not too sure exactly what they mean by puffs, I'm not sure what causes the puffs, whether there are pressure problems or other problems. I'm not sure how often they occur or if somebody has characterized what's in them to [unintelligible]. Do they have agent in them? Do they have just other types of contaminants like dioxin or the other things we're concerned about? I think you need to explore the question of puffs.

Let me conclude, before asking if my colleague Mick Harrison has any comments to add, a couple of request that we have of the Commission and or the DEQ staff and we ask you to very seriously consider these requests despite the obvious magnitude of them, or at least what you feel is the magnitude of them. We request that the DEQ revoke or suspend the current permit because a major component of the permitted facility, the carbon filter unit, is presently unproven and lacks the specifics in design and risk assessment necessary to meet regulatory standards. Moreover—

Commissioner Eden: Wait a minute, which component are you talking about?

Richard Condit: Sorry?

Commissioner Eden: Which component are you referring to?

Richard Condit: The carbon filter. Moreover, no substitute for the protection needed from some additional safety system, or systems, like the carbon filter system, has been offered by the Army. Second, request that the EQC in it's consideration of the carbon filter issue make a factual finding regarding the ability of the proposed or whatever proposed carbon filter system you see, to collect and retain chemical warfare agents. What's the ability of the carbon filter system to do that that you're ultimately presented with? Specifically, you must determine under what conditions of temperature and humidity will the carbon filters release the agent collected.

Because, we have a circumstance with carbon filters, yes, it's great, maybe you're collecting a lot of things. But there are certain conditions under which those materials collected on the carbon filters will be released. Accidents perhaps, or temperature excursions, or a variety of things. How is that going to be regulated, how carefully in control will that be? And again, in trying to get to the bottom of the carbon filter controversy we ask that the EQC request that the Army perform a mass balance analysis of the currently employed carbon filter technology used for cooling the air inside the facility buildings, commonly referred to as the HVAC, heating, ventilating and air conditioning carbon filters. The purpose of mass balance analysis would be to carefully monitor the amount of agent in the air flow before entering the carbon filters and then taking the carbon filters out of service to analyze how much of the agent was actually captured or other chemicals, for that matter.

The EQC must perform a careful review of the data provided for the mass balance analysis in order to determine whether or not the Army can really pull this off and whether or not the carbon filters will really be a valuable addition. And again I want to emphasize that, if carbon filters are decided not to be an appropriate technology, then the search should go if you are going to continue with incineration, to find other means of providing the additional protection necessary to deal with the real world problems that we are seeing in the operation of this facility in Utah.

Finally, to follow up on a comment that Tom made about public participation, or to add to it, I should say. We have recently reviewed the records available in Umatilla for this facility. And, despite my experience with hazardous waste, in particular chemical weapons facilities, I am not able to make heads nor tails out of the status of the permit, or the modifications of the permit. And so we request that the EQC or DEQ provide us as soon as possible with a current copy of the current permit and all approved modifications so that we can better understand just where this facility stands, not just with carbon filters, but with the rest of the process as well.

I appreciate the opportunity to have spoken to you today, I would be happy to address your questions if you have anything during the question session. We do have a few more minutes and I would like to ask my colleague Mick Harrison if he has anything to add.

Mick Harrison (via conference phone): Thank you Richard. Let me check to make sure the volume is O.K. Can the Commission hear me O.K.?

[Commissioners]: Yes.

Mick Harrison: Thank you. Just a few details that might be of some benefit to the Commission to follow up on what Richard has already stated. First of all in terms of the status of the decision process at this point, if the permit application initially submitted by the Army was incomplete in regards to the design of the carbon filter system for the stack, for the pollution abatement system then the Commission may have been without authority to act on such an incomplete application.

Had the clarification regarding Mr. Condit's comment, the lack of trial burn data regarding rockets that are unable to be drained, rockets full of agent, there is a broader data gap, in terms of that trial burn data. There are other munitions beyond rockets that are expected to have a substantial residue of agent that is incapable of being drained, based on the current Tooele, Utah experience. We call this situation heavy heels, or heels greater than 5% residual agent.

The trial burns were done, basically on artificial heels, not real residual agent and they were done with 5% quantity, not the rather larger quantities now being encountered, and that will be encountered. So, reliance on this trial burn data is, as Mr. Condit points out, insufficient. There are a number of situations that will be experienced at the Umatilla facility, whatever

technology is used, that will involve weapons that cannot be drained, not just rockets. And the impact of that large amount of agent being put in a furnace at one time is really unknown in terms of emissions, and this is important in evaluating the carbon filter system for the stack or alternatives to it, in terms of these systems' ability to deal with these situations that are now easily predictable from the Tooele and JACADS experience.

Regarding Mr. Condit's discussion of the NRC contemplating at one point that they might simply put a sham, what I would call a sham filter structure in place, a frame without a filter, or a non functioning filter, to avoid the inconvenience of a RCRA permitting and modification. I think it may be clearly implied, but use of such a sham filter would be a violation of RCRA and would be a major circumvention of public participation requirements and I'm assuming that no one is contemplating it, from any authority at the moment.

It's important in deciding on whether to go with the carbon filter or some alternative or even some other treatment technology, to understand that combustion processes like the baseline incineration system are used. You can expect agent releases out of the stack of the incinerators, with virtual certainty at this point. There are admitted agent releases that have happened at the JACADS prototype. The March 30 incident was clearly from our experience in the Utah federal trial recently, an incident that involved actual agent release out the stack. It's probably not widely understood beyond those in the audience during the Utah trial, but the Army had taken the position publicly prior to that time that the chemical released from the stack on March 30, '98, from the metal parts furnace, was not agent, based on the Army's understanding that the stack ACAMS had not alarmed and based on what we call the DAAMS tubes analysis, the D-A-A-M-S, the Depot Area Agent Monitoring System Analysis, which the Army had said publicly had shown that the chemical was not agent, although as Mr. Condit pointed out, they were at a loss to name the chemical, which they admitted did come out the stack.

But, when push came to shove at the trial, it became clear from Army and contractor witnesses, that of the three ACAMS in the stack, which the Army had relied on as not alarming, one of them was off-line, but its strip chart shows the presence of a chemical which appears to be agent, it simply did not alarm because it was not on-line. The second of the three ACAMS monitors in the stack was saturated with the chemical coming out of the stack at that time which rendered it incapable of alarming, but its strip chart showed a chemical which appeared to be agent. The third of the three ACAMS also showed a peak in the strip chart of something

substantial coming out the stack, perhaps not in the agent gauge, but that ACAMS is set up differently with a different analytical column, which may have accounted for that difference.

So the stack ACAMS data actually support the conclusion that agent came out the stack on March 30, 1998 at Tooele, something important to know in determining what type of pollution control devices are required for the Oregon facility. The DAAMS tubes, which the Army had relied on, for disproving the assertion that agent came out the stack on March 30, it turns out during the trial that there was no tracking or chain of custody on those tubes during this incident. In fact, a Manager instructed the monitoring technician explicitly to not track the tubes removed from the stack DAAMS at the time of the incident. So they were thrown in a box with forty some other tubes and no one knows whether they were ever analyzed in a laboratory or not. So, when it came time for the Army to offer those DAAMS tubes into evidence to prove their point they withdrew the exhibit. They were not offered into evidence and we presume because we had objected to the lack of chain of custody, that that was the reason.

A couple additional details, in terms of the mass balance idea that Mr. Condit explained, the Tooele facility should be capable of performing such a mass balance of the agent going into the filters as compared to the amount of agent captured on the filters when that carbon is taken out of service. To our knowledge, such a mass balance analysis has never been done. The reason it's important is that we know from the experience we've only alluded to here, that the ACAMS and DAAMS in the stack are not reliable, may not be reliable in the HVAC stack, we presume not, and it really would be good to know just how much agent has been collected in the carbon in the HVAC filters at Tooele, in order to basically put the Army to the test.

Is the carbon an effective filtration system? We have been told by a former Dugway engineering technician, Mr. Anthony [unintelligible], that in his experience, agent can either escape through the carbon relatively rapidly due to a phenomena I call channeling, because the carbon doesn't pack properly it leaves little avenues for the agent go through the filter, or because of the desorption or volatilization off the filter at higher temperatures, and that that sort of desorption can start to happen at high ambient temperatures, such as 90 degrees Fahrenheit, and it can be relatively complete, in other words, a complete off-gassing, at 400 degrees Fahrenheit or so. So it's an important issue, you know, the carbon filter may capture agent for awhile, but will it retain it, and under what circumstances?

The Commission should know, and I don't if the Army has brought this information forward to the Commission, that the carbon filter for the stack idea was proposed for the Tooele facility and later abandoned. And the apparent reason for the abandonment was a rather pointed notice of deficiency sent by the State of Utah to the Army regarding the [unintelligible] carbon filter in the stack. This notice of deficiency identifies numerous very difficult technical questions that the State of Utah wanted to have an answer by the Army before the State of Utah would consider approving use of carbon filter in the stack. I think it would be important for the Commission to find out if not only what these questions were, but what the answers were that were submitted, or if they were not submitted to the State of Utah, why not?

I believe that, well just one other detail, our concern about the need for some technology that can capture agent that otherwise would be released from the combustion stacks, if the Commission insists on going forward with incineration. One of the reason we're concerned about the need for [unintelligible] technology, and as Mr. Condit pointed out, at the moment the carbon filter in the stack can only be seen as experimental. And, I think, none of the clients that we represent in Oregon, wish to be guinea pigs in this regard, we thought that Congress had told Army to not treat the public as guinea pigs in this program. But one of the reasons we're concerned about stack release as a reality, and the need for some kind of technology regarding these stack releases is that at Tooele there had been numerous stack ACAMS alarms that have been associated in time with waste feed cut-offs because of some combustion or pollution control upset. And those are the very circumstances when you would expect that this alarm would not be cause for some sort of interferant, but would be real, from agent.

So given the time restrictions, let me stop there. I appreciate the Commission allowing me a chance to comment and I appreciate Mr. Condit sharing his time, and I'll turn it back over to Mr. Condit.

Richard Condit: That concludes our comments. Thank you.

Commissioner Whipple: Thank you, I would just remind you, although I know you know, this being the case is that comments will be accepted on this issue until the 20th of September and anything that you certainly wish to provide in writing to supplement and support your position on the carbon filters, certainly we're looking for that. I think, what we need to do at the moment,

is ask somehow we need to sort of gather all the folks who have spoken before us here this afternoon and I think—I really think it would be easier if you'd move to the front of the room, the folks most likely to receive questions. Maybe I should see if the Commission has any questions.

Commissioner Eden: Madame Chair? Initially, Mr. Condit, I wanted a couple of reference points for statements that you made that you seem be referring to the NRC report and I just wanted to go back and be able to look at those. One of them I think, if I've written this correctly, the "NRC discussion was limited to carbon injection systems not carbon bed systems." Do you have a reference in the report for that?

Mr. Condit: I would generally refer you to, I don't have the page reference in the text of my prepared comments, but I would generally refer you to the discussions where the NRC was talking about the experience in other countries and things of that nature and our concern there was that when we looked at some of those articles or abstracts of those articles, it seemed to be a carbon injection issue as opposed to a carbon bed issue. We will try to, in our written comments, provide you with those details.

Commissioner Eden: That would be helpful. And the other spot was "the NRC suggested that carbon bed filter be bypassed in upset conditions." Is that a correct statement?

Mr. Condit: That is.

Commissioner Eden: O.K.

Mr. Condit: And I am not sure, it looks like it's at page 47.

Commissioner Eden: O.K., thank you.

[Unidentified Speaker]: The last paragraph of the second column.

Commissioner Eden: O.K., so that's the one you were referring to earlier? OK, thank you.

Commissioner Van Vliet: Mr. Condit, in the last statement you give an implication that there was a court case in Utah?

Richard Condit: Yes.

Commissioner Van Vliet: What was the outcome of that?

Mr. Condit: It hasn't been determined yet, the trial occurred over a two week period in June, and frankly we're backlogged in terms of getting a transcript from the proceedings. So we have not been able to, the parties, the Army and we have not been able to submit proposed findings and conclusions of law. Once that is done, then the judge will make a determination on the case. But, I imagine, Mick might have some more specific information at the moment, but I imagine it is going to, unfortunately, be some months before we get through briefing and the judge has an opportunity to reevaluate all the evidence.

Commissioner Whipple: OK, are we ready to open for discussion? Does anybody have a question? I was not at all successful in getting people to move to the front. O.K. let's sort of regroup here a little bit, and I can ask questions a little bit, frankly I can't see you folks over here—

Commissioner Van Vliet: I would like to see if there is some responses to some of the things that were said.

Unidentified Speaker: I would be happy to [unintelligible].

Commissioner Whipple: Sure, O.K., Department, the Department folks in the front row there, we have some Army, Raytheon folks available.

Dr. David Kosson: If it's possible, I've got three of our folks here that I would like to join with me.

Commissioner Whipple: Certainly.

Dr. David Kosson: [unintelligible] answer questions [unintelligible].

Commissioner Whipple: Just don't go too far away.

Dr. David Kosson: If I may?—

Commissioner Whipple: Could I ask you to hold on just a minute? And a question for—I just sort of want to make sure that we sort of cover appropriately what we're to cover in this work session. One of my concerns, a bit, I think, was that, I know we are specifically are having a work session on carbon filtration, carbon filter technology. We have gone through a kind of a critique of the NRC report. Do we need or want to or are appropriately spending time delving into that report. I just don't want to get too far afield here, in terms of the critique, is that a problem?

Larry Knudsen: I am not sure I am following your question, but are you asking if it would be appropriate to get a response to some of the critiques?

Commissioner Whipple: Well for instance, you know the question of the time; there was not enough time to thoroughly read the report. We are all very aware, we just got the report yesterday as well. So, and we were, we specifically asked them to submit that, and as I say we have another 30 days to get information. I don't know that any of us feel like that we're thoroughly prepared to have a detailed critique of the report as well, I mean I think there are other issues that were covered too.

Larry Knudsen: Let me see if this helps. I am assuming that we are going to, I am hoping, that we are going to get additional written comments from the NRC, and the Army and G.A.S.P. on

the NRC report and probably on statements or positions that were taken during this meeting. And that all of that will come in before the deadline and that will be helpful in advising the Commission on what it might want to do. In addition, if the Commission wishes it hear it, certainly there's nothing inappropriate with hearing more from the Army or NRC in response to issues that have been raised on carbon filter technology. That probably ought to be done through the questioning process, but it can be done

Commissioner Whipple: I think that is what I'd like to do, we're up against of couple of things, one is, sort of, our time for adjournment was 3:00, I don't think we're necessarily totally locked into that though, we do have some, particularly scheduling, some plane reservations that I wouldn't want to go much more than 30 minutes beyond, I wouldn't want to go much more than 3:30, if the Commission at that point feels comfortable.

OK, I heard Commissioner Van Vliet suggest that he had some questions ready to go and I prefer I think the question, I would like to draw out first what the Commission's concerns are relative to what we've heard this afternoon and then give, if we've left something, you know, a big blank out there, we'll cover that, but I really want to be sure that the Commission gets the opportunity to ask questions.

Commissioner Van Vliet: Well, mainly my question was we had just heard the opening statement about not wanting to eliminate carbon filters or reduce additional safety measures and then we heard basically everything that was wrong with carbon filters. I would like to hear responses to some of the comments that were made about viable carbon filter technology, the final design, some of the things that were said at the end about analysis of the NRC and so on. And so if you could just, maybe you've already pinpointed some of those things already.

Dr. David Kosson: O.K., for the record, Dr. David Kosson, Chairman of the NRC. What I would like to do, if it's agreeable, is at least clarify what I believe came from misunderstandings that were presented earlier, probably due to the brief time that was available to read the report, because I think there' was some very significant misinterpretations that were made. Maybe it would be helpful to clarify those going through. Then after I get through I would ask my

colleagues also, if I left anything out [unintelligible] they would like to contribute also [unintelligible].

The first is the issue of independent analysis. The NRC process is one where, yes, we receive information the Army, we also go out to other sources both domestically and internationally for [unintelligible] through the current literature and by direct contact with professionals, that are experts in other areas of the field, beyond those members directly on the committee. Considerable amount of analysis and calculations of process design and evaluations was carried out beyond what the Army had provided.

After an NRC report is concluded as a draft report, it is further sent out to independent technical review, to approximately ten reviewers that are blind to us as members of the committee. At the final report, something recently that came back, they were listed in report, a change to prior NRC Policy. What happens is it goes out to those reviewers then we get back comments, in the case of a typical report we get well over 100 comments. We are then required to respond to each of those comments in writing, and make any modifications to the report as appropriate based on these comments.

It then goes to independent parties, selected by the NRC, based on their expertise, to review the comments from the external reviewers, our responses and modifications to the report, and then reach a judgement whether or not our responses were adequate on a technical basis. That person also has the luxury of adding their own comments in, that we get to respond to also. After we have satisfied that person, it goes to another NRC person, also chosen based on their expertise, to review it once again, as a third check on the process and the evaluation that was carried out.

That's for all the NRC reports, not just for this one. Finally, after we've satisfied those folks then it has to go the NRC internal approval process of through the NRC chain of command before its finally issued. The review process, and the independence of that review process is probably the most complex and thorough of any review process that exists. Far more thorough than any peer-reviewed literature that you may find, in typical peer-reviewed publications in the literature. I just wanted to assure you of that.

The second is that the issue of storage risk was great and release of agent. It's important to recognize that there is agent release from leakers of both rockets and projectiles that occur during storage, which is a release of agent. And if you look at the recent history of what has

happened [unintelligible] I think it would be helpful for you to review, [unintelligible] contrast with a release during the actual incineration process. Whenever an upset condition occurs the Army does brief the NRC on those very rapidly and very thoroughly. And when we do our reports we can comment on those, and there is a forthcoming report, which is going through the final steps of that arduous review process right now, which reviews the first few years of operations at the Tooele facility. And you can look towards that being issued over the next couple of months. And [unintelligible] will provide insight there for you.

Not operating the PFS, the carbon filtration, that statement [unintelligible] on Page 47, that was neither intended to be cynical nor manipulative. What it was intended, was to say, given the state where we are, we recognize that the inclusion of the carbon filtration process is a judgment call. That being, that the process is adequate without it, the emissions were very low, without the presence of carbon filtration. Some people would rather have carbon filtration as an added safety measure, and it can provide additional levels, or additional reductions in emissions by its presence.

However, other people, based on their judgment, may balance things differently, and prefer not to have the added cost of that, or may not want to have the added worker risk, that, again, is a small amount, that may come as a consequence of that. And so, in our suggestion there, we are saying well, given the state of where things are, what are the options you may have? Obviously, if you were not to operated the carbon filtration system, or load them as was suggested as an option, that would have to go through the RCRA permitting process. There is no intent on our part to ever suggest circumventing that kind of process. But trying to be realistic, when you get into the realm of judgment calls, what the options may be.

The next is whether or not we compared carbon bed filters, versus carbon injection. The Appendix provided in the report, that lists more than twenty-five installations, are those of carbon bed installations, not carbon injection installations. In the report itself, we do mention some data that comes from carbon injection systems. Based on that, [unintelligible] the limited amount of data, and kind of data, that can be used to calculate equilibrium partitioning, or distribution of components between the vapor phase and solid phase. We did not restrict ourselves strictly to carbon bed information, we went to the breadth of the scientific literature and information that was available to verify the calculations, to make calculations beyond that which have been provided by the Army, or had been provided by the Army, to assure ourselves

about the capacity of the carbon filters to remove agent, if it were released into the carbon filters, or other contaminants of concern.

The issue of bypass accidents—the issue of whether or not carbon filters can be bypassed during operation was, again, a contingency issue, it's not during upset conditions. The carbon filters were considered initially in our recommendations to be a safety consideration, or a reduction of emissions in the event of transients occurring upstream of them during the combustion process, and in the event that perhaps contaminants of concern made it to the carbon filters, they would be removed at that point.

However, we did also recognize the concerns that other people have raised about the potential for fires or other upsets in the carbon filters themselves. At that point, the bypass would occur so that you would isolate the carbon filters so that the release that one of the gentlemen spoke about, the rapid release potentially of contained materials, would not occur. We also carried out calculations that are discussed in the report, indicating that if a sudden release of material accumulated on the carbon were to occur, that it would not exceed safety, or risk, thresholds, based on the information that we had available.

The issue of coconut shell versus other carbon, what is best, I think it's important to recognize that the Committee did examine other applications, and other applications do have other types of carbon. However, when you look at other applications, often lignite is chosen, or lignite-based carbon, because it is must less expensive than other applications, but the issue is not which is the best carbon, because one carbon being better than another carbon is a trade-off in how much carbon you use, in many cases. The question is, will there be sufficient carbon, with sufficient capacity, to meet the needs of the application?

And that's the question that we answered in the report, that we believe the carbon that's selected, or alternative carbons that could be selected, adequate quantity would be present to absorb transient upset, or even a significant upset, of the system. Under normal transients that may occur in the system we felt that the carbon [unintelligible] is adequate to last for long period of time, in excess of a year, or perhaps for the full duration of the facility, depending on operation, depending on the final design. We also indicate that in the event of a major upset, [unintelligible] if for some reason that carbon made it through the system, and got to the carbon filters, rather than being destroyed in the combustion process, that the carbon would have adequate capacity to absorb that agent. But we also indicated that, at that point, it would have to

be evaluated whether it would have to be replaced immediately, before the facility continued in operation.

The next point that you had here was the issue of catalytic oxidation versus carbon injection, versus filter beds. If you go back to earlier reports that the NRC has done we also looked at other alternative technologies that would be potentially there, to varying degrees. We had to look at carbon filter beds because they are passive, that if you had loss of induced draft, or if you had upset conditions, they're always there. Carbon injection requires an active process, you're continuously renewing it. So that was not an oversight on our part, it was a deliberate approach that we took then.

The issues of arsenic and the waste characterization and puffs. Arsenic, or waste characterization---we live in an uncertain world, we will always live in an uncertain world. There will be some things in the waste that aren't exactly, down to the nines, that we expect. The air pollution control system that's currently in there, even in the absence of carbon filtration, is designed to remove those, under those circumstances. We go further on, a statement in the report, should transients occur, such as introduction of other materials that were not fully expected, we do expect that the filters will be effective in reducing metals that have not been quantified, we state that in the report. We also do state that we expect that the carbon filters would be effective in reducing those, and we expect reductions there.

Puffs, here in the report, again, I think that's a misunderstanding. If you go to Page 8, in the footnote, the first time we use the term "puffs," we refer to it and explain it, so that misunderstanding wouldn't occur. And it says "puffs refer to transient increases in concentration in the exhaust gas as distinguished from pressure excursions, which are sometimes also referred to as "puffs." The literature is not uniform in its definition of puffs, that's why were careful in the footnote there.

Pressure excursions cause gas to leak out of the incineration system into the containment area, which is important that these incinerators unlike hazardous waste incinerators or municipal solid waste incinerators are built in rooms that are further contained, so that if you have a leakage out of that incinerator, it would go in turn to another air pollution control system, hence the activate carbon that is used for the HVAC, the ventilation system, so those were not of a concern to the Committee because of the secondary treatment that would occur. Puffs are attenuated by the pollution control system and the activated carbon beds are designed to eliminate or mitigate

those puffs, or those transients that we are talking about, those are the very reason why they were suggested.

The other thing, the ability for the agent, for the carbon, to collect agent and subsequently release that, we did address that directly in the report. Also keep in mind that agent is not static on the carbon, I mentioned that earlier, there are degradation processes, that the carbon reacts—not the carbon reacts, that the agent reacts, with the carbon and degrades or while it is on the carbon it further degrades. So even though you put in on now, over a certain period of time some portion of it will degrade.

It is important to recognize also when talking about comparison between the ventilation system, the HVAC system and the activated carbon beds for the incinerator, that we're talking about two different operational regimes. That being the agent in the air coming out from the munitions processing area that goes through the ventilation filtration system, is much more laden with agent, much more heavily contaminated then what we would expect coming through the incineration system. And the behavior of carbon is proportional to the concentration that you see in that vapor phase. That's why [unintelligible] it's important not just take a straight extrapolation from one type of applications to another, to convince ourselves and do the rigorous analysis that it would be appropriate for the low levels agent as well as the high levels of agent in the different operating conditions that are possible, as well as upset conditions in the system.

I think that addresses the issues that I think were brought up by the earlier person, I think, I hope, clarified some of the misunderstanding or misinterpretations, which I believe were probably due to the rapid nature—it takes us a year or two years to produce a report like this. It is unreasonable to expect everyone will digest it fully in a matter of hours or a few days. I would like to ask if either Dr. May or Dr. Kelly have anything further they would like to add at this time?

Dr. Walter May: [unintelligible] I have just a couple of little comments to augment what you said. Agents are not all that stable of materials. On carbon, as it turns out, decompose surprisingly rapidly. If you look on page 29 of the report, there is a little discussion there about the decomposition of agents over time—

Unidentified speaker: Excuse me, could I ask you to speak into your mike a little bit more?

Dr. Walter May: I'm sorry, is that better?

Unidentified speaker: Thank you, that's better.

Dr. Walter May: A long time ago, when the Army was interested in establishing a 5X criteria, that's the 1000 degrees at fifteen minutes that destroys everything, they did some experimental work to just find out what the rate of decomposition was. The people who did that experimental work went to great trouble in their apparatus to make it extremely dry, because if they left any ordinary moisture on the glass vessel the rate would be quite a bit higher, in their experimental work. So anyway, but they did come out with rate data, the rate of decomposition, and you'll see on Page 29 the use of, our use of that information.

Lately, the Army commissioned some experimental work on decomposition of the carbon that came out just about the time we were writing our reports. It is reviewed very briefly in the report. To give you an idea, I quote here, the half-life of GB on carbon, dry carbon, but its not really dry, because there is moisture in the air, was reported to be about 63 days, at 30 degrees centigrade. Well 63 days, that's half gone in 63 days, if you have run one of these carbon filters for years, a year or so, you have to extrapolate that half-life business, and so a very large fraction of this stuff will be done. I really think that if you were try to do a mass balance on the carbon, by figuring out how much went on, and then try to figure how much came off, it'd hopeless. You just simply could not get the stuff off, it's gone. That's one point.

I would like to make a comment on one other thing, and that's about the mechanism for bypassing the filter. You make a point; you have to have a bypass arrangement there because there are times when you must bypass it. If you have to bypass because there's something going wrong, then I expect that that will cause call for some other action. You are certainly gonna want to bypass the filter, but you probably are gonna want to shut down the flow of agent. That is an operating feature here that the Army will have to give a little thought to. Incidentally, the bed is a pretty big thing and so if you do start getting a little combustion occurring in it somewhere, it takes up a significant length of time to heat up, and you've got time, you've got lots of time to respond, shut down big valves, open other big valves and so on. That's an operating feature that should not be a real problem. Kathryn?

Dr. Kathryn Kelly: Just to add a word with regard to risk. Chemical agent is the riskiest substance this toxicologist had come into contact with – hypothetically speaking. And we wouldn't all be here today if it weren't for the inherent hazards of these chemical agents. And as you sort through this difficult issue of the carbon filter, I would say that to sum it up from a risk perspective, that the carbon filter themselves don't increase or decrease the risk to the off-site population or environment in any appreciable way. No big gains, no big drawbacks, it's risk neutral, as has been stated in the report.

What is very clear to us is that the major risk is the ongoing stockpile of chemical weapons that have the potential to leak or in other ways be disturbed and thereby become a source of exposure to nearby residents and the environment. That's true at Umatilla, as well as the other eight sites in the United States. So as you think through these decisions, please understand that's how we ended up with a recommendation to have, to not go ahead with carbon filters at Tooele and JACADS, because any delay—let me rephrase that, what is clear with the carbon filters is that any permit-related delay will, of necessity, increase the ongoing risk to nearby populations by delaying the disposal, the destruction, of the stockpiles. So that's why you end up with, what seems at first to be an inconsistent recommendation, to leave Tooele and JACADS as they are, because to retrofit them would cause a delay.

This also leads to a recommendation to leave Umatilla and Anniston with the carbon filters unless there is some way to make a permit decision, otherwise, yesterday, on it. And at Pine Bluff it is still early enough in the process that they have the choice to go either way. So, to me those are the issues that, if I were in your position, seemed inconsistent at first glance in trying to explain from a risk standpoint, why they may appear inconsistent, but if you keep the big picture in mind about off-site risks to human health and the environment in perspective then perhaps it becomes more clear.

Commissioner Whipple: Thank you.

Commissioner Reeve: One quick question? Just to follow up on the risk issue for a moment and worker risk, although, as a toxicologist I guess you're not looking at that as much. But just so I understand, kind of this balancing of worker risk. I take it at Umatilla we don't have a

comprehensive risk analysis, the level 2 or QRA2 or whatever it's called, because, in part, the facility isn't completely designed, or everything isn't known about it in terms of all the inputs that would go into evaluating worker risk and obviously a risk management plan tries to mitigate those risks. I take it it's a sort of an ongoing process, back and forth. I guess I wanted to get some sense of the relative magnitude of worker risk compared to other types of facilities, not necessarily facilities with contaminants or toxic agents, but just—I take it these are largely industrial type of accidental risks? Things falling, people getting hit, all that sort of thing. Is that mainly what we are talking about?

Dr. David Kosson: Yes. Let me clarify perhaps two aspects of that. First off, on page two of the Executive Summary, down about two-thirds of the way, or half-way down the first paragraph, that talks specifically about this—but let me clarify the level of detail that goes into the Phase 2 QRA. It goes down to who was working where when something happened. In other words, if somebody is doing the maintenance check, where is that person located, where is everyone else in the plant located. That depends on specific procedures for what people are doing. That's not a design, it's actually a procedural issue and it has an extreme level of detail and that's why it waits until those procedures are all finalized, and [unintelligible] systemization [unintelligible] included.

Also, when you do the QRA, you use it as a learning tool so it then feeds back into the process to make improvements when you identify difficulties. So it is a very much a living process. In putting it in contrast to other risk, what we indicate here is that the risk with the PFS is about three times ten to the minus fifth, without it it's about one times ten to the minus fifth, and that's in contrast to four times ten to the minus fourth for the overall risk. That means that the incremental increase due to the addition of the PFS is at least ten times less than the overall worker risk due to other issues at the site.

Then what we do is we try to put that risk, that overall risk, in contrast to manufacturing risks, which are about three times ten to the minus fifth, that's about the same as the PFS, per year, as compared to the PFS, which is estimated for the entire operation of the facility. And also, ten to the minus fourth for construction workers. Two aspects, which I think are interesting comparisons and useful because part of the operation of this whole demilitarization program is a large construction operation. Just building the facility before you operate it, and then the

operation is probably analogous to chemical manufacturing or other types of manufacturing environments. I would also like Kathryn to comment on [unintelligible] one of our risk experts [unintelligible].

Dr. Kathryn Kelly: If I understood your question correctly, I don't think the risks at these sites have been adequately quantified, to answer your question. We don't know where the major sources of risk are coming from, but they are in the process of being dealt with and why it hasn't happened until now, is a lot of reasons. A lot of good people making the decisions with the best information they have, but certainly part of it is that most state Departments of Environmental Quality do not have worker health in their jurisdiction, it has not generally been an issue at these sites, until NRC raised it with the Army.

Dr. Walter May: I just wondered if you know in general what the worker risk is for plants around the country in all sorts of different occupations, and if you don't, I would certainly recommend you get a hold of this little book which is put out every year, and it is really based on the census of fatal incidents, which is run by the federal government, which lists death due to accidents and they take them apart in every conceivable way. Age, sex, place, workplace, work type, type of accident, et cetera, et cetera. So that's the sort of, sort of base information with which you can compare our plant.

Dr. David Kosson: For the further benefit of the council, just to read into the record, that report is called "Accident Facts" and is put out by the National Safety Council.

Commissioner Whipple: There was a quote in the—it certainly isn't attributed to Mr. Condit, though it is attributed to the spokesman for the folks who are asking that some of these decisions be reviewed. Again, the source is the newspaper, and I think we all know we need to look at that at least little more. Nonetheless, the comment was that, it was quote, it was poor technology at other plants there have been explosions caused by carbon filters. Is there some documentation supporting that position?

Dr. Walter May: I've never heard of an explosion, however, there have been a number of fires, but they, none associated with carbon filters on incinerators. Carbon filters have been used a lot for adsorbing vapors from paint rooms, or something like that. And there we're not talking about nanograms per cubic liters, we're talking about percents of vapor in the air that would be adsorbed in the carbon, so you get a lot of adsorption. When it adsorbs it, it heats up the carbon a bit, and there is lots of air around. There have been cases where the combination of heating due to adsorption, plus the fact that the stuff being adsorbed may pretty easily combustible.

Ethers, for example, may be readily burnt and so it would catch fire and that's not uncommon. But incinerators, we're dealing with a totally different thing. We are talking about terribly low concentrations, relatively speaking, parts per million rather than percents, and the result is that I have not seen any fire directly in a carbon filter—there is one fire, that is always reported, in a plant that had a carbon filter, that was an incinerator plant. The fire however, was in the stack; they had a stack that had an inside organic insulation in it. I'm not sure exactly what it was. But that insulation in the stack caught fire and then you had a regular chimney fire, which can be terrible. And how did that thing catch fire?

They never did come to a decision, but one of the possibilities was that carbon dust from the carbon bed had accumulated in the nooks and crannies and that [unintelligible] it did occur. And maybe it smoldered a little bit and set this thing on fire. So that's the closest that I've come to of any sort of incident in a carbon filter on an incinerator. Lots of fires in other carbon filters.

Commissioner Whipple: Questions from the Commission?

Commissioner Reeve: I noticed that regarding the build-up of combustible materials, I noticed that the adsorption rates, I guess, I forget the technical term, but when materials—the length of time materials will stay in the carbon. The volatile materials will not stay very long, they're really expected to be gone by the time the filter beds are changed out, right?

Dr. Walter May: There's a lot of stuff that's adsorbed very weakly, in a short time it [unintelligible] right through and then after that it's as though the carbon filter isn't even there.

Commissioner Reeve: OK, so the chemical, or the substances of concern, that the benefit that we're trying to achieve through the carbon, would be either agent or dioxins or metals or things of that nature. And those, I take it, have a longer life in the carbon?

Dr. Walter May: I think, you see numbers in here that 95% of the cancer risk associated with the stack is due to materials that will be retained by the carbon. There are other things. Benzene, for instance, is present in extraordinarily low levels, but it's there, and it's retained by the carbon bed only very briefly, it just goes right on through. There are a few percent of the cancer risk that is not affected by the carbon.

Commissioner Reeve: O.K., I guess my question then, just to follow up on this concern about possible fire or whatever, would be the materials that are adsorbed longer—are those combustible or are those not?

Dr. Walter May: A lot of—the agent is very, easily combustible.

Commissioner Reeve: O.K., then the question has to be, at what level?

Dr. Walter May: Well, look, first of all, what I said is that the concentration of these material is so extraordinarily low, that the agent, if it's present at all, is parts per billion, and it may be zero, so that their adsorption cannot increase the temperature significantly. So they will not drive temperature up. There is nothing that you see that will drive the temperature up, to create a fire. Now, if there is some mess-up in the operation, there is a process for re-heating the air so as to lower the relative humidity. If that goes wild—it would be stupid, but stupid things happen—then you would be concerned with exactly what you are saying.

Indeed, MitreTek, the people who did the analytical work for the Army looked at that eventuality and it is reported in our report. They conceived the thought that, hey after we've run the bed for a long time, 144 weeks, and then something goes wrong, up goes the temperature and nobody does anything, everything is driven off in an hour, is that bad?. Well it wasn't all that bad, they looked at the things called the ATV, California EPA criteria hazard, and none of the materials exceeded the ATV. I think the analysis, you have to be a little careful of it, but it does

not appear as though that driving this stuff off real quickly like this, first of all it's not a likely incident, but it's also—it doesn't seem to be a super hazardous thing.

Commissioner Reeve: O.K., that's described on page 28 as a filter upset, and you're right, a desorption in a short period of time, and it says if it's desorbed in an hour there would no material that would exceed the acute threshold level. Is that ATV, it didn't say, I saw in the report, whether that—is that at the exit of the stack or is that ground level?

Dr. Walter May: I think that's at ground level.

Commissioner Reeve: So, there is some dispersion assumed?

Dr. Kathryn Kelly: They're ambient concentrations within their draft criteria developed by California, but were never officially adopted. So I wouldn't give them regular credence.

Commissioner Reeve: Well, is there something else that you would give credence to in terms of looking at those levels?

Dr. Kathryn Kelly: I don't think that the work has been done yet. I think that they are in the process of developing those scenarios and estimates, but we don't have, for instance, an exposure concentration to workers of any of those compounds of concern under any of those scenarios.

Commissioner Reeve: And why not?

Dr. Kathryn Kelly: Well, it's—I think historically the effort was focused on the RCRA Part B Permit and worker health and safety has not historically been an integral part of the RCRA Part B Permit. It has been something that the NRC, and perhaps others have asked the Army to address, above and beyond what was required of it by regulatory guidance or statutes.

Commissioner Reeve: I guess, what I am wondering though is, doesn't OSHA or other regulatory agencies have permissible exposure levels or other guidance levels—exposure limits that you can look to for these compounds?

Dr. Kathryn Kelly: They do, but you can't—unless you have exposure concentrations to compare them to, you have no analysis that can be done. We have not received yet—and we have asked for it—but we have not received any exposure concentrations under these various worker scenarios. Which is why you'll see, interspersed several times throughout the report, the statements that the worker risks are probably the driving risks at the carbon filter and we do not believe that they are adequately quantified.

Dr. Walter May: I think these ATV numbers here were not associated with the workers. It was assumed the material was driven off the carbon beds and went up the stack—

Commissioner Reeve: Right.

Dr. Walter May: —And then it dispersed in the normal way to the surrounding populations.

Dr. David Kosson: I think it's important to recognize, and we call it out several times in the report, that we feel that additional evaluation of worker risk is warranted and should be considered. It's also important to recognize that there are mitigating factors in the plant environment. One is that—it makes these sorts of estimates very difficult—one is, within the plant environment, how an accident would occur, its propagation and the like, is a difficult estimate that has a lot of uncertainties and also perturbations to it that need to be considered. Secondly, there are personal protective equipment, such as all the workers carry respirators and the like. Even when we go in the plant we are required to—that are also further mitigating measures and also other features, so it's not a simple question, it's something certainly that we asked for more information on, but it is also something that is a considerable effort to [unintelligible].

Commissioner Eden: If I may, is it an appropriate place to ask the Army whether it plans to consider these issues in the Phase 2 QRA?

Rick Holmes: That's what the Phase 2 QRA is supposed to do, to look at the worker risk from an agent perspective and additionally from an industrial type perspective to look at the postulated accidents that could occur through the SOP hazard analysis that's accomplished. I mean, the worker has to do job X, what are the things that could occur while that worker is doing job X? Now that process is not a quantitative analysis. You find a tripping hazard when somebody's going to do something, you either put up a sign or you move it so it's out of the way. You find something that needs to be fixed; you fix it, or make sure that the worker is actually trained to do the steps in this particular sequence so that the job is done properly. So, that absolutely is part of what we will do for the PFS, which is what we do on every system, operation in the plant.

Larry Knudsen: Madam Chairman, could I request that the speakers identify themselves, we want to keep this record—

Commissioner Whipple: You bet.

Rick Holmes: I'm sorry. For the record I am Rick Holmes.

Dr. Kathryn Kelly: These are the very difficult issues that Dr. Kosson alluded to. Trade-offs between worker and public health risks. How do increase one and not increase the risk of the other? Trading off quantified versus unquantified risk is a very difficult decision.

Commissioner Eden: Can I clarify for the record that you are Kathryn Kelly, is that correct?

Dr. Kathryn Kelly: Oh, yes [unintelligible] a toxicologist [unintelligible].

Commissioner Eden: Thank You.

Commissioner Whipple: We're sort of approaching the time I suggested that we wanted to bring this to a close. I have a feeling that all the questions haven't been answered. On the other hand—

Larry Knudsen: I guess I'll just reiterate here that we do have the opportunity to take additional comment and to a certain extent I think if the Commissioners have questions that they either didn't have time to express or might come across later, I think it would be appropriate to let staff know and they will present them to various folks that have been assisting us today. At least, hopefully, we would be able to get some kind of a written response.

Commissioner Whipple: O.K.

Richard Condit: Madame Chairperson, may I request a couple of [unintelligible] response [unintelligible]? We've had a lot of time by the NRC and other folks. I'm not asking for a lot of time, but I think it's appropriate to recognize a couple of items for clarification purposes.

Commissioner Whipple: Mr. Condit, if you have a couple of quick comments, I would entertain them, but I will keep you short.

Mr. Condit: [unintelligible] gavel me [unintelligible]. I want to say first that I certainly appreciated the clarifications by Dr. Kosson, Dr. May, Dr. and Dr. Kelly on the NRC report, however, one issue that I have a question about is in terms of this independence question. It is my understanding, and I would like to be corrected if I am wrong, that drafts of what the NRC is working on are provided to the Army for comment also during the process, is that right, or what?

Dr. Kosson: That is incorrect, actually what I would like to do is ask Don Siebenaler to come up and clarify formally what the NRC policy is relative to that and how drafts are handled.

Don Siebenaler: Don Siebenaler, Study Director for the Committee on Review and Evaluation for the Army Chemical Stockpile Disposal Program, or Stockpile Committee. The review process at the Academy of Sciences in Washington is really one that is fairly independent of the

Committee itself. The reviewers are gotten from all sources, commissions, boards, and other sources within the Academy of Sciences. They come recommended to me, or to other people within the staff of the Academy of Sciences, from anywhere and everywhere. They can come from sources like yourself or people who are aware that we were doing such a review and then they are submitted up the chain of command of the Academy of Sciences for approval. And these are people with, I think, Dr Kosson described earlier, the kind of—for example, we have chemical engineering problems that we may be looking at in a particular report, and we will get chemical engineers to look at those kinds of problems. We may have health risk assessment or quantitative risk assessment. We will seek to have at least dual coverage, on those kinds of things, in the oversight by reviewers of the report. Now, when these come in, they come in completely anonymously to me. And what we do, is we farm them out to the Committee for response and all that. Now, I don't want to bore you with this, so where do you want me to be quiet?

I think the point is, is that it is really a completely separate issue from the work of the Committee, if we're talking about independent review. If you're saying are we independent of the Army? Absolutely. The Army can suggest a reviewer to me if they wanted to, anybody can suggest a reviewer to me, but we really—we send usually maybe ten or fifteen reviewers up the command within the Academy of Sciences for approval. I don't necessarily—I may be told you have to add more reviewers, you have to get more coverage of a certain expertise in the review process and we do that. We go out and seek people to do those kinds of reviews and then the review is done completely independent of comments from the Committee.

Commissioner Whipple: Thank you.

Dr. Walter May: I think it's important to reiterate the point that the first time the Army saw this report is when you saw it.

Richard Condit: I think they are given privilege of a short period of time—

Don Siebenaler: We are able to give the Army a prepublication that can be, doesn't have to be, and really it depends, up to 10 days. So in this particular report, we provided a prepublication, which is essentially what we provide to the National Academy Press, so that the Army, as the sponsor of this committee can have a look at the report. The report is done, it's finished. They can comment all they want on it, but the report, at the time I turn it over to the Army as a prepublication draft, I handed it to the National Academy Press for final printing. So there is, there may be, NAP may find a small edit of a the, this or that that they might change from a prepublication, but other than that, the Army gives no input to us whatsoever from the prepublication to make us fix it, it's already being printed.

Commissioner Whipple: O.K., thank you.

Richard Condit: Thank you for that clarification; just a couple of other items. With respect to the worker risk issues, it has always been our interpretation, I think many peoples' interpretation, that when you're considering public health, you go through Oregon Statutes or RCRA. The workers are members of the public. So, I don't view it as a novel idea that workers would be considered in the idea of whether or not we're adequately protecting public health. And I don't think the statutes were intended to be restrictive in excluding workers from the rest of the population.

With respect to the comment on arsenic and the waste characterization, not being perfect, well, that may be true and I appreciate the imperfections, but RCRA requires that we know what the waste is and I think that's an obligation that the Army has to meet, there's no question about it. With respect to the comment on the HVAC carbon filter situation or set-up not being the same as the circumstances we might find in a carbon filter PAS system, my response is that, that is the only carbon filter system that Army has operated, so why don't we look at what is happening with it to figure out might be happening analogously with a similar type of system. That at least is something that is functioning and/or currently being used by the Army in this situation.

Commissioner Whipple: Mr. Condit, I am going to gavel you, but I would encourage you to submit your questions again, particularly during this open comment period, as you well know

also includes asking questions, and it strikes me that many of the questions that you would like to have answered, we would like to have answered also, so we anticipate that you will submit those questions. Staff, anything more we need to know? Quickly.

Wayne Thomas: I think there is a lot more we need to know. Quickly, my recommendation is that staff will wait until the end of the comment period, receive all the comments, collate those, summarize those, and review the information that we receive, and come back to the Commission in November with a staff report and a recommendation on the carbon filter technology.

Commissioner McMahon: Who should we send questions to?

Commissioner Whipple: Any specific questions that Commissioners want to be sure are addressed will go to Wayne Thomas.

Stephanie Hallock: Madam Chair, I was just going to say that I was glad that Wayne said that, because I was going to waffle on when we could get back to you, but since he committed to getting back to you in November we will do that.

Commissioner Whipple: OK, anything else from the Commission? Thank you all very much for attending, I know many of you came from quite a ways, we do appreciate it. In case you haven't figured it out this Commission thinks this is a very big deal and we intend to study all the details that come to us in the next bit of time, so thank you very much and we'll see you next time.

[The meeting was then adjourned.]
[End of audio recording.]

ATTACHMENT A

AGENDAS FOR THE MEETING OF THE ENVIRONMENTAL QUALITY COMMISSION

AUGUST 18, 1999

AGENDA

ENVIRONMENTAL QUALITY COMMISSION MEETING

August 18, 1999

DEQ Conference Room 3A
811 S. W. Sixth Avenue
Portland, Oregon

Note: Because of the uncertain length of time needed for each agenda item, the Commission may deal with any item at any time in the meeting. If a specific time is indicated for an agenda item, an effort will be made to consider that item as close to that time as possible. However, scheduled times may be modified if agreeable with participants. Anyone wishing to listen to the discussion on any item should arrive at the beginning of the meeting to avoid missing the item of interest.

Beginning at 10:00 a.m.
Work Session

10:00 - 11:30 a.m. **Informational Item**: New Technology to Replace the Dunnage Incinerator at the Umatilla Chemical Agent Disposal Facility

12:30 – 3:00 p.m. **Informational Item**: Presentation on Carbon Filters

Hearings have already been held on the Rule Adoption items and the public comment period has closed. In accordance with ORS 183.335(13), no comments can be presented by any party to either the Commission or the Department on these items at any time during this meeting.

The Commission will have lunch at 11:30 a.m. . No Commission business will be discussed.

The Commission has set aside September 30-October 1, 1999, for their next meeting. The location will be in Coos Bay, Oregon.

Copies of staff reports for individual agenda items are available by contacting the Director's Office of the Department of Environmental Quality, 811 S. W. Sixth Avenue, Portland, Oregon 97204, telephone 229-5301, or toll-free 1-800-452-4011. Please specify the agenda item letter when requesting.

If special physical, language or other accommodations are needed for this meeting, please advise the Director's Office, (503) 229-5301 (voice)/(503) 229-6993 (TTY) as soon as possible but at least 48 hours in advance of the meeting.

July 20, 1999

EQC Agenda

Environmental Quality Commission
Special Meeting

Umatilla Chemical Agent Disposal Facility

August 18, 1999
10:00 a.m. to 3:00 PM
MEETING ROOM 3A
DEQ Headquarters
811 S.W. Sixth
Portland, OR 97206

Time	Agenda topics	Presenter
10:00 a.m.	Introduction	DEQ
10:10 a.m.	Dunnage Incinerator	U.S. Army Program Manager for Chemical Demilitarization
11:00 a.m.	Question and Answer Session	EQC
11:30 a.m.	**Lunch break**	
12:30 p.m.	Introduction	DEQ
12:35 p.m.	Application of Carbon Filter Technology to Stack Emissions	National Research Council
12:55 p.m.	Current Design of Carbon Filter System at UMCDF	U.S. Army and Raytheon Demilitarization Company
1:15 p.m.	Carbon Filter Technology	G.A.S.P., et al.
2:15 p.m.	Question and Answer Session	EQC and all Presenters
2:45 p.m.	Summary Discussion	EQC/DEQ
3:00 p.m.	Adjourn	

ATTACHMENT B

SECONDARY WASTE PROCESSING AT THE UMATILLA CHEMICAL AGENT DISPOSAL FACILITY

Presented to the Environmental Quality Commission
by the U.S. Army

August 18, 1999

PMCD
Program Manager for
Chemical Demilitarization

SECONDARY WASTE PROCESSING AT THE UMATILLA CHEMICAL AGENT DISPOSAL FACILITY (UMCDF)

Presented to:
Oregon Environmental Quality Commission

Mr. James L. Bacon, Program Manager for Chemical Demilitarization
Mr. Mark Evans, Chief, Operations Team, Project Manager for Chemical Stockpile Disposal
Mr. Loren Sharp, Deputy Project Manager, UMCDF, Raytheon Demilitarization Company

18 August 1999

SECONDARY WASTE PROCESSING AT THE UMATILLA CHEMICAL AGENT DISPOSAL FACILITY

PMCD
Program Manager for Chemical Demilitarization

UMATILLA
chemical agent disposal facility

PMCD Charter: Dispose of the stockpile at Umatilla Chemical Depot while ensuring MAXIMUM PROTECTION to the workers, the public, and the environment

Strive to provide best value while ensuring NO COMPROMISE to our maximum protection charter

**Not a cost/benefit trade-off -
no sacrifices in safety or environmental protection are tolerated**

PMCD
Program Manager for Chemical Demilitarization

SECONDARY WASTE PROCESSING AT THE UMATILLA CHEMICAL AGENT DISPOSAL FACILITY

- Current RCRA permit correctly identifies the DUN as the best available technology for disposing of secondary waste

- Planning in support of JACADS closure indicates that equally-protective, more cost-effective approaches may be possible - but these approaches remain undemonstrated

PMCD wants to ensure environmentally - responsible, cost effective means are implemented at the UMCDF

PMCD
Program Manager for Chemical Demilitarization

SECONDARY WASTE PROCESSING AT THE UMATILLA CHEMICAL AGENT DISPOSAL FACILITY

- "Maximum protection" means that changes that impact the start date of stockpile destruction operations must be avoided
- Time for meaningful public involvement must be included in any change assessment process
- Oregon's strong preference for DEMONSTRATED technology applications must also be taken into consideration

The challenge: Deriving an approach to allow for consideration of demonstrated alternatives while maintaining the start date for stockpile destruction operations

PMCD
Program Manager for Chemical Demilitarization

SECONDARY WASTE PROCESSING AT THE UMATILLA CHEMICAL AGENT DISPOSAL FACILITY

- The dunnage incinerator was designed and permitted for waste streams with different characteristics
- In order to accommodate these wastes, the DUN was designed for the worst case for each waste as compared to the design requirements for any one waste stream
- This manifests itself in cost ($30M)

The DUN meets environmental standards but is a relatively expensive unit to procure, install, and operate

PMCD
Program Manager for Chemical Demilitarization

SECONDARY WASTE PROCESSING AT THE UMATILLA CHEMICAL AGENT DISPOSAL FACILITY

- Work in support of JACADS closure has identified different approaches for each waste stream permitted for the DUN
- Preliminary analysis indicates that these alternatives are "risk neutral" from an environmental and risk (chronic and acute) perspective
- Preliminary analysis also indicates that cost savings in the range of 13-20 million dollars are possible

PMCD
Program Manager for Chemical Demilitarization

SECONDARY WASTE PROCESSING AT THE UMATILLA CHEMICAL AGENT DISPOSAL FACILITY

- Alternative approaches will not be demonstrated in time to allow for permit modification and installation at Umatilla (if warranted) prior to the scheduled start of stockpile destruction operations
- 85% of cumulative public risk from stockpile destruction operations will be eliminated during the first disposal campaign at the UMCDF

The challenge: Identify a way to allow for demonstration and possible use at Umatilla without delaying the start date

PMCD
Program Manager for Chemical Demilitarization

SECONDARY WASTE PROCESSING AT THE UMATILLA CHEMICAL AGENT DISPOSAL FACILITY

- **Proposed approach:**
  - ➤ **Develop a firm compliance schedule tied to testing and demonstration activities at other sites and to critical milestones at the UMCDF**
  - ➤ **The DUN remains on-hold pending decision process**
  - ➤ **Ensure that Oregon DEQ has FULL and OPEN access to all developments in secondary waste**

Approach consistent with "maximum protection", Oregon desire for demonstrated solutions, and prudent fiscal practices

PMCD
Program Manager for Chemical Demilitarization

SECONDARY WASTE PROCESSING AT THE UMATILLA CHEMICAL AGENT DISPOSAL FACILITY

UMATILLA
chemical agent disposal facility

- **What is the down side?**
  - Some wastes in storage longer than originally anticipated
    - ✓ 50% of charcoal was originally programmed to be disposed of in closure - now 100%
    - ✓ Protective clothing from first campaign would also have to be stored for later processing
  - Oregon concerns over "legacy wastes" - will the Army commit to the disposition of these wastes in a timely manner?

PMCD
Program Manager for Chemical Demilitarization

SECONDARY WASTE PROCESSING AT THE UMATILLA CHEMICAL AGENT DISPOSAL FACILITY

- **Public/worker risk from proposed approach will be minimal and will follow practices demonstrated at the JACADS**
- **Compliance schedule with clear, tangible commitments will allow State to have sufficient control over process to ensure legacy waste issue is not created at UMCDF**

The Army needs to work with the DEQ to ensure the State has adequate visibility and control of the process

SECONDARY WASTE PROCESSING AT THE UMATILLA CHEMICAL AGENT DISPOSAL FACILITY

Raytheon

- **Raytheon Demilitarization Company uniquely positioned:**
  - ➤ **Operating, Maintaining, and Closing JACADS**
    - ✓ **First-hand knowledge on DUN design and performance**
    - ✓ **Ten years experience with handling and storage of charcoal, PPE, and other secondary wastes**
    - ✓ **Programmatic Lessons Learned Program to feed experience forward**

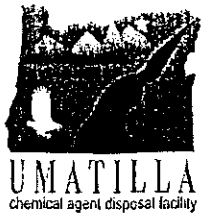
SECONDARY WASTE PROCESSING AT THE UMATILLA CHEMICAL AGENT DISPOSAL FACILITY

Raytheon

- Raytheon Demilitarization Company uniquely positioned: (continued)
  - ➤ Currently designing the JACADS carbon micronization and thermal decontamination system
    - ✓ Responsible for installation, testing, and operations
    - ✓ Developing permit modifications

Raytheon Demilitarization Company ensures Oregon not only a demonstrated technology but a demonstrated performer

TIER 1 1ST FURNACE TURNOVER (MAY 00)	TIER 2 START OF THERMAL OPS (JAN 01)	TIER 3 START OF STOCKPILE DESTRUCTION OPS (OCT 01 - FEB 02)	TIER 4 COMPLETION OF 1ST CAMPAIGN (FEB 03 - JUL 03)
• Submittal of compliance plan permit mod • Submittal of permit mod for storage pending on-site disposal • Submittal of waste analysis plan update	• Submittal of waste management plan for stockpile destruction operations (1st campaign) • Submittal of waste minimization plan for destruction operations (1st campaign) • Submittal of GB test results for TDS • Submittal of permit mod to allow contaminated wood to be processed in MPF and to address misc. wastes • Furnish copy of JACADS permit mod packages for TDS & CMS	• Submittal of Permit package for PPE disposal • Submittal of report on initial operations of JACADS CMS	• Submittal of permit package on carbon disposal



SECONDARY WASTE PROCESSING AT THE UMATILLA CHEMICAL AGENT DISPOSAL FACILITY

Raytheon

Additional initiatives:

- DEQ participates in JACADS Closure integrated process team (IPT)
- DEQ witnesses installation, testing, and operations at JACADS, CAMDS
- Creation of new IPT to guide/oversee development of all Tier 1 modifications

Full participation and involvement

PMCD
Program Manager for Chemical Demilitarization

SECONDARY WASTE PROCESSING AT THE UMATILLA CHEMICAL AGENT DISPOSAL FACILITY

- PMCD remains committed to executing the program in a manner which ensures maximum protection and satisfies State of Oregon requirements
- PMCD desires the latitude to continue to pursue prudent cost-reduction initiatives while ensuring no compromise to environmental protection or worker/public safety
- PMCD looks forward to working with the DEQ to develop/finalize a compliance schedule modification to allow process to continue

Maximum protection, best value -
and NO compromises to environment/safety

State of Oregon
Department of Environmental Quality

Memorandum

DEQ Item No. 99-1583(92.01)

To: See Distribution List

From: Sue Oliver
Senior Hazardous Waste Specialist

Date: September 24, 1999

Re: Addendum to the Transcript of the Environmental Quality Commission (EQC) Meeting held on August 18, 1999

Enclosed is an "addendum" to the EQC transcript that was sent to you last week. While reviewing the transcript I discovered that I had neglected to include some notes about the presentation by the National Research Council. Enclosed are two replacement pages for your transcript, and an Attachment C to add to the back of your copy.

Please replace pages 1-2 and pages 31-32 of your transcript copy with the corrected pages enclosed. Attachment C can be added to the back of the document to make it complete.

Please call me at (541) 567-8297, ext. 26 if you have any questions or need further information. I apologize for the error.

DISTRIBUTION:

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LTC Woloszyn, Commander, Umatilla Chemical Depot

Environmental Quality Commission
August 18, 1998
Worksession on the Umatilla Chemical Agent Disposal Facility

(DEQ Item No. 99-1509(92.01))

INTRODUCTION

This document is a partial transcript (prepared by the Oregon Department of Environmental Quality) of the meeting of the Environmental Quality Commission on August 18, 1999 held in Portland, Oregon. The meeting was held as a special worksession to discuss the Umatilla Chemical Agent Disposal Facility (Permit No. ORQ 000 009 431). Agendas for the worksession are included as Attachment A.

After introduction by staff, there was a presentation by the U.S. Army concerning "Secondary Waste Processing at the Umatilla Chemical Agent Disposal Facility." This portion of the meeting is not included in the transcription, although the question and answer session immediately following the Army's presentation is included. A copy of the Army's presentation materials are included as Attachment B.

The National Research Council (NRC) gave a presentation concerning the findings and recommendations contained in an NRC report released August 11, 1999 ("Carbon Filtration for Reducing Emissions from Chemical Agent Incineration") The NRC presentation is not included in this transcription, but a copy of the Executive Summary from the report is included as Attachment C. Immediately after the NRC presentation, a representative from the Army gave a brief presentation concerning the design of the carbon filter system at the Umatilla facility. This portion of the meeting was not transcribed.

[Copies of the audio cassette tapes are available upon request from the Department of Environmental Quality.]

SPEAKERS

The following persons spoke at this meeting:

NAME	TITLE	ORGANIZATION
Carol Whipple	Chair	Environmental Quality Commission
Tony Van Vliet	Member	Environmental Quality Commission
Linda McMahon	Member	Environmental Quality Commission
Melinda Eden	Member	Environmental Quality Commission
Mark Reeve	Member	Environmental Quality Commission
Stephanie Hallock	Eastern Region Administrator (Acting Director for this meeting)	Department of Environmental Quality
Larry Knudsen	Counsel to the EQC	Department of Justice

NAME	TITLE	ORGANIZATION
Wayne Thomas	Umatilla Program Manager	Department of Environmental Quality
James Bacon	Program Manager for Chemical Demilitarization	U.S. Army
Mark Evans	Chief, Operations Team	U.S. Army Project Manager for Chemical Stockpile Disposal
Rick Holmes	Member, Operations Team	U.S. Army Project Manager for Chemical Stockpile Disposal
Loren Sharp	Deputy Project Manager, Umatilla Chemical Agent Disposal Facility	Raytheon Demilitarization Company
Karyn Jones	President	G.A.S.P.
Thomas Stibolt, M.D.	Consultant	Representing G.A.S.P., Oregon Wildlife Federation, Oregon Sierra Club, and other petitioners
Richard Condit	Counsel	Representing G.A.S.P., Oregon Wildlife Federation, Oregon Sierra Club, and other petitioners
Mick Harrison	Counsel	Representing G.A.S.P., Oregon Wildlife Federation, Oregon Sierra Club, and other petitioners
Dr. David Kosson	Chair	National Research Council Committee on Review and Evaluation of the Army Chemical Stockpile Disposal Program (National Academy of Sciences)
Dr. Walter May	Member	National Research Council Committee on Review and Evaluation of the Army Chemical Stockpile Disposal Program (National Academy of Sciences)
Dr. Kathryn Kelly	Member	National Research Council Committee on Review and Evaluation of the Army Chemical Stockpile Disposal Program (National Academy of Sciences)
Don Siebenaler	Study Director	National Research Council Committee on Review and Evaluation of the Army Chemical Stockpile Disposal Program (National Academy of Sciences)

Mark Evans: Part of my job is to serve as the liaison between the Army and the National Research Council, it's one of the highest pleasures and honors that I have in my job. And we do take very close to heart their comments on the Change Management Process. Part of what drives the tiered schedule to be longer than some may like, is the need to put the time in to correctly and adequately engage the public stakeholders in the decision process. The engineers among us will get frustrated because that adds time to the process, but that is kind of what drives some of the schedule durations that you've seen, and [unintelligible] we've discussed them before, so I think it is a very good note to make and I can tell you we have every intention of following through on the commitments we have made relative to change management.

Stephanie Hallock: Madame Chair, can I add one thing?

Commissioner Whipple: Sure.

Stephanie Hallock: I just wanted to gently take issue or bring to your attention with one thing you said about—in response to the cost questions, that all else is equal. I don't think that, just based on the discussion today, that I certainly feel that I understand the alternative that you would be proposing and that it is in fact equal in terms of protection of human health and the environment, and if you do decide to have a Class 3 Permit Modification proposal or some further discussion with the Commission about it, I think that we're going to need a lot more information rather than you just assuring us that it is equal.

Mark Evans: Oh, absolutely, and we've talked about having a bounding estimate on the risk issue which is why I can say today these things appear to be equal, and the need to get demonstrated data to back up whether the bounding things we put in—bounding estimates by definition have a degree of engineering assumption. I would prefer less engineering assumption, more demonstrated data, to support the position that it takes, but I totally agree with you. Watch our change management process, the first tier it has to clear is the risk tier before we even talk about it from any other perspectives. I agree with you that that burden has yet to be satisfied, it's early in that process, we would have to satisfy that burden prior to us even moving forward.

Commissioner Whipple: Thank you. We're actually, by the clock on the wall, we're along toward quarter to twelve. We probably haven't asked all the questions we'd like to yet, but I think, my question to Department staff would be—you certainly have some sense, I think, of some specific questions relative to the Commission, and what staff responsibilities are, you know well. Do you have enough information to review this and then prepare to reply to us, I guess, or to address a reply to the Commission?

Wayne Thomas: Madame Chair, I think we have enough comments from the Commissioners to enter into a dialogue with the Army on this issue and to report back to you at a future meeting where the Department stands on this question. We will begin that immediately

Commissioner Whipple: Thank you all very much for being here.

[Commissioner Whipple offers a opportunity to County Commissioners Doherty and Brosnan to make comments to the Commission. They both decline to comment at this time. After a lunch break the Commission re-convened. The National Research Council (NRC) gave a presentation concerning the findings and recommendations contained in an NRC report released August 11, 1999 ("Carbon Filtration for Reducing Emissions from Chemical Agent Incineration") The NRC presentation is not included in this transcription (See Attachment C). Immediately after the NRC presentation, a representative from the Army gave a brief presentation concerning the design of the carbon filter system at the Umatilla facility. This portion of the meeting was not transcribed.]

Commissioner Whipple: Now we're going to re-convene. We'd like to hear now from the group representing G.A.S.P., so if you would introduce yourselves, we'll continue on.

Karyn Jones: My name is Karyn Jones and I am here representing G.A.S.P. With me here is Professor Tom Stibolt, and Richard Condit, our legal counsel, and Mick Harrison, another attorney of ours, will be joining us by speaker phone. I want to re-iterate that we are here today because of our concerns over human health, worker safety, and the environment. With that, I would like to turn this over to Tom, and he'll be followed by Richard and Mick.

Thomas Stibolt: Thank you Karyn. I am Doctor Tom Stibolt, I'm a pulmonary and critical care physician here in Portland. I actually have an interest in incineration that goes back about 12 years at this point. I was part of the original Metro task force that was looking at municipal incineration when Metro was considering putting in a municipal solid waste incinerator in St.

ATTACHMENT C

"Carbon Filtration for Reducing Emissions from Chemical Agent Incineration"

Findings and Recommendations
Presented to the Environmental Quality Commission
by

Dr. David Kosson, Chair
National Research Council
Committee on Review and Evaluation of the Army Chemical Stockpile Disposal Program
National Academy of Sciences

August 18, 1999

CARBON FILTRATION FOR REDUCING EMISSIONS FROM CHEMICAL AGENT INCINERATION

Committee on Review and Evaluation of the Army Chemical Stockpile Disposal Program
Board on Army Science and Technology
Commission on Engineering and Technical Systems
National Research Council

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NOTICE: The project that is the subject of this report was approved by the Governing Board of the National Research Council, whose members are drawn from the councils of the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine. The members of the committee responsible for the report were chosen for their special competencies and with regard for appropriate balance.

The National Academy of Sciences is a private, nonprofit, self-perpetuating society of distinguished scholars engaged in scientific and engineering research, dedicated to the furtherance of science and technology and to their use for the general welfare. Upon the authority of the charter granted to it by the Congress in 1863, the Academy has a mandate that requires it to advise the federal government on scientific and technical matters. Dr. Bruce M. Alberts is president of the National Academy of Sciences.

The National Academy of Engineering was established in 1964, under the charter of the National Academy of Sciences, as a parallel organization of outstanding engineers. It is autonomous in its administration and in the selection of its members, sharing with the National Academy of Sciences the responsibility for advising the federal government. The National Academy of Engineering also sponsors engineering programs aimed at meeting national needs, encourages education and research, and recognizes the superior achievements of engineers. Dr. William A. Wulf is president of the National Academy of Engineering.

The Institute of Medicine was established in 1970 by the National Academy of Sciences to secure the services of eminent members of appropriate professions in the examination of policy matters pertaining to the health of the public. The Institute acts under the responsibility given to the National Academy of Sciences by its congressional charter to be an adviser to the federal government and, upon its own initiative, to identify issues of medical care, research, and education. Dr. Kenneth I. Shine is president of the Institute of Medicine.

The National Research Council was organized by the National Academy of Sciences in 1916 to associate the broad community of science and technology with the Academy's purposes of furthering knowledge and advising the federal government. Functioning in accordance with general policies determined by the Academy, the Council has become the principal operating agency of both the National Academy of Sciences and the National Academy of Engineering in providing services to the government, the public, and the scientific and engineering communities. The council is administered jointly by both Academies and the Institute of Medicine. Dr. Bruce M. Alberts and Dr. William A. Wulf are chairman and vice chairman, respectively, of the National Research Council.

This is a report of work supported by Contract DAAD19-99-C-0010 between the U.S. Army and the National Academy of Sciences. Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the view of the organizations or agencies that provided support for the project.

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COMMITTEE ON REVIEW AND EVALUATION OF THE ARMY CHEMICAL STOCKPILE DISPOSAL PROGRAM

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Executive Summary

The Committee on Review and Evaluation of the Army Chemical Stockpile Disposal Program (Stockpile Committee) of the National Research Council has endorsed incineration (with comprehensive air pollution control systems) as a safe and effective procedure for destroying chemical agents and munitions. Recognizing, however, that some public opposition to incineration (based primarily on substances of potential concern [SOPCs] that could escape into the atmosphere with the combustion gas) has always existed, the committee also recommended that the Army study the addition of a carbon filtration system to improve the existing pollution abatement system. This recommendation reflected the committee's belief that (1) reductions in emissions resulting from carbon filtration systems, however small, could increase public confidence, and (2) a carbon filter would virtually eliminate the possibility of an accidental release of a chemical agent through the stack.

When the first recommendations were made in 1991 and 1992, carbon filters were being introduced in Europe. Since then, the Army has evaluated the European experience and decided to add carbon filters to the baseline incineration systems for the disposal of chemical weapons stockpiles at Anniston, Alabama; Umatilla, Oregon; and Pine Bluff, Arkansas. Carbon filters are called for in the Resource Conservation and Recovery Act (RCRA) permits for the Anniston, Umatilla, and Pine Bluff sites, where construction of the disposal facilities is already under way.

Since these decisions were made, data from trial burns conducted at the operating Tooele Chemical Agent Disposal Facility (TOCDF) near Tooele, Utah, have become available. Although this facility does not have a carbon filtration system, the data show very low emitted concentrations of SOPCs, including dioxins and metals. The concentrations measured at the TOCDF were either the lowest or among the lowest emitted concentrations in the Environmental Protection Agency's (EPA's) Hazardous Waste Combustor Emissions Database. Chemical agent, if present at all, was below the detection limit, which is also below the levels generally believed to have deleterious environmental or health effects. Nevertheless, an Army study modeling the performance of carbon filters concluded that they would reduce many SOPCs to even lower levels. The committee concurs with this judgment.

The carbon filter system, including associated gas conditioning equipment designs, had not been finalized at the time this report was prepared. Suggested design alternatives were available, however, and the committee concluded that an effective pollution abatement system carbon filter system (PFS) design could be implemented.

The Utah Department of Environmental Quality's Division of Solid and Hazardous Waste, which conducted the health risk assessment (HRA) for the Tooele facility, determined that the health risk to the public posed by the incinerator stack gas emissions was below the level of regulatory concern. HRAs have also been conducted by Army contractors for the Anniston and Umatilla facilities in which the effects of adding carbon filters to the baseline incineration system pollution abatement systems were considered, but only in terms of changes in the exhaust gas flow rate and temperature, not reduction in emissions of SOPCs. These studies did not quantitatively evaluate the potential benefits of the PFS, but even without carbon filtration systems, emissions are expected to be below the levels of regulatory concern.

Based on quantitative risk assessments (QRAs) (estimates of the probability and consequences of accident scenarios that could lead to a release of agent) completed at Tooele and under way at Anniston and Umatilla, the increased risk to the public from an accidental release of agent associated with carbon filters was found to be negligible (i.e., orders of magnitude below the risks people face every day). This was not so for worker risk. In the Anniston QRA analysis carried out using the Phase 2 QRA from the TOCDF, modified for the presence of a PFS, the only type of upset condition that would increase the risk of agent release was blockage of the exhaust gas flow by the PFS coupled with loss of the induced draft (which maintains the pressure drop for the exhaust gas flow). The risk of an explosion of agent vapor caused by blockage of the PFS represents 3 percent of the total worker risk. Individual worker fatality risk from agent over the facility life attributable to upsets in the pollution abatement system are estimated at 3.3×10^{-5} with the PFS and 1.1×10^{-5} without the PFS. This is in contrast to total worker risk from agent over the facility life of 4.1×10^{-4} as estimated for TOCDF. These findings also can be compared with the worker accidental death rates of 3×10^{-5} *per year* for manufacturing and 1.5×10^{-4} *per year* for construction industries during 1996. The increased risk at the TOCDF is within the range of the uncertainty of worker risk analysis at the facility but significant enough to warrant further evaluation.

The QRAs assess the risk of accidental releases of chemical agent, but they do not address "normal" industrial risk to workers. Hazards to workers from operating and maintaining an industrial facility (hazards not related to agent) will be evaluated during design and prior to commissioning, as part of the health, safety, and environmental evaluations for baseline facilities. If carbon filters are used, they will be included in these evaluations and the risk management and safety programs of each facility. Two risks that are frequently mentioned in this connection are risks associated with potential fires and risks during disposal of the carbon. PFS design and monitoring plans substantially mitigate the risk of potential carbon fires. The amount of potentially contaminated carbon from the PFS that will require disposal is small in comparison to the amount of agent-contaminated carbon that will require disposal from the treatment of the ventilation air for the facility.

The QRAs for three sites (Tooele, Anniston, and Umatilla) to date all confirm the committee's previous observations: (1) the major hazard to the public is from the stored agent and munitions in the stockpile itself; and (2) the risk introduced by stockpile disposal processing is relatively small (less than 1 percent of the stockpile storage risk). Major changes in a RCRA permit may engender a considerable delay that would increase the overall risk to the public. However, the magnitude of the increased storage risk depends on the length of the delay (which is uncertain). The increased risk from prolonged stockpile storage has been estimated on a *per year of storage* basis. For the population 2 to 5 km from the Anniston Chemical Agent Disposal Facility, the individual public fatality risk is 1.4×10^{-5} per year, and the societal public fatality risk is 2.6×10^{-2} per year. This risk is in contrast to the disposal processing risks for the same population of 3.8×10^{-8} per year (individual public fatality risk) and 1.8×10^{-5} (societal public fatality risk). Thus, the *per year* risk from storage is at least three orders of magnitude higher than the risk from disposal processing. Hence, very short delays would increase public risks more than the total public risk from disposal. A delay of approximately one year would result in increased individual public risks of the same order of magnitude as the estimated increase attributable to the PFS in individual worker fatality risk over the *entire* period of disposal processing. Consequently, public risk will be minimized by the expeditious safe destruction of the stockpile.

Conceptually, the committee agrees with the Army's decision to proceed with the current designs at Anniston and Umatilla and not to alter the operating configurations of JACADS and the TOCDF. Removing or adding carbon filters at this point is likely to cause delays that will increase the risk to workers and the public. However, potential increases in worker risk from the carbon filters, which were initially estimated to be small, require further evaluation. To mitigate the potential adverse consequences of adding carbon filters at Anniston and Umatilla, worker risk should be evaluated quickly and managed effectively, including changing the PFS design, if necessary.

The Army's initial attempts at public outreach using its change management process (CMP) in PFS decision making did not elicit meaningful public involvement or comment during the decision process, and several shortcomings of the CMP have now become apparent. First, public involvement must be initiated much earlier in the process of evaluating change. For example, public involvement could have helped the

Army formulate the questions to be answered during the PFS risk evaluation. Second, public involvement should allow for public input prior to making decisions on major process changes, even if initial assessments indicate that no change is preferred. Third, for the CMP public involvement process to be credible and engender public trust, the Army must provide clear guidelines for initiating the CMP, which should not be circumvented by executive decision.

The Army's decisions not to change the configurations at Tooele, Anniston, and Umatilla were made in the context that the original intent of the PFS was to reduce risk and increase public confidence. These goals were to be achieved by adding another air pollution control system component to polish the effluent and curb whatever pollutants would have been emitted without the PFS. However, the results of the Army's analysis showed that changes to risk would be small, that these changes could be improvements or degradations depending on the population considered and the uncertainty analysis, and that the risks could be different for the public and workers. In addition, the Army's presentation of the risk evaluations was difficult to understand and was not issued in a self-contained document delineating (1) comparisons of each risk component with and without the PFS and (2) the Army's rationale for making no changes to the current site configurations. These crucial lapses all but precluded the public from following the process or influencing the results.

FINDINGS AND RECOMMENDATIONS

The estimated concentrations and emission rates of SOPCs from chemical agent incinerator operations developed during the permitting processes for the Anniston Chemical Agent Disposal Facility and the Umatilla Chemical Agent Disposal Facility were below the thresholds of regulatory concern, whether or not a passive carbon filtration system (like the PFS) was included in the facility design. Therefore, the committee considers PFS to be risk neutral to off-site populations.

The addition of a PFS to the PAS would probably reduce the already low emissions of some SOPCs during normal, transient, and upset operating conditions. However, a PFS would also increase worker risk by making the facility more complex and by introducing new scenarios for potential facility upsets and failures. The extent of the increase in worker risk is not clear because all of the applicable risk evaluations (e.g., Phase 2 QRAs and health, safety, and environmental evaluations) and resulting risk mitigation measures have not yet been completed. Preliminary assessments, however, indicate that the increase in worker risk would be small.

Significant changes in permitted facility designs require permit modifications, which could cause substantial delays. Because risk analyses consistently indicate that the storage risk to the public and workers is much greater than the processing risk, changing the permitted configuration at any stockpile site is likely to increase the overall risk by delaying destruction of the stockpile.

Finding 1a. The reported emitted concentrations of SOPCs measured during trial burns at the JACADS and TOCDF incinerators are among the lowest reported to the EPA. TOCDF emissions are the lowest, or at least one of the lowest, in dioxins, mercury, cadmium, lead, arsenic, beryllium, and chromium. The reported emissions of some SOPCs were based on the analytical detection limit for the constituent, which means the actual concentration could be much lower than the reported concentration. Maximum emitted concentrations from JACADS were used for the HRAs for other baseline facilities to ensure that estimates of risks would be conservative.

Finding 1b. In 1992 and 1994, the NRC recommended that the Army investigate using carbon filters for two purposes: (1) to contain transient stack emissions or accidental releases of agent and (2) to increase public confidence in incineration. Activated carbon filters in use at several large incinerators in Europe meet very stringent regulations on emissions of chlorinated dioxins/furans and are considered to be the state-of-the-art technology for this purpose. Based on preliminary design evaluations, activated carbon in the PFS of the Army's baseline incineration system is likely to have sufficient adsorption capacity to reduce emitted concentrations of dioxins, furans, HD, VX, and GB for more than a year of normal operations before the activated carbon would have to be replaced. The activated carbon would also have the capacity to adsorb a chemical agent in case of a major upset; however, a major upset would necessitate the immediate replacement of the activated carbon.

The addition of carbon filters to a baseline incineration PAS does not appear to reduce the health risk to

the surrounding population substantially because the health risk is already small (see Finding 1a). Nevertheless, reinforcing public and worker confidence is an important goal.

Recommendation 1. The Army should only consider removing the carbon filtration system from the permitted designs of the Anniston, Umatilla, or Pine Bluff facilities if, after a thorough implementation of the change management process to ensure meaningful public involvement, the public supports that decision.

Finding 2. Based on the evaluation of preliminary PFS design alternatives, an effective design for the PFS is feasible. Operating facilities in several countries now have significant experience in the design and operation of activated carbon filters.

Recommendation 2. The Army should take advantage of the experience of other users of carbon filters through appropriate consultation.

Finding 3. The Army has evaluated the implications of adding or removing passive carbon filter systems to the baseline incineration systems at the Tooele, Anniston, and Umatilla disposal facilities. Some of the impacts on risk to public health from stack emissions were evaluated by comparing the HRAs for the existing baseline facilities to estimates of the upper bound of public health risk posed by the addition of the PFS. However, the potential reductions in public health risk were not estimated, and the evaluations of impacts to off-site populations were incomplete.

An estimate of the impact on risk of accidents leading to agent-related public fatalities was made by expanding the Anniston and Umatilla Phase 1 QRAs to consider the addition of the PFS. The impact of the PFS on worker risk, which is not evaluated in the Anniston and Umatilla Phase 1 QRAs, was estimated by extrapolating the Tooele Phase 2 QRA results (which does include worker risk) to these other facilities. The Phase 1 QRAs for the Anniston and Umatilla facilities were also used to estimate increases in risk to the public from extended storage of the stockpile due to the PFS. Thus, the QRA evaluations completed to date are initial estimates of the magnitude of increased risk to the public from accidental releases of agent resulting from the addition of the PFS, but they are not complete evaluations of worker risk. Moreover, the range of potential delays to stockpile destruction caused by permit modifications and physical changes to the current site-specific baseline incineration configurations has not been defined.

Based on these estimates, the Army concluded that "[the] current plan to install and operate the PFS at the ANCDF [Anniston] and the UMCDF [Umatilla] remains the best course of action for maximizing human health and environmental protection," and that the TOCDF should continue to operate without a PFS. The decision to continue with the current configurations at permitted facilities eliminates increases in risks to the public and workers from potential delays in stockpile destruction caused by facility modifications or permit changes. Although worker risk from current PFS configurations is uncertain, based on the available risk estimates and projected schedules, the committee concurs with the Army's conclusion.

Recommendation 3. To minimize increased risks to off-site populations and on-site workers from delays in stockpile destruction, the Army should proceed with the current configurations, which include carbon filtration systems at Anniston and Umatilla, and should continue operations at Tooele, which does not have a carbon filtration system.

Finding 4. Only the Phase 1 Anniston and Umatilla QRAs have been completed. The risk of acute hazards to workers, probably the receptors at greatest risk from a mishap involving the PFS, has not been adequately characterized. Early initiation of the Phase 2 QRAs could identify these risks while facility design and construction are in progress and give the Army greater flexibility to modify facility designs and operating procedures, if necessary.

Recommendation 4a. The site-specific Phase 2 QRAs for Anniston, Umatilla, and Pine Bluff, which would identify and analyze specific failure modes, should include a complete evaluation of worker risk associated with the addition of the pollution abatement system filter system. The Phase 2 QRAs for each site should be initiated as soon as possible and should be completed and reviewed by independent technical experts before systemization of the facilities at Anniston, Umatilla, and Pine Bluff is completed.

Recommendation 4b. A risk management plan should be developed to minimize worker risk during the operation and maintenance of the pollution abatement system

filter systems. The evaluation of operating and maintenance risks should include the operational experience of similar systems. If the increased risk to on-site workers is found to be substantial, the Army should consider making modifications, as long as they do not substantially increase overall worker or public risk from prolonged storage.

Finding 5. If increased worker risks and hazards are identified, it is not clear what steps the Army would take to mitigate them. Nor does the Army have a clear decision basis for balancing reductions in public risk and increases in worker risk.

Recommendation 5. The Army should clarify to the public and facility workers the risk management actions that would be taken if increased worker risks are identified. The Army should also clarify the decision basis for balancing reductions in public risk against increases in worker risk while fulfilling its mandate to protect both workers and the public.

Finding 6. The PFS was assumed to have no effect on concentrations of SOPCs in the HRA calculations for Anniston and Umatilla. The effects of SOPCs emitted from the stacks at these facilities have been estimated to be below the thresholds of regulatory concern without the benefit of the PFS. However, changes from installing a PFS have not been determined in a way that facilitates quantitative comparisons.

Recommendation 6. Future health risk assessments should include estimates of emitted and ambient concentrations of SOPCs, with and without the PFS, for all substances that contribute significantly to the overall risk. Because PFS performance cannot be based on actual measurements, the analysis should consider the implications of reducing emissions to both the method detection limit and the levels indicated by engineering calculations, including quantitative evaluations of the uncertainties associated with each risk estimate. The results, including the acute and latent risks, should be reviewed by independent technical experts. The results should then be presented in a way that facilitates public input to decision making.

Finding 7. Because of the length of time required to complete the preliminary PFS risk assessment, the fact that this evaluation is still incomplete, and the status of construction activities at Anniston and Umatilla, meaningful public involvement in the decision to include the PFS at these sites is no longer possible. The CMP Plan and the CMP Public Involvement Outreach Plan were not effectively implemented during the Army's analysis of the PFS. The lack of public involvement in this process represents a lost opportunity for the Army to develop its CMP and to implement the CMP public outreach process.

Recommendation 7a. The health risk assessment and quantitative risk assessment for Pine Bluff should be completed as quickly as possible and communicated to the public in a timely manner so that there can be meaningful public involvement in the decision process to retain or remove the carbon filter system. The risk assessments should be subject to independent expert review and the findings incorporated into the decision-making process.

Recommendation 7b. The Army should continue to refine its change management process and the change management process public involvement plan. Public involvement should be an integral part of future evaluations of the pollution abatement system filter system, especially at Pine Bluff. The committee repeats its recommendation that the Army involve the public meaningfully in the Chemical Stockpile Disposal Program as a whole.

S.O

HARDY MYERS
Attorney General

FILE

99-09 10

DAVID SCHUMAN
Deputy Attorney General

DEPARTMENT OF JUSTICE
TRIAL DIVISION

STATE OF OREGON
DEPARTMENT OF ENVIRONMENTAL QUALITY
RECEIVED
JUN 09 1999
HERMISTON OFFICE

June 7, 1999

Mr. Wayne Thomas
Department of Environmental Quality
403 E Hurlburt #117
Hermiston, OR 97838

Re: *G.A.S.P., et al. v. Environmental Quality Commission, et al.*
Multnomah County Circuit Court Case No. 9708-06159

Dear Wayne:

Enclosed are copies of the final judgment and Judge Marcus' opinion and order in the above case. Petitioners have 30 days from the date of entry of judgment to file a notice of appeal to the Oregon Court of Appeals. We think an appeal is likely.

Very truly yours,

Stephen K. Bushong
Attorney-in-Charge
Special Litigation Unit

TRI40899/SKB/tgh
Enclosures
cc: Larry Edelman

99-0941

IN THE CIRCUIT COURT OF THE STATE OF OREGON
IN AND FOR THE COUNTY OF MULTNOMAH

G.A.S.P., SIERRA CLUB, OREGON WILDLIFE FEDERATION, KARYN JONES, SUSAN JONES, HEATHER BILLY, DEBORAH BURNS, JANICE H. LOHMAN, LEANDRA PHILLIPS, MERLE C. JONES, CINDY BEATTY, ANDREA E. STINE, DOROTHY IRISH, MARY BLOOM, ROBERT J. PALZER, JANET NAGY, LaDONNA KING, JOHN SPOMER, CHRISTINE CLARK, STUART DICK, GAIL HORNING, DAVID BURNS, PIUS A. HORNING, KARLA STUCK, and MELANIE BELTANE,

Plaintiffs

vs.

ENVIRONMENTAL QUALITY COMMISSION of the STATE OF OREGON, and DEPARTMENT OF ENVIRONMENTAL QUALITY of the STATE OF OREGON,

Defendants

vs.

UNITED STATES ARMY,

Intervenor

Case No. 9708-06159

JUDGMENT ON REVIEW
ORS 183.484(4)

The orders of the Department of Environmental Quality and the Environmental Quality Commission (DEQ/EQC) subject of this proceeding are AFFIRMED.

June 1, 1999

Michael H. Marcus, Judge

99-0942

IN THE CIRCUIT COURT OF THE STATE OF OREGON

IN AND FOR THE COUNTY OF MULTNOMAH

G.A.S.P., SIERRA CLUB, OREGON WILDLIFE FEDERATION, KARYN JONES, SUSAN JONES, HEATHER BILLY, DEBORAH BURNS, JANICE H. LOHMAN, LEANDRA PHILLIPS, MERLE C. JONES, CINDY BEATTY, ANDREA E. STINE, DOROTHY IRISH, MARY BLOOM, ROBERT J. PALZER, JANET NAGY, LaDONNA KING, JOHN SPOMER, CHRISTINE CLARK, STUART DICK, GAIL HORNING, DAVID BURNS, PIUS A. HORNING, KARLA STUCK, and MELANIE BELTANE,

Plaintiffs

vs.

ENVIRONMENTAL QUALITY COMMISSION of the STATE OF OREGON, and DEPARTMENT OF ENVIRONMENTAL QUALITY of the STATE OF OREGON,

Defendants

vs.

UNITED STATES ARMY,

Intervenor

Case No. 9708-06159

OPINION AND ORDER DENYING SUPPLEMENTAL PETITIONS AND FOR FINAL JUDGMENT

Defendants' motion for final judgment (in the form of a Supplemental Motion for Summary Judgment) and petitioners' motions for leave to file a First and Second Petitions for review came on for hearing June 1, 1999. Petitioners appeared through counsel Stuart A. Sugarman and (by telephone) Richard E. Condit. Respondents appeared through counsel Stephen K. Bushong.

Intervenor appeared through counsel (by telephone) Mark Nitcyzynski. The matters were argued and submitted for decision.

Background

On December 6, 1998, I concluded that the orders of the Department of Environmental Quality and the Environmental Quality Commission (DEQ/EQC) granting permits to intervenor United States Army (Army) for storage and treatment of hazardous waste and for discharge of air contaminants in connection with the Army's construction and operation of the Umatilla Chemical Agent Disposal Facility near Hermiston, Oregon were ambiguous in one respect only, and I accordingly "remand[ed] these orders to the respondents to determine what role the PAS carbon filters play in their analysis. On remand, Petitioners may choose to offer new evidence which respondents may consider or decline to consider."

On December 14, 1998, petitioners' counsel wrote to respondents asserting that "[y]our task is now to have a hearing to evaluate the use of Pollution Abatement System (PAS) carbon filters and to decide whether they are a critical component (s most of the commission stated earlier) or merely an 'extra safety precaution' as was claimed in circuit court." The letter proceeded to renew the petitioners' request for a contested case proceeding, and to argue at some length that the commissioners had already articulated that the filters were critical, that evidence (all or most of which was not part of the record on which the original orders were based) suggested that the filters added rather than reduced risks associated with operation of the proposed facility and militated in favor of conclusions that the facility was not consistent with safety to the public or the environment and did not represent the best available technology.

On February 4, 1999, the DEQ responded to the petitioners' letter with a brief letter stating

that the Commission would consider a revised order at its March 19, 1999, meeting, that the Commission would accept written comments *on the revisions to the order*, and that "we are denying your request for a contested case hearing on this matter."

On March 19, 1999, the EQC issued an "Order Clarifying Permit Decision" reciting that it had not relied on the PAS carbon filters in concluding that the facility would "not have any major adverse effects on public health and safety, or the environment of adjacent lands" or that the facility would use the "best available technology for destruction of agent at Umatilla." The order further recited that the EQC "has required inclusion of the PAS carbon filters" as "an additional measure of safety." In its post-remand submissions to this court, the respondents announced an intention to hold at least one work session on June 24, 1999, "on PAS carbon filters" based on "new information that has recently come to DEQ/EQC's attention."

Petitioners' proposed First Supplemental Petition seeks review of the February 4, 1999, response to their December 14, 1998 letter; the Second Supplemental Petition seeks review of the March 19, 1999, "Order Clarifying Permit Decision."

Analysis

Most, if not all, of the information the petitioners submitted to respondents and to this court constitute evidence that was not part of the record that produced the permits. Although EQC was free to consider that information before clarifying respondents' original orders granting the permits, it was free merely to clarify its order and separately to consider the new evidence. That EQC chose to solicit comment does not change what happened on March 19, 1999, into something other than a clarification of the original orders; petitioners' letter in some part constitutes a comment on precisely how the EQC should clarify its orders.

During the course of the hearing on these motions, counsel for respondents conferred with representatives of the respondents and clarified that the scope of the June 24, 1999, will be limited to the PAS carbon filters and new evidence concerning their fate. Counsel also revealed the understandable interpretation of petitioners' December 14, 1998, letter as a repetition of arguments that the original decision was wrong, rather than a demand for reexamination of the permits themselves (in the form of a contested case hearing) in light of post-hearing evidence concerning the Army's viability as operator of the proposed facility, the validity of the respondents' assessment of risks to health, safety, and environment, and the accuracy of the respondents' conclusion that the proposed facility would employ the "best available technology."

The letter is, however, also susceptible to its apparently intended interpretation - as a demand for revocation of the permits and reconsideration based on new evidence. Counsel for respondents again conferred with respondents' representatives and agreed that respondents would now consider the letter as demanding:

a.Revocation of the permits based on new evidence,

b.Reconsideration based on new evidence, and

c.A contested case proceeding in the course of considering revocation and reconsideration.

Counsel for respondents also agreed that they would attempt to make a determination of how they would respond to the letter so construed by mid August, by which time they should have new information from the Army and from the National Research Council concerning the fate of several important components which petitioners assert the Army already knows it cannot and will not employ in the proposed facility as presented to respondents. Counsel for respondents and petitioners may agree to a later response date in light of the tremendous amount of material involved.

If respondents decide not to conduct further proceedings in response to petitioner's demands, petitioners may seek redress in the manner contemplated by ORS 183.490. If respondents consider petitioners' material but reach a decision petitioners find unsatisfactory, petitioners can seek further relief from this court in the manner contemplated by ORS 183.484. But nothing suggested by the petitioners calls for interrupting the appropriate process, whereby it is respondents that have the responsibility to consider the new evidence and to exercise their discretion in the manner delegated to them by law, and the courts have only the limited role accorded to them under the Administrative Procedures Act.

Petitioners do identify one issue that is theoretically ripe for review, whether the EQC's finding that the PAS carbon filters provide "an additional measure of safety" is adequately supported by the record which closed in 1997. Because the significance of that issue is so slight in light of the respondents' proposed consideration of new evidence concerning those filters, I find unpersuasive any suggestion that I should exercise my discretion to allow a supplemental petition for that inquiry. Any interest in judicial efficiency can be adequately served by any party notifying the presiding court, in the likely event of a new petition, that this court has familiarity with the administrative record and the issues in this case.

Counsel for respondents has agreed on the record, however, that petitioners shall have 60 days from the date of this order in which timely to file a separate petition for judicial review on any of the subjects contemplated by either or both of their proposed supplemental petitions.

With respect to respondents' request for entry of judgment, I find that the March 19, 1999, "Order Clarifying Permit Decision" resolves the one ambiguity I identified in my previous OPINION AND ORDER on CROSS MOTIONS FOR SUMMARY JUDGMENT, and that

respondents are entitled to final judgment in their favor for the reasons stated in that Order and Opinion.June 1, 1999. Accordingly,

IT IS HEREBY ORDERED:

1. Respondents' "Supplemental Motion for Summary Judgment," considered as a motion for entry of final judgment, is GRANTED;

2. Petitioners motions to file supplemental petitions for review are DENIED;

3. Petitioners shall have 60 days from the date of this order in which to file a separate petition or petitions for judicial review on any of the subjects contemplated by either or both of their proposed supplemental petitions.

June 1, 1999

Michael H. Marcus, Judge

99-0912 SKB

IN THE CIRCUIT COURT OF THE STATE OF OREGON
FOR MULTNOMAH COUNTY
MULTNOMAH COUNTY COURTHOUSE
1021 SW 4th Portland, Oregon 97204
(503) 248-3022

June 4, 1999

RECEIVED
JUN 04 1999
Trial Division, Dept. of Justic
Salem, Oregon

STEPHEN K BUSHONG
Attorney at Law
DEPARTMENT OF JUSTICE
1162 COURT STREET NE, ROOM 100
SALEM OR 97310-0506

Bar#: 85130

GASP/Environmental Quality Commi
Case#: 970806159 C Civil Other

NOTICE OF ENTRY OF JUDGMENT
NOT DOCKETED

A Judgment was entered in the register of the Court in the above-noted case on June 2, 1999.

Judgment on Review
was NOT docketed in the Court judgment docket.

This notice is sent in accordance with ORCP 70B.

Note: Entering a judgment in the case register does NOT create a lien on real property.

Client(s) of Addressee:
ENVIRONMENTAL QUALITY COMMISSI
DEPARTMENT OF ENVIRONMENTAL QU

CC:
STUART A SUGARMAN
LESLIE JAUANNA WESTPHAL