



FRIDAY MAILING

10/31/97

INCLUDED IN THIS MAILING ARE:

- Announcements
- Final minutes from the July 9, 1997 Fernald Citizens Advisory Board meeting
- Letter from Jack Craig to Gene Willeke (Re: CBD notice for Silos 1 and 2)
- Letter from Gene Jablonowski to Johnny Reising (Re: Silo 3 ESD disapproval)
- Graph of Pounds of Uranium Discharged to GMR in 1997
- Graphs of Legacy Waste Characterization and Low Level Waste Shipping

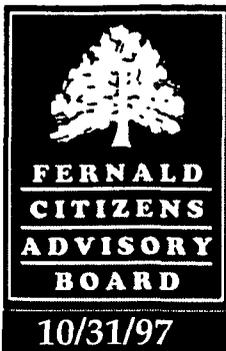
ANNOUNCEMENTS:

- FERNALD CITIZENS ADVISORY BOARD MEETING:** The Fernald Citizens Advisory Board will hold its next meeting on Saturday, November 15, 1997, at 8:30 a.m. in the Alpha Building.
- COMMUNITY REUSE ORGANIZATION (CRO) MEETING:** The monthly CRO meeting will be held on Tuesday, November 18, 1997, at 6:00 p.m. in the Ross High School Media Center, 3425 Hamilton-Cleves Highway.
- WASTE TRANSPORTATION COMMITTEE MEETING:** The Waste Transportation Committee of the Fernald Citizens Advisory Board will meet on Monday, November 24, 1997, at 6:00 p.m. in the Jamtek Building, 10845 Hamilton-Cleves Highway to review the Intermodal Transport Study Report.
- NATURAL AND CULTURAL RESOURCES COMMITTEE MEETING:** The Natural and Cultural Resources Committee of the Fernald Citizens Advisory Board will meet on Monday, November 24, 1997, from 7:00 to 9:00 p.m. in the Jamtek Building to review the Sitewide Excavation Plan, the Natural Resources Restoration Plan, and the Supplemental Environmental Projects for OU4.

QUESTIONS:

Please call John at [redacted] or Doug at [redacted] with questions or concerns. You may also fax or e-mail us at:

John	Fax: 281-3331	E-Mail: john.applegate@law.uc.edu
Doug	Fax: 648-3629	E-Mail: [redacted]



ANNOUNCEMENTS

ANNOUNCEMENTS (Continued):

- WASTE MANAGEMENT COMMITTEE MEETING:** The Waste Management Committee of the Fernald Citizens Advisory Board will meet on Monday, December 1, 1997, at 6:00 p.m. in the Jamtek Building to discuss the Silo 3 RFP.
- COMMUNITY REUSE ORGANIZATION (CRO) COMMITTEES:** The CRO has established committees. We will provide you with information on future meetings.
- ARASA CONTRACT:** The Alternative Remedial Action Subcontracting Approach (ARASA) contract was signed 10/20/97 for disposal of wastes from the Waste Pits. IT Corporation was the winner.

QUESTIONS:

Please call John at [REDACTED] or Doug at [REDACTED] with questions or concerns.
You may also fax or e-mail us at:

John FAX: 281-3331 E-MAIL: john.applegate@law.uc.edu
Doug FAX: 648-3629 E-MAIL: [REDACTED]



Chair
John S. Applegate

Members
James C. Bierer
Marvin W. Clawson
Lisa Crawford
Pamela Dunn
Constance Fox, M.D.
Darryl D. Huff
Thomas B. Rentschler
Warren E. Strunk
Robert G. Tabor
Dr. Thomas E. Wagner
Dr. Gene E. Willeke

Ex Officio
L. French Bell
Jack Craig
Gene Jablonowski
Graham Mitchell

Minutes from the July 9, 1997 Meeting

The Fernald Citizens Advisory Board met from 6:30 p.m. until 8:20 p.m. on Wednesday, July 9, 1997, at the Alpha Building, 10967 Hamilton-Cleves Highway, Harrison, Ohio. The meeting was advertised in local papers and open to the public. Time was reserved for public input.

Members Present:

John Applegate
French Bell
Jim Bierer
Marvin Clawson
Jack Craig
Lisa Crawford
Pam Dunn
Constance Fox
Gene Jablonowski
Laura Hafer for Graham Mitchell
Robert Tabor
Thomas Wagner
Gene Willeke
Thomas Rentschler

Members Absent:

Dan McElroy
Warren Strunk
Darryl Huff

Federal Official Present:

Mike Jacobs

Staff Present:

Kathleen Trail
Crystal Sarno
Douglas Sarno

About 15 spectators also attended the meeting, including members of the public and representatives from DOE, Fluor Daniel Fernald, and FRESH.

1. Call to Order

Chair John Applegate called the meeting to order at 6:20 p.m.

2. Announcements and New Business

Note: Since the name of the Fernald Citizens Task Force was changed to the Fernald Citizens Advisory Board in this meeting, these minutes will refer to events occurring before July 9th using the former name and events occurring on or after July 9th with the new name.

Applegate announced that the March and May Task Force Minutes have both been approved.

Applegate announced that Gloria McKinley has resigned from the Citizens Advisory Board due to health reasons. She feels she cannot effectively serve the Board, but wishes the Citizens Advisory Board well.

Applegate proposed restructuring the Citizens Advisory Board to allow the group to function better in response to an uneven and seasonal work load. The new structure would include the creation of a Steering Committee, composed of chairs of the standing committees, and the position of Vice Chair. The Steering Committee will serve as the primary planning body of the Citizens Advisory Board and will meet two to three times a year to evaluate progress on issues and to develop or revise the annual workplan. The proposed restructuring also calls for the creation of a Vice Chair position. The Steering Committee has unanimously recommended Jim Bierer for this position.

Applegate also proposed that a multi-year commitment be made with Phoenix Environmental Corporation. This would eliminate the need to renegotiate their contract every year.

Applegate expressed concern with the lack of membership at committee meetings. He recommended that the main topic of the September meeting be a roundtable discussion of membership issues which also addresses the structure and purpose of the standing committees.

Lisa Crawford moved that the official name of the Fernald Citizens Task Force be changed to the Fernald Citizens Advisory Board, since the term Task Force implies a short-term entity. Tom Wagner seconded that motion and added that the change be effective immediately. Crawford supported the ammendment. The name change was unanimously approved. All forms, ground rules, and stationery will be changed accordingly.

James Bierer suggested that two changes/corrections be made to the Ground Rules. He suggested that the third Ground Rule, fourth line, "members" should be changed to "member". He also suggested that under Committee Operations 3, Committee Recommendations, "recommendation" should be changed to "recommendations". Gene Willeke added that "active monitoring" should be changed to "reported to the full board on a regular basis." The motion was seconded and passed unanimously.

Applegate invited discussion on the issue of Jim Bierer being appointed Vice Chair; no comments were made. Applegate invited the motion to recommend to DOE that Jim Bierer be appointed as Vice Chair. Bob Tabor made the motion which was seconded by Tom Wagner. The motion was approved unanimously.

3. Committee Reports

Monitoring and Recycling Committee

Pam Dunn, Committee Chair, informed the Board that the Monitoring and Recycling Committee met on May 21st to discuss the Recycling Protocol and the Integrated Environmental Monitoring Plan. There will be a July 8th workshop on the Recycling Protocol; the Protocol will be finalized next week. Only recycling options within 25% of the lowest cost alternative will be considered. The committee's next meeting will be on July 23rd to discuss on-site treatment plans for mixed wastes.

Applegate asked how the monitoring of "hot spots" was going using the new surface scanning equipment. DOE and Fluor-Daniel said they were pleased with the new equipment.

Natural Resources Committee

Committee Chair Jim Bierer said that the Committee was still waiting to obtain site-wide restoration and excavation plans, which should arrive shortly. Last month, Eric Woods said that the first step would be to put up some aesthetic barriers.

Transportation Committee

Tom Wagner, Committee Chair, informed the Board that the Committee had not met since the last Citizens Advisory Board Meeting, but that the accelerated cleanup workshop had been very helpful. The Committee received information on the intermodal pilot study in Nevada, and the executive summary of the white metal box incident that occurred at Fernald a month or so ago. Wagner went to the Nevada Test Site Citizens Advisory Board meeting on July 4, 1997. He also attended the Protocol Meeting in Nevada. Both of these meetings dealt with transportation protocol. These groups generally meet quarterly, but will meet more often when issues require it. Wagner reported that the members of these groups appreciated our attendance because, by attending, we were indicating our sensitivity to their issues. Wagner believed that the majority of opposition appeared to come from city, county, and state representatives. The most active opposition to these issues came from state representatives who were opposed to any shipment of hazardous wastes. The Transportation Committee has sent a letter to DOE in support of a standardized protocol for shipment of wastes.

Wagner then asked DOE if they could receive information on the percent of total wastes from Fernald that are being shipped to the Nevada Test Site.

Crawford commented that there should be a National Transportation Committee to look at cross-country waste shipments.

Efficiency Committee

Committee Chair Bob Tabor stated that the committee was still trying to digest the Budgeting and Cost Tracking Systems information. The information introduced many possible issues that the Committee may want to explore. In their next meeting, they will discuss the scope of their work and the future direction of the Committee.

Applegate noted that Fernald has been in the news recently. He asked Jack Craig to comment on the award fee issue and the future of the Fluor Daniel contract.

Craig said the article to which Applegate referred was fairly factual. When the contract was signed with DOE four and a half years ago, the available fees were established. In the past quarter, Fluor-Daniel received slightly less than their usual fee. The reasons for this are detailed in a report available at the PEIC.

John Bradburne agreed with Jack Craig's assessment of the situation. He explained that Fluor Daniel's contract is designed so that the work is to be reviewed every six months. If they reach all goals in the six months, they will receive the full fee, but they will receive less if the goals are not met.

Tom Rentschler asked whether the newspaper article on waste transit was accurate, and whether there will be 135 rail cars to transport 780,000 tons of waste. It was agreed that the wording was not accurate. Rentschler requested copies of all press releases on rail transportation issues. Sue Walpole agreed to provide all past articles on transportation issues for his review.

Waste Management

Committee Chair Gene Willeke reported that they have been following progress on the silo decisions closely and the committee will be going to Brookhaven National Laboratory on July 16, 1997, to examine the microencapsulation technology. The committee hopes to be joined by representatives from EPA, DOE, and Fluor Daniel Fernald. Gene Jablonowski said that EPA's reaction to the Committee's recommendations was favorable.

4. Update on the DOE Accelerated Plan

The Efficiency Committee will examine the DOE Accelerated Plan and make a report to the full Citizens Advisory Board. The Committee will also make its own recommendations.

An issue for the Citizens Advisory Board to address is the availability of funds for the DOE Accelerated Plan. The Accelerated Plan depends on financing which may not be available. A shortfall in funds will extend the cleanup schedule.

The plan also contains some key assumptions, such as the re-injection of groundwater. The Efficiency Committee needs to comment on these assumptions.

Johnny Reising has agreed to be responsible and available for questions and comments. The first priority of the Efficiency Committee will be to examine the priorities list and to work with Reising to ensure we are all in agreement on these issues. The entire Citizens Advisory Board should, however, be involved in this project.

Applegate suggested a joint workshop with FRESH on the Accelerated Plan to be tentatively held in early September.

5. Waste Management Programmatic and Environmental Impact Statement

Doug Sarno provided a fact sheet on the WMPEIS. The current proposal does not contain assumptions for Fernald receiving wastes from outside sites. Sarno noted that this should not change or impact the shipping of wastes from Fernald, thus should not have an effect on the site.

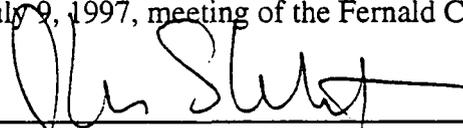
6. Public Comment

Applegate opened the floor for public comment. There was no public comment or additional business. He suggested that the next meeting take place on Saturday, September 20, 1997, and that a workshop be held in early September on site priorities.

7. Adjournment

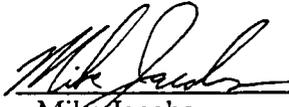
The meeting was adjourned at 8:20 p.m.

I certify that these minutes are an accurate account of the July 9, 1997, meeting of the Fernald Citizens Advisory Board.



John S. Applegate, Chair
Fernald Citizens Advisory Board

10/15/97
Date



Mike Jacobs
Federal Official

10/20/97
Date



Department of Energy

**Ohio Field Office
Fernald Area Office**

P. O. Box 538705
Cincinnati, Ohio 45253-8705
(513) 648-3155



OCT 21 1997

DOE-0067-98

**Mr. Gene Willeke, Chair
Miami University Institute of
Environmental Sciences
102 Boyd Hall
Oxford, Ohio 45056**

Dear Mr. Willeke:

**COMMENT RESPONSES TO LETTER DATED SEPTEMBER 23, 1997, FROM
MR. GENE WILLEKE TO JACK CRAIG**

The purpose of this letter is to formally transmit responses to your comments provided during the review of the Commerce Business Daily (CBD) notice for Silos 1 and 2 of Operable Unit 4 (OU4).

Enclosed are responses to the comments you provided on the subject. The CBD notice was issued on September 25, 1997, upon resolution of comments received from various stakeholders.

If you have any questions, please contact Nina Akgunduz at (513) 648-3110.

Sincerely,

for
Jack R. Craig
Director

Enclosure: As Stated

ATTACHMENT

**RESOLUTIONS TO THE FERNALD CITIZENS ADVISORY BOARD COMMENTS
ON THE SILOS 1 AND 2
PROOF OF PRINCIPLE TESTING CBD NOTICE**

Comment #1

The committee finds the ~~language~~ and style in which the CBD notice is written to be vague and lacking in detail, thus ~~potentially~~ excluding from consideration vendors who possess appropriate technologies but who ~~are not~~ familiar with the specific issues at Fernald. A few sentences describing the site, the ~~silos~~, and the K-65 material would greatly clarify the situation.

Resolution # 1

On page 3 of the CBD ~~notice~~, the description of Silo 1 and 2 residues was enhanced by the addition of the following ~~text~~, which has been utilized in a number of project-specific documents. "The ~~composition~~ of the contents in Silos 1 and 2 is primarily a wet, gray, silty clay with an average ~~moisture~~ content of 30%. The following are present within the residue volumes of the silos: in ~~excess~~ of 3700 Curies (Ci) of Ra-226, 600 Ci of Th-230, and 1900 Ci of Pb-210. It is also ~~estimated~~ that the silos contain more than 29 metric tons of uranium. Other significant metals ~~include~~ more than 118 metric tons of barium, 830 metric tons of lead, 2.6 metric tons of arsenic, ~~and~~ small quantities of gold."

Comment # 2

The term "proof of ~~principle~~" is used throughout the document but is not adequately defined.

Resolution # 2

On page 3 of the CBD ~~notice~~, Proof of Principle is defined by the following text. "Proof of Principle Testing will ~~demonstrate~~ that commercially-developed stabilization techniques can successfully treat ~~surrogate~~ Silos 1 and 2 residues."

Comment # 3

Microencapsulation should ~~be~~ defined specifically as polymer-based microencapsulation to avoid confusion with other ~~uses of~~ the term.

Resolution # 3

On page 3 of the CBD ~~notice~~, "microencapsulation" was modified by adding "polymer-based" in front of it.

ATTACHMENT

**RESOLUTIONS TO THE FERNALD CITIZENS ADVISORY BOARD COMMENTS
ON THE SILOS 1 AND 2
PROOF OF PRINCIPLE TESTING CBD NOTICE**

Comment # 4

The purpose of the notice, to identify technology vendors to receive the RFP, is not clearly stated from the beginning of the document.

Resolution # 4

In the first paragraph of the CBD notice, the following statements that FDF is requesting notifications of interest from vendors that have technical experience and the ability to perform the proof of principle testing is provided.

"Fluor Daniel Fernald (FDF), Prime Contractor for the United States Department of Energy's (DOE's) Fernald Environmental Management Project (FEMP), Fernald, Hamilton/Butler County, Ohio, seeks QUALIFIED SOURCE(s) to provide Proof of Principle Testing for the stabilization of non-radioactive surrogate of the approximately 9,000 cubic yards of Atomic Energy Act (AEA) 11(e)2 byproduct residues and bentonite stored aboveground in Silos 1 and 2 at the Fernald Operable Unit 4 (OU4)...This announcement is an advanced notification to determine qualified vendors for the proposed RFP...."

Comment #5

The notice identifies the need for "full-scale use of the applied technology without adequately describing what "full-scale" means. The terms "proven" or "demonstrated" might be more appropriate.

Resolution #5

On page 4 of the CBD notice, the following sentence was added to clarify "full-scale." " Full-Scale basis is defined as a process / facility that supported the remediation of waste beyond the Research and Development stage and was utilized in a commercial or government application. "

File-004 1078



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

OCT 16 1997

Mr. Johnny W. Reising
United States Department of Energy
Feed Materials Production Center
P.O. Box 398705
Cincinnati, Ohio 45239-8705

REPLY TO THE ATTENTION OF: SRF-5J

RE: Silo 3 ESD Disapproval

Dear Mr. Reising:

The United States Environmental Protection Agency (U.S. EPA) has completed its review of the United States Department of Energy's (DOE) draft *Explanation of Significant Differences for Operable Unit 4 Silo 3 Remedial Action (ESD)*, dated September 9th, 1997. The ESD was prepared to document the change in remedy for treatment and disposal of Silo 3 waste, consistent with the July 22, 1997 *Agreement Resolving Dispute Concerning Denial of Request for Extension of Time for Certain Operable Unit 4 Milestones*.

The ESD fails to compare the newly proposed stabilization alternatives with the performance criteria for vitrified material specified in the OU 4 ROD. Even though the Silo 3 material could not be vitrified, DOE needs to demonstrate that the new stabilization alternatives could meet the same standards established in the OU 4 ROD.

Therefore, U.S. EPA disapproves the ESD. U.S. DOE must submit responses to comments and a revised document within thirty (30) days of receipt of this letter. Please contact Jim Saric at (312) 886-0992 or myself at (312) 886-4591 if you have any questions regarding this matter.

Sincerely,

A handwritten signature in cursive script that reads "Gene Jablonowski".

Gene Jablonowski
Remedial Project Manager
Federal Facilities Section
SFD Remedial Response Branch #2

Enclosure

cc: Tom Schneider, OEPA-SW00
Bill Murphie, U.S. DOE-HDQ
John Bradburne, FERMCO
Terry Hagen, FERMCO
Tom Walsh, FERMCO

U.S. EPA TECHNICAL REVIEW COMMENTS ON
"DRAFT EXPLANATION OF SIGNIFICANT DIFFERENCES
FOR OPERABLE UNIT 4 SILO 3 REMEDIAL ACTION"

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

OCTOBER 1997

GENERAL COMMENTS:

Commenting Organization: U.S. EPA
Section #: Not applicable (NA) Page #: NA
Original General Comment #: 1

Commentor: Saric
Line #: NA

Comment: The draft explanation of significant differences (ESD) document provides reasonable explanations about why various alternate remedial actions were eliminated from further consideration. However, the ESD should more thoroughly and definitively explain why the remedial action selected in the Record of Decision (ROD) was eliminated (see Original Specific Comment No. 2). The text of the ESD should be revised to address this issue.

Commenting Organization: U.S. EPA
Section #: NA Page #: NA
Original General Comment #: 2

Commentor: Saric
Line #: NA

Comment: The text contains numerous references to the December 26, 1996, "melter incident." Use of the word "incident" does not adequately reflect the final outcome of the vitrification pilot plant (VitPP) project. The word "incident" should be replaced by a word or phrase that more specifically refers to the failed performance of the melter and its overall effect on the outcome of the VitPP project.

Commenting Organization: U.S. EPA
Section #: 3.2 Page #: NA
Original General Comment #: 3

Commentor: Saric
Line #: NA

Comment: The text provides an overview of chemical stabilization technologies successfully implemented at the site. The text should be revised to provide information, including quantitative information, regarding the implementation of these technologies to treat similar waste streams at other sites.

Commenting Organization: U.S. EPA
Section #: 1.4 Page #: 3
Original General Comment #: 4

Commentor: Barwick
Line #:

Comment: A list of documents which form the basis for this ESD must be included. The list of references may serve this purpose but should be reviewed to determine if it includes all appropriate documents. In addition, a sentence should be added to Section 1.4 explaining that the list of administrative record documents supporting this ESD is included as the

list of references.

Commenting Organization: U.S. EPA

Commentor: Barwick

Section #: 3.3

Page #: 10

Line #:

Original General Comment #: 5

Comment: The measure for whether a change can be documented via an ESD is whether the new remedy meets the performance standards of the existing remedy and not merely whether the new remedy could have been selected under the NCP. U.S. DOE has adequately addressed this on pages 29 through 31 but, due to the organization of the document, it is not clear. This section needs to be revised to illustrate that the new remedy will at least meet the performance standards for vitrification.

Reference to the NCP screening criteria may be helpful in explaining how U.S. DOE examined various options but those criteria are not the controlling factors. This ESD must specifically set forth the performance criteria for vitrification. The various remedies must then be compared to those performance standards and only those remedies found to be at least equivalent to the existing remedy may be implemented via an ESD. Remedies that cannot meet this standard could only be implemented through a ROD amendment.

This section needs to be restructured to more specifically list the performance standards of vitrification and clearly explain the evaluation process. For example, in Table 11, "Waste will be packaged in a manner that minimizes exposure during transportation" should be something like, "waste will be packaged in a manner which ensures that no individual will be exposed to any greater dose than [insert the dose estimated for vitrified materials], which was the estimated dose in the OU 4 ROD." The ESD should be revised to more thoroughly discuss the OU 4 ROD performance standards.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 3.5

Page #: 28

Line #: NA

Original General Comment #: 6

Comment: The proposed remedy described in the ESD encompasses both on-site and off-site treatment of Silo 3 waste. The ESD does not provide an adequate analysis of the off-site treatment option because discussion of transportation risks is limited to transportation of material that has undergone full treatment. The ESD does not adequately address safety concerns associated with shipping partially treated material. The ESD should be revised to specify required on-site pretreatment and packaging activities associated with shipment of partially treated material.

SPECIFIC COMMENTS:

Commenting Organization: U.S. EPA
Section #: 3.5
Original Specific Comment #: 1
Comment: Insert "and performance standards" after "remedial objectives."

Commentor: Barwick
Page #: 2
Line #: 23

Commenting Organization: U.S. EPA
Section #: 2.2
Original Specific Comment #: 2
Comment: U.S. DOE needs to clarify that this ESD concerns only a change in management of the Silo 3 contents and that other elements of the selected remedy related to silo structures, soils, perched groundwater, etc., are not being altered in any way.

Commentor: Barwick
Page #: 5
Line #: 24

Commenting Organization: U.S. EPA
Section #: 3.1
Original Specific Comment #: 3
Comment: The text discusses the proposed separation of the Silo 3 waste treatment process from the K-65 (Silos 1 and 2) waste treatment process. The text should include more detail regarding the inherent difficulties of vitrifying Silo 3 waste materials and provide an obvious justification for separating the treatment processes. For example, the text should include additional technical information about the difficulties associated with vitrifying a material with high sulfate and lead contents. In addition, the text should emphasize that the theoretical difficulties associated with vitrifying this type of waste were confirmed through the attempted vitrification of surrogate materials similar to Silo 3 waste materials. Finally, the text should clarify that mixing Silo 3 wastes and the K-65 wastes will not make vitrification of the mixture possible.

Commentor: Saric
Page #: 7
Line #: NA

Commenting Organization: U.S. EPA
Section #: 3.3
Original Specific Comment #: 4
Comment: The text states that oxidization and calcination are the same process. Actually, calcination refers to roasting or dry heating that may be conducted in an oxidizing or reducing atmosphere. The text should be corrected to refer to "oxidization by calcination" to correctly identify the process that generated the waste.

Commentor: Saric
Page #: 10
Line #: 11

Commenting Organization: U.S. EPA
Section #: 3.3
Original Specific Comment #: 5
Comment: U.S. DOE needs to explain that stabilization / solidification alternatives that would significantly exceed the cost estimated for Silo 3 in the OU 4 ROD could only be selected through a ROD amendment.

Commentor: Barwick
Page #: 12
Line #: 2

The amount of the OU 4 ROD estimate should be specifically included in this ESD as a limiting factor.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 3.5

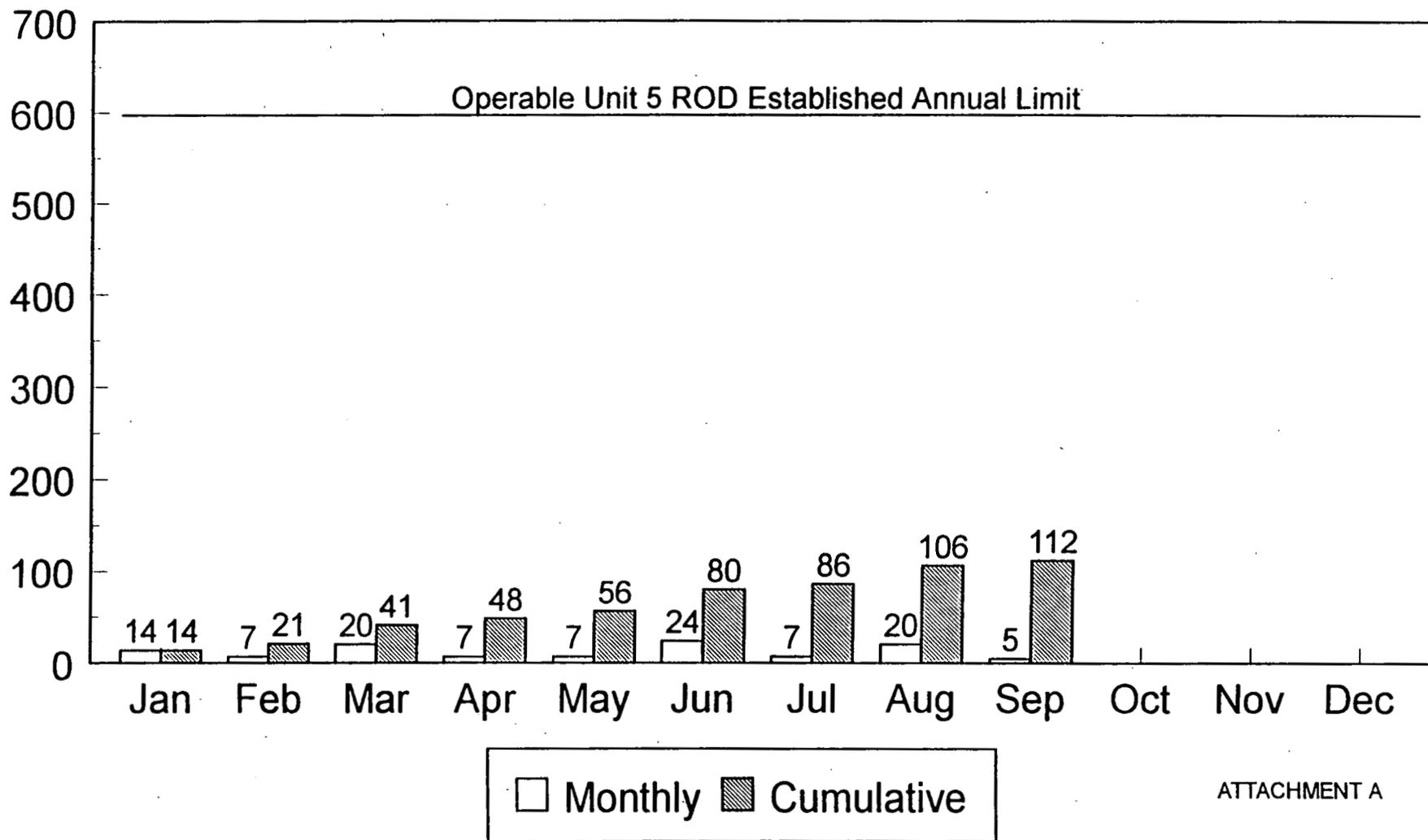
Page #: 28

Line #: 15 through 19

Original Specific Comment #: 6

Comment: The text does not provide an adequate analysis of transportation risks associated with the offsite treatment option. The text should explain that if the off-site treatment option is selected, on-site pretreatment and packaging will be required to reduce the risk of exposure to shipped materials. The text should specifically address the prevention of thorium dust dispersion during transport of Silo 3 wastes.

POUNDS OF URANIUM DISCHARGED TO GMR IN 1997



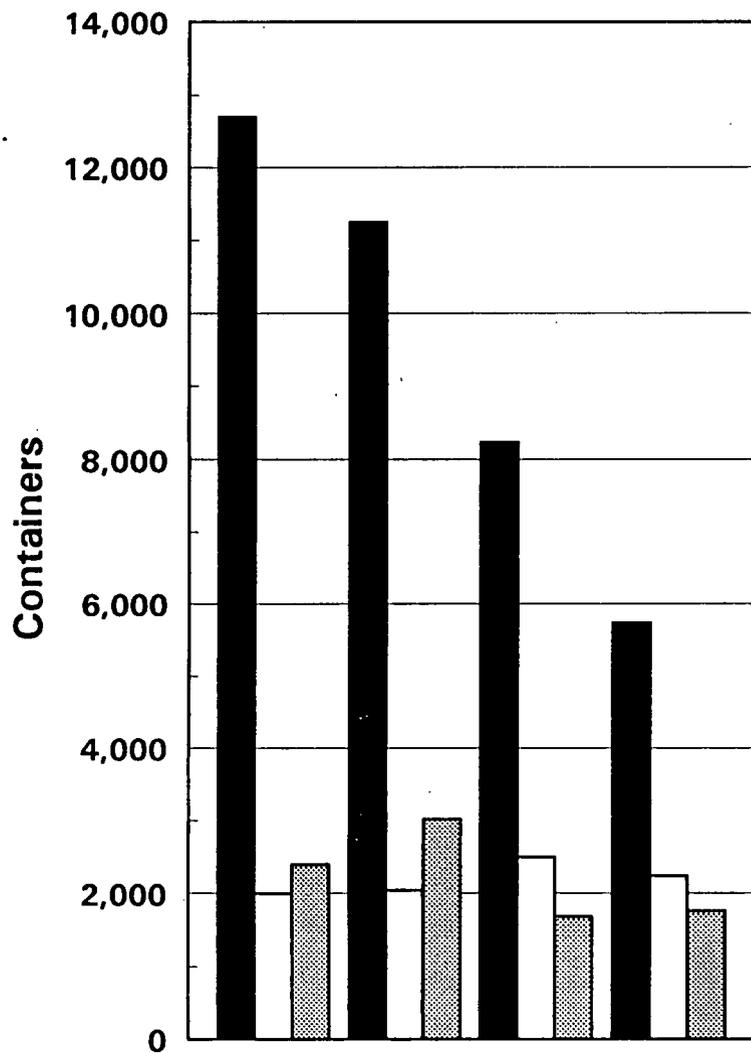
ATTACHMENT A

10/03/1997

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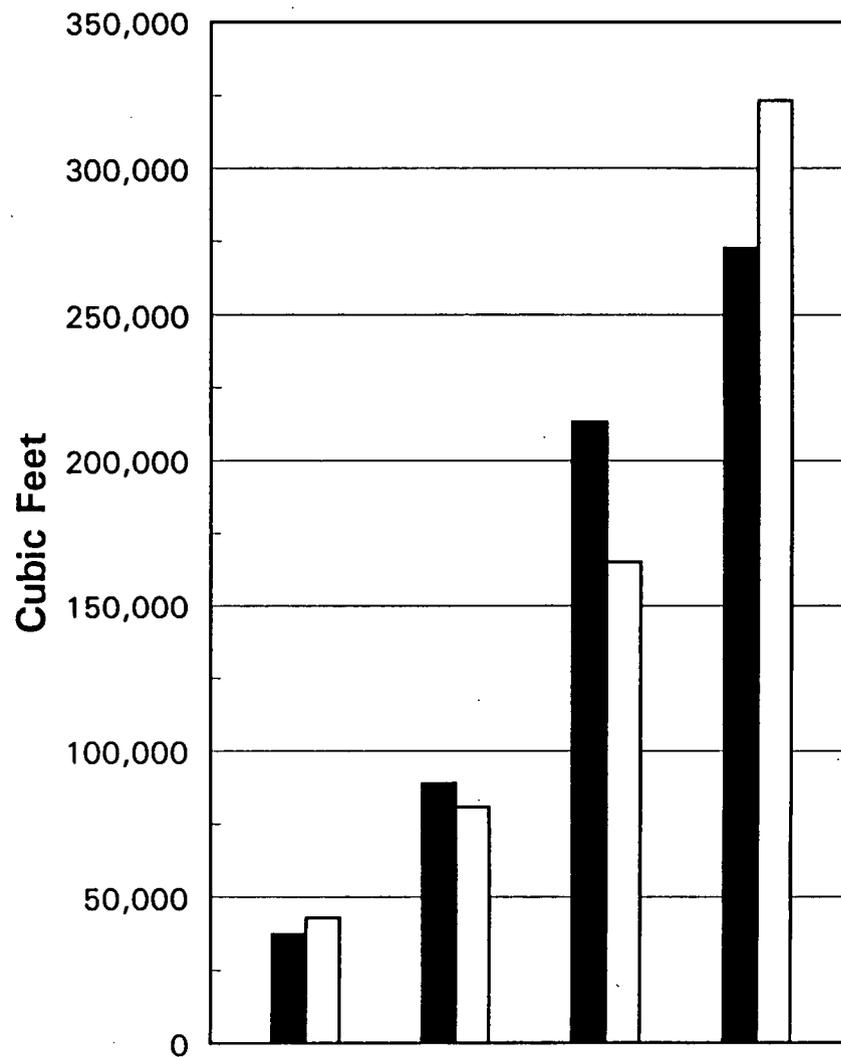
Legacy Waste Characterization



Fiscal Year 1997	1st Q	2nd Q	3rd Q	4th Q
Inventory 	12,704	11,256	8,235	5,735
Planned Disposition 	2,000	2,039	2,500	2,238
Actual Disposition 	2,399	3,021	1,687	1,756

Disposition means characterization completed and disposition option determined.

Low Level Waste Shipping



Fiscal Year 1997	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Planned Shipments 	37,333	88,991	213,136	272,574
Actual Shipments 	43,008	80,712	165,072	323,353

Includes both legacy and newly generated wastes.