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FERNALD CITIZENS TASK FORCE

FRIDAY MAILING

5/2/97

INCLUDED IN THIS MAILING ARE:

- ❑ Summary of Community Meeting on April 22, 1997
- ❑ Update on Planned Upgrades to Fernald Area Roads
- ❑ Press Release on GTS Duratek Cooling Down of the Savannah River Melter
- ❑ Silo 3 Information Needs letter
- ❑ Fact Sheet - Environmental Monitoring Issues
- ❑ Parking Lot/Fugitive Dust Concerns from April 15th Community Meeting
- ❑ Newsclippings

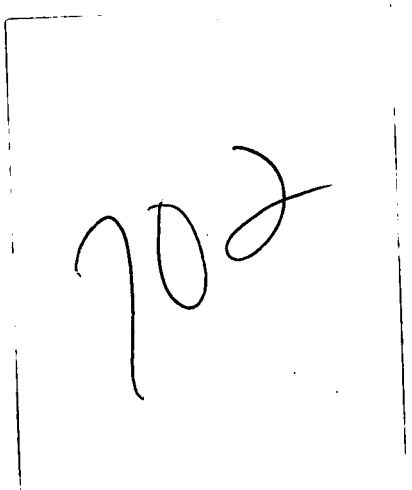
ANNOUNCEMENTS:

- ❑ **WASTE MANAGEMENT COMMITTEE:** The Waste Management Commit tee will meet on Wednesday, May 7, 1997, at 7:00 p.m. at the Uno Building.
- ❑ **FEMP ATTENDANCE AT NEVADA CAB MEETING:** Representatives from DOE-FEMP and FDF will be attending the Nevada Citizens Advisory Board Meeting on May 7, 1997. An additional meeting is scheduled with the Environmental Impact Statement (EIS) subcommittee to discuss comments provided by the CAB in response to the Silo 3 Alternatives Evaluation Report.
- ❑ **HEALTH EFFECTS SUBCOMMITTEE MEETING:** There will be a Health Effects Subcommittee Meeting on Wednesday and Thursday, May 7th and 8th at The Plantation. Wednesday -1 to 9 p.m, Thursday -8:30 a.m. to 5 p.m.
- ❑ **TASK FORCE MEETING:** The next full Task Force Meeting will be held on Saturday, May 10, 1997, at 8:30 a.m. in the Alpha Building. **This meeting will include a site tour of recent and planned remediation activities.**
- ❑ **WORKSHOP ON SILO 3:** On Wednesday, May 14, 1997, at 7:00 p.m. there will be a workshop on Silo 3 at The Plantation.
- ❑ **FRESH MEETING:** FRESH will hold their next meeting on Thursday, May 22, 1997, at Venice Presbyterian Church on Layhigh Road in Ross. All are welcome to attend.
- ❑ **WORKSHOP ON OU2 AND OU5** *(Confirmed)*: There is a tentative workshop scheduled to discuss OU2 and OU5 on Tuesday, May 27, 1997 at the Plantation (9660 Dry Fork Road in Harrison, OH.) Topics to be covered include: Soil Certification Program Status, On-Site Disposal Facility construction schedule, Parking lot/road closure/road realignment plans, and other issues as needed.

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.u[redacted]
Doug	FAX: 648-3629	E-MAIL:	[redacted]



6-700.17

SUMMARY OF DOE STATUS OF FERNALD ACCELERATED PLAN MEETING
April 22, 1997
Alpha Building

Approximately 30 people attended the DOE Status of the Accelerated Baseline Meeting at the Alpha Building on Tuesday evening, April 22. In addition to the general public, this number included representatives from: FRESH, Fernald Citizens Task Force, Community Reuse Organization, OEPA, DOE Ohio Field Office, DOE-FN and Fluor Daniel Fernald.

Jack Craig, DOE-FEMP, opened the meeting at 7 p.m. with comments on:

The National Ten Year Plan which will be out May 15. This will be followed by a 60 day comment period, then a 30 day period for revision. The plan will go to Headquarters in August. The entire fiscal year 1999 plan will be complete in February

This was an informal meeting setting with questions during the presentation. Sue Peterman went through her handout (which is available if needed) for the remainder of the evening. Nina Akgunduz gave an update on OU4. The following are the questions raised during the meeting.

QUESTIONS ON FERNALD ACCELERATED PLAN

P. Dunn	Q.	Has the completion date for groundwater been changed?
S. Peterman	A.	Yes, it has been moved up to 2005 from 2019.
J. Applegate	Q.	How have the employment levels been altered to match new projects?
J. Bradburne	A.	There has been a reorganization to focus on the projects. However, no further employment level adjustments are necessary or anticipated.
P. Dunn	Q.	Does the $266M include privatization?
S. Peterman	A.	Yes, it does, but only for FY 98.

J. Applegate	Q.	When do the ADSs get abolished?
S. Peterman	A.	The ADS will be abolished in the budget for FY 99.
J. Applegate	Q.	Since the OU4 will have an Action Plan, are there any other issues that will require an Action Plan because the path forward is not clear?
S. Peterman	A.	Mostly just OU4. Presently, we have no other Action Plan activities other than the action plans to respond to Military Production Network letter.
J. Craig	A.	There is a possibility that we will develop an Action Plan for nuclear materials disposition.
T. Schneider	Q.	Are there contract vehicles in place for disposal at permitted disposal facilities (specifically, the Ohio Field Office disposal contract)?
S. Peterman	A.	Yes, there are mechanisms in place for disposal facilities; also, the Ohio Field Office is in the process of awarding a stand alone contract for waste disposal from all Ohio sites.
B. Folker	C.	OEPA will be contacted as soon as the contract is in place.
J. Applegate	Q.	How many safe shutdown activities have been completed?
S. Peterman	A.	Safe shutdown has been completed for Plants 1, 4, 5, 9, and the Pilot Plant.
T. Schneider	Q.	Is the capacity of 11,000 gallons per minute of the AWWT fully operational?
D. Carr	A.	The AWWT is at full capacity at this time and is at approximately 800 gallons per minute.
T. Schneider	Q.	Has the start date for the offsite rail been met?
J. Reising	A.	Yes, the FDF has mobilized on the Okeana trestle.
J. Applegate	Q.	Explain the status of the soils progress.
D. Carr	A.	Area I Phase I consists of the field east of the production area and includes the northern part of the OSDF footprint. All samples have been completed for Area I Phase I, which involves 79 certification units. The purpose of the samples is to certify that the soils are clean before construction can begin on the OSDF. This construction is scheduled to start July 1, 1997. At this time, FDF is trying to determine whether the samples pass the statistical analysis. 23 certification units have passed, 11 have been submitted to EPA and two have failed.

B. Tabor	Q.	Explain the Rtrack program.
D. Carr	A.	This is a soil system previously used in Rocky Flats and at Uranium Mill Tailing Remedial Action Projects.
P. Dunn		**Action: Pam Dunn requested from Dennis Carr that someone brief the Environmental Monitoring Committee on the Rtrack program.**
L. Crawford	C.	In response to Nina Akgunduz's statement that we will learn from the Savannah River Site, Lisa stated that the Savannah River Site actually learned a great deal from Fernald. She said the information exchange goes both ways.
N. Akgunduz	C.	We are in contact with the technical personnel at Oak Ridge concerning their transportable vitrification system and Savannah River concerning M-Area.
J. Applegate	Q.	Would it be valuable for Fernald to talk with the management at Paducah concerning the melter and vitrification?
B. Heck	A.	Yes, it would be valuable, and discussions will take place in the future. However, the melter at Paducah will not be operational until October 1997.
L. Crawford	C.	The Louisville paper wrote an article on the comparison of the operations at Paducah and Fernald.
J. Applegate	C.	Fernald's unawareness of the article is the perfect example of the lack of communication within the DOE complex.
S. Haynie		***Action:* Get a copy of this article for Jack Craig, Nina Akgunduz, and other distribution.**
L. Crawford	Q.	What is the site labor agreement integration?
N. Akgunduz	A.	The Silo 3 Request for Proposal is designed to use project site workers.
J. Bradburne	A.	A contractor brings in their own personnel under a site labor agreement, and a contractor would utilize our personnel under the collective bargaining agreement.
M. Jacobs/G. Stegner		**Action: L. Crawford requested that we do some sort of workshop on Terra-Kleen and Perma Fix since they are such good examples of success stories. She also requested a workshop on the OU4 path forward. The time frame would be possible the end of May or the first or second week of June.**
P. Dunn	Q.	Do we have enough excess materials from Silos 1 and 2 to perform testing?
N. Akgunduz	A.	There is enough of the Silos 1 and 2 materials to run the necessary tests. It is possible that recommendations will be made to remove some additional materials (from the IRT discussions).

L. Crawford	Q.	Since the IRT is a team of technical expertise, can stakeholders be involved in the next round of choosing and deciding upon the members?
J. Craig	A.	DOE-FEMP will consult with the stakeholders on the next stage of choosing members.
J. Craig		**Commitment: Resumes of potential experts have been provided, and DOE will continue to involve the stakeholders in the process of reviewing technical personnel.**
L. Crawford	Q.	Will DOE have all the answers they need by May 15th, the date which decides the path forward for OU4.
N. Akgunduz	A.	By May 15th, DOE-FEMP will have developed the key elements necessary for the dispute resolution.
J. Applegate	Q.	In Ten Year Plan terms, there are three steps on OU4: 1) develop a Ten Year Plan action plan, 2) develop list of information necessary to make a decision, and 3) make a decision. Is this the correct summary?
N. Akgunduz	A.	Yes, this is a correct interpretation.
P. Dunn	Q.	What were the details on how estimates for OU4 were developed for the Ten Year Plan that will come out in May.
J. Craig/S. Peterman		**Action: J. Craig and S. Peterman committed to responding to this action (also included was an explanation of how the high/low estimates were not modified or changed from the Value Engineering Report by the Corps of Engineers. This report will be final in mid-May, and DOE will conduct a meeting with the stakeholders at this time to discuss the report).**
L. Crawford	Q.	Please briefly summarize the schedule for the National Ten Year Plan. Once the National Ten Year Plan has been issued in final, can we answer that we will be comfortable with our information for OU4 path forward with the close schedule of the National Ten Year Plan?
S. Peterman	A.	The National Ten Year Plan will be issued as a discussion draft on May 15, 1997. Following this date will be a 60 day public comment period. The National Ten Year Plan will then be issued to Congress in draft form on September 30, 1997. Comments received from Congress will be addressed, and the final draft will be issued with the FY 1999 budget submittal in February 1998.
J. Craig	A.	We have reviewed the schedule and will identify issues/projects in the Fernald Accelerated Plan which will require additional time. We will utilize the best schedule we have to date.

J. Applegate	Q.	Are the assumptions from other DOE site's PBSs for the Nevada Test Site and Envirocare consistent with ours? For example, do other sites plan for so much space at Envirocare that we end up losing the space for our materials?
S. Peterman	A.	At this time, there has been one round of discussion and review on this matter and no problems exist.
T. Schneider	Q.	Is July still the date that a decision will be made on whether to declare some of the nuclear materials waste?
J. Reising	A.	This will be discussed in the Fernald Accelerated Plan in the action plan for nuclear materials disposition.
B. Folker	Q.	How much of the Thorium Overpacking from Building 65 has been shipped offsite?
S. Peterman	A.	Approximately 90% of the overpacked materials from Building 65 have been shipped offsite.
L. Crawford	Q.	Will all the Thorium Overpacks from Building 65 be offsite by the end of the year?
J. Craig	A.	All the Thorium Overpacks will be offsite by the end of the fiscal year.
V. Dastillung	Q.	Are we creating more mixed waste as a result of remediation?
B. Heck	A.	Yes, we are currently generating additional mixed waste as a result of cleanup activities. However, this material goes to Hazardous Mixed Waste Units, gets added to the waste stream and treated. This is discussed in the Site Treatment Plan. (See the attached diagram illustrating the generation, treatment, and disposal of mixed waste.)
J. Sattler		**Action: P. Dunn requested that J. Sattler brief the Environmental Monitoring Committee on the Site Treatment Plans.**
L. Crawford	Q.	How are we tracking the FFCAct? Are we off the disposal list? Have we fulfilled our commitments? When will the PEIS be published?
J. Craig	A.	The date for the PEIS to be published is May 1997.
T. Schneider		**Commitment: T. Schneider made a commitment to look into the FFCAct and Fernald's position on the disposal list.**
J. Sattler	A.	**J. Sattler will review this issue also.**
J. Applegate	Q.	Does PBS OH-FN-12 include the overhead from all the projects? What is the efficiency of execution?
S. Peterman	A.	PBS OH-FN-12 includes the overhead not specifically assigned to other projects. The project management system allows us to look into the projects on an individual project basis. The infrastructure can take this

information down to another level to see how much is being spent on project management by charge number and object class to determine the division of support and overhead versus cleanup cost.

L. Crawford	Q.	Discussed the concern about the fax from Ohio CFO to G. Schmidt, HQ and the stakeholders being unaware of the status of the Fernald Accelerated Plan (completion in 2008 for OU4).
B. Folker		**Commitment: B. Folker made the comment that the baselines are in tact. B. Folker made the commitment to include the stakeholders in the process from this time on and that previous attempts at communicating were poor and inadequate.**
S. Peterman	A.	The Fernald-specific baseline has a completion date of 2008 for OU4 and will be included in the National TenYear Plan for accuracies. The Ohio Field Office is committed to find ways to accelerate the work at Fernald to meet the 2005 vision.
L. Crawford	Q	What is the Fernald baseline? Is this the same as the BEMR?
S. Peterman	A.	No, the baseline is not the same thing as the BEMR. The Fernald baseline is our specific project document used to control, schedule, and execute the Fernald project. BEMR is more a lifecycle cost and a "snapshot" of data that includes prior year summaries and is based on information generated approximately 12 months ago.
S. Peterman		**Action: Provide a copy of the baseline summary for L. Crawford before Friday, April 25th.**
J. Bradburne		**Action: J. Bradburne proposed to hold a workshop/tutorial on the Fernald baseline for the Citizens Task Force and others who may be interested. He explained that the Baseline is a living document and changes as required. There is a formal change control process in place to approve any required changes.**
V. Dastillung	Q.	Do the costs for maintaining the OSDF go into the outyears?
S. Peterman		**Action: Confirm that the PBSs have the costs for maintaining the OSDF will continue into the out years.**
P. Dunn	Q.	How does HQ compile the information into the National Ten Year Plan if each site provides the numbers from different methods? Are the estimates different if originated from different systems? How will they maintain a consistency? Are there any efforts being made for consistency across the complex?
S. Peterman	A.	HQ has the Corps of Engineers visiting all the Field Offices to analyze their method for estimating the numbers for the National Ten Year Plan.
S. Peterman		**Action: Provide a copy of the Project EM-1 Phase I Report to L. Crawford and P. Dunn.**

V. Dastillung Q. There is a concern about the time needing to be spent on the OU4 cleanup. There have been studies which state the cleanup should take a certain amount of time. There is a concern that by trying to push too hard too fast, we will take shortcuts and get into the same fix we are in now. She wants to do it right the first time, and if it takes a few more years, then do it.

N. Akgunduz A. We agree.

V. Dastillung Q. We have also pushed up the completion date for Aquifer restoration. Doesn't the success of the aquifer restoration depend on well reinjection which has not been proven?

D. Carr A. Yes, this schedule is based on modeling projections and will be evaluated/certified using sample analysis.

L. Crawford Q. What happens when and if Congress kills the National Ten Year Plan? Will we then kill it also?

S. Peterman A. The Ohio Field Office has based our budget for the last two years on the Fernald Accelerated Plan and will continue to use the Plan to justify our budget requests. Our plan is to continue to accelerate the projects whether or not the National Ten Year Plan is finalized.

Attendance at April 22, 1997 Community Meeting on the Fernald Accelerated Plan

J. Craig, DOE-FEMP
G. Griffiths, DOE-FEMP
P. Dunn
L. Crawford
J. Jameson, FDF
S. Walpole, FDF
C. Little, FDF
N. Akgunduz, DOE-FEMP
B. Osheim, DOE-OH
D. Carr, FDF
J. Reising, DOE-FEMP
B. Heck, FDF
T. Thompson, FDF
B. Tabor, FDF
J. Applegate
B. Bradburne, FDF
B. Folker, DOE-OH
M. Jacobs, DOE-FEMP
J. Lester, FDF
D. Kasparek, FDF
T. Patton, FDF
T. Schneider, OEPA
L. Stebbins, FDF
T. Borgman, FDF
M. McCullough, FDF
S. Haynie, DOE-FEMP
S. Peterman, DOE-FEMP
K. Morgan, DOE-OH
J. Smith, Fluor Daniel Fernald

UPDATE ON PLANNED UPGRADES TO FERNALD AREA ROADS

PREPARED FOR CITIZENS TASK FORCE TRANSPORTATION COMMITTEE
April 24, 1997

Discussions were held in April 1997 with representatives from the Ohio Department of Transportation (ODOT), the Hamilton County Engineer's Office, and the Butler County Engineer's Office to identify planned upgrades or repairs on roads in the area adjacent to the Fernald site. ODOT plans its work in 4-year or 2-year intervals, depending on the type of work involved, and their planning period begins in July of each year; the other two offices contacted solidify their yearly planning in April of each year.

Ohio Department of Transportation:

Planned upgrades have not changed since the September 26, 1996, update. In brief, they are:

- Resurfacing of S.R. 128 from the I-74/275 interchange to the intersection of U.S. 27. (Lasting from Spring 1997 to late August 1997, performed in sections, requiring closure of one lane at a time in the section being worked on.)
- Installation of two additional traffic lights at the intersections of S.R. 128 and I-74/275, at the on/off freeway ramps. (Already installed.)
- Upgrade of small bridge on S.R. 128, approximately 0.2 miles south of the Butler County line. (During calendar year 1999, requiring closure of one lane at a time.)

As stated above, ODOT's planning periods begin each July with their Fiscal Year; updates will be sought from them again in July 1997. Their Planning Office can be reached at 513-932-3030.

Hamilton County Engineers Office:

The following is the one tentative upgrade planned by the Hamilton County Engineer's Office for roads in the Fernald vicinity:

- Resurfacing of Willey Road from Oxford to S.R. 128 — note this upgrade is tentative; actual execution is dependent on the funds remaining after Hamilton County's first two resurfacing bid packages are finalized. Note that the Fernald Area is a part of the Western Division of Hamilton County, which will be covered by the third bid package.

The Hamilton County Engineer's Planning & Design Office (513-632-8540) will be contacted again in late June for a further update on what will be included in the third resurfacing package, as well as what may be planned for 1998.

Butler County Engineers Office:

Butler County has plans for three activities on roads within a 1-2 mile radius of the Fernald site over the next year. Although they are not expected to impact the site, they are included here for your information:

- Replacement of several culverts on New Haven Road
- Bridge replacement on Layhigh
- Small amount of paving on School Road in Ross

Butler County will be contacted again next April at 513-867-5744 for the latest update.

S. R. 126/Old North Access Turn Lane Construction

In support of the Waste Pits Remedial Action Project (WPRAP), Fluor Daniel Fernald (FDF) will be constructing a turning lane at the original north access road entrance along S. R. 126. This effort will begin in mid-April and continue through approximately June 30, 1997. Fluor Daniel Fernald construction crews will install warning signs and use flaggers to forewarn motorists and control traffic flow during the construction period. Construction will occur between 8 a.m. and 4 p.m., Monday through Friday, and may result in restriction of traffic to one lane along a section of S.R. 126.

The original north access road is being reactivated because activities associated with construction of the On-Site Disposal Facility will require closure of a section of onsite roadway called the Fire Training Access Road. Closure of this road will block access to the north railyard and the waste pits from the current north access road, making it impossible for WPRAP to receive deliveries of contractor supplies and equipment. Addition of a turn lane off of S.R. 126 will greatly enhance the flow of traffic on 126 and better protect the traveling public during peak periods.

Please note that although FDF is both funding and constructing this effort, it has been fully coordinated with ODOT.

Compiled by Tisha Patton
April 29, 1997

(Untitled)

Copy: John Bradburne
Bob Heck

per DP 3/31/97

COLUMBIA, Md., March 31 (Reuter) - GTS Duratek said Monday it had temporarily suspended the processing of radioactive waste at a melter plant after observing possible signs of wear on certain components.

Once the melter cools down, GTS said it would make an inspection to see if any repairs are necessary.

"The financial impact could be negligible, or it could be large enough to have an impact on our near-term earnings," it said. "It is impossible to predict until the assessment is complete."

GTS said the plant, at the U.S. Department of Energy's Savannah River site, would take "several" days to cool down.

"The repairs could range from minimal repairs to replacing certain melter components, to possibly replacing the entire melter box," it said. "If corrective action results in a delay in completing the processing of radioactive waste, the company could incur contract losses on the Savannah River contract in 1997."

GTS said its $14 million contract obliges it to complete its processing of radioactive waste by October 1997.

The company converts radioactive and other hazardous waste into what it describes as environmentally safe forms.

10:03 03-31-97

cy: Tricia Thompson
(phone request) 3/3

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GTS DURATEK

Copy: John Bradburne
Bob Heck

Current Press Release

per DP 3/31/97

Cy: Tricia Thompson
(phone request) Lee 3/31

****** FOR IMMEDIATE RELEASE ******

Date: March 31, 1997

Contact: Robert E. Prince, Pres. & CEO
Robert F. Shawver, Exec. V.P.
Diane R. Brown, Investor Relations
(410) 312-5100
www.gtsduratek.com

GTS DURATEK COOLS DOWN SAVANNAH RIVER MELTER FOR INSPECTION

COLUMBIA, Md.- GTS Duratek (DRTK - NASDAQ) management on Thursday March 27, 1997 at 6:00 p.m. made the decision to temporarily suspend processing of radioactive waste and initiate an unscheduled controlled cool down of its glass melter at the U.S. Department of Energy's (DOE) Savannah River Site. This decision was the result of GTS Duratek operators observing over the previous few days increasing warning signs that accelerated wear on certain melter box internal components could be occurring.

The Company determined on Thursday evening that it was prudent to cool down the melter and conduct a detailed inspection and assessment of any repairs or necessary refurbishment required to return to safe, full capacity operations. The repairs could range from minimal repairs, to replacing certain melter components, to possibly replacing the entire melter box. If corrective action results in a delay in completing the processing of radioactive wastes, the Company could incur contract losses on the Savannah River contract in 1997. Under this contract, all radioactive waste processing is required to be completed by October 1997.

Robert E. Prince, President and CEO stated, "We are announcing the melter inspection at Savannah River because our shareholders are sensitive to the short term financial impact of meeting the schedule to process the waste under this contract. The condition of the melter does not pose any danger to our personnel or to the public. Cooling down the melter will take several days and only when the melter is cooled down can we complete the inspection. The inspection results will determine the extent of the repairs and the financial impact on completing our $14 million fixed price contract at Savannah River. The financial impact could be negligible, or it could be large enough to have an impact on our near-term earnings. It is impossible to predict until the assessment is complete.

Whatever the short-term financial impact may be, we are committed to meeting our project milestones on

this first and world's largest scale implementation of vitrification of low-level radioactive waste. GTS Duratek is the only company in the U.S. getting this kind of large scale, real-world, low-level radioactive waste glass making experience. Moreover, we are getting the experience while cleaning up a recognized priority radioactive waste problem. The Company's financial condition enables it to address any possible problem with this melter box. Moreover, because of our success in winning the contracts at Hanford and Idaho we, together with BNFL, have built an integrated technical staff unequaled anywhere in the world for designing and operating waste melters.

We spent approximately $7 million to build this first of a kind facility on a DOE site. The return on our investment is based on completion of the initial waste stream and the DOE letting the Company handle additional waste streams at the site. We will do what is required to keep the DOE's confidence."

Mario Fiori, DOE's Savannah River Site Operations Manager said, "We remain committed to the long term benefits of vitrification and the technology developed by GTS Duratek. As in any manufacturing operation, technical problems can arise as a normal part of the process. We commend GTS Duratek for dealing with this issue in a straight forward manner and we look forward to working with them on its resolution."

Richard Peebles, Vice President, BNFL Inc., said "We applaud GTS Duratek's prompt pre-cautionary action in suspending operations at M-Area while they investigate the potential problem. That is always the right approach in our industry. We have confidence that the GTS Duratek technology is the right choice for vitrification in the U.S. This was an early design and our joint engineering team is already benefitting from the thousands of hours of experience we have had from this melter operation. The lessons learned from this first of a kind project will improve the quality of the designs for our joint projects at Hanford and Idaho. We attach the greatest importance to our relationship with GTS Duratek and we look forward to strengthening and broadening our alliance."

Robert Prince also said, "In addition to working on processing at Savannah River, we are progressing well with our other projects with BNFL, Inc. for the privatized processing plants at Hanford and Idaho. In some ways, the Savannah River glass melter is a first generation, half-scale implementation of the technology we will be using on those projects. The commercial run time and the experience we are gaining on the Savannah River project is valuable to the success of those large future projects.

We are also working toward completing the acquisition of Scientific Ecology Group (SEG) from Westinghouse Electric which is scheduled to close in April. Integrating SEG with GTS Duratek will give a more mature and diversified customer base, and increase the number of commercial clients."

GTS Duratek is an environmental technology and services firm that uses its proprietary processes to convert radioactive and hazardous waste into environmentally safe forms.

Go to Ho

Department of Energy
Ohio Field Office
Fernald Area Office
P. O. Box 538705
Cincinnati, Ohio 45253-8705
(513) 648-3155

APR 2 9 1997
DOE-0869-97

Mr. Gene Willeke
Fernald Citizens Task Force
P.O. Box 544
Ross, Ohio 45061

Dear Mr. Willeke:

SILO 3 INFORMATION NEEDS

References: 1) Memorandum, G. Willeke to J. Craig, "Silo 3 Information Needs," dated October 17, 1996.

2) Letter, J. Craig to G. Willeke, "Silo 3 Information Needs," dated November 15, 1996.

Enclosed are responses to the comments submitted by the Fernald Citizens Task Force (CTF) identifying Silo 3 information needs. The enclosed responses have been discussed with members of the CTF over the past several months. This formal transmittal of comment responses fulfills the Department of Energy, Fernald Environmental Management Project (DOE-FEMP) commitment to provide the requested information to the CTF.

If you have any questions, please contact Nina Akgunduz at (513) 648-3110, or me at (513) 648-3101.

Sincerely,

Jack R. Craig
Director

FEMP:Akgunduz

Enclosure: As Stated

cc w/enc:

J. Applegate, FCTF
T. Patton, FDF/65-2
AR Coordinator, FDF/78

cc w/o enc:

G. Griffiths, DOE-FEMP
S. Peterman, DOE-FEMP
J. Reising, DOE-FEMP
D. Paine, FDF/52-4

RESPONSE TO FERNALD CITIZENS TASK FORCE COMMENTS ON THE DRAFT SILO 3 ALTERNATIVES EVALUATION REPORT
October 17, 1996

GENERAL COMMENTS

Commenting Organization: Fernald Citizens Task Force Commentor: FCTF
Section #: General Comment Page #: Line #:
Original Comment #: 1

Comment: Identify the administrative and legal requirements associated with changing the Silo 3 treatment from vitrification to stabilization, and again for Silos 1 and 2. Will this require an ESD or a ROD amendment? This information needs to come from EPA, and we would like to see as much clarity of this issue before the March 1 deadline as possible.

Response: Based upon published U.S. Environmental Protection Agency (USEPA) guidance (OSWER Directive 9355.3-02, "Guidance on Preparing Superfund Decision Documents", July 1989), if new information is generated after a Record of Decision (ROD) becomes effective that could impact the selected remedy, the information should be analyzed to determine if changes should be made to the selected remedy. There are three types of changes:

1) non-significant changes
2) significant changes
3) fundamental changes

Non-significant changes are minor changes that typically occur during the Remedial Design/Remedial Action engineering process and should simply be recorded in the post-ROD document file.

Significant changes are generally incremental changes that do not fundamentally alter the overall remedial approach. These changes can include a change in scheduling, costs, or implementability. Significant changes are documented in an explanation of significant differences (ESD). The following example of a significant difference is provided under Exhibit 8-2 of OSWER Directive 9355.3-02:

> "The lead agency decides to use carbon adsorption rather than air stripping to conduct the ground-water restoration activities. Because further investigation revealed that the volatile organics in the waste stream at the site are of low solubility and polarity, carbon adsorption will provide better removal efficiency on this waste stream than would air stripping. The basic pump and treat remedy remains unaltered, and the performance level specified in the ROD will still be met by the new technology. The lead agency prepares an ESD to notify the public that the new technology is to be used. No amendment to the ROD is necessary and remedial design can continue."

RESPONSE TO FERNALD CITIZENS TASK FORCE COMMENTS ON THE DRAFT SILO 3 ALTERNATIVES EVALUATION REPORT
October 17, 1996 (cont'd)

Fundamental changes include changes that alter the ROD such that the proposed action, with respect to scope, performance, or cost, is no longer reflective of the selected remedy in the ROD. Fundamental changes are documented in an amendment to the ROD. The following example of a significant difference that fundamentally alters a selected remedy is provided under Exhibit 8-4 of OSWER Directive 9355.03-02:

> "The lead agency determines that incineration capacity cannot be secured in the time period necessary for remediating the site. The lead agency proposes to use bioremediation rather than the thermal destruction originally selected to address the contaminated soil. This new remedy is fundamentally different from the remedy selected in the ROD, and an amended ROD must be prepared. Remedial design for the source control remedy is halted because the thermal destruction remedy is no longer implementable. Data collection to support the design of the bioremediation option and RD/RA on the ground-water remedy may proceed."

It is the position of the Department of Energy-Fernald Environmental Management Project (DOE-FEMP) that modifying the selected remedy from vitrification to stabilization/solidification for the Silo 3 wastes would not fundamentally alter the original remedial objectives of the approved Operable Unit 4 (OU4) ROD. Stabilization/solidification (stabilization) would still reduce the dispersibility and mobility of the wastes and the constituents of concern. It is DOE-FEMP's position that an ESD would be sufficient to modify the selected remedy for the Silo 3 wastes from vitrification to stabilization. This is still under discussion with the regulators.

Modifying the selected remedy from vitrification to stabilization of Silos 1 and 2 would fundamentally alter the overall remedy approved in the OU4 ROD. Therefore, a ROD-Amendment would be required if the selected remedy for Silos 1 and 2 were to be modified from vitrification to stabilization.

The ROD-Amendment and the ESD documents are similar in that they each provide a description of the proposed changes and a comparison to the nine criteria identified in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). The ROD-Amendment also requires a revised Proposed Plan. An ESD is estimated to take at least six months to prepare and obtain approval by the DOE-FEMP in concurrence with the USEPA and the Ohio EPA (OEPA). In comparison, a ROD-Amendment is estimated to take at least eighteen to twenty-four months to prepare and get approved due to the additional need of the revised Proposed Plan, which also must be

RESPONSE TO FERNALD CITIZENS TASK FORCE COMMENTS ON THE DRAFT SILO 3 ALTERNATIVES EVALUATION REPORT
October 17, 1996 (cont'd)

reviewed and approved by the DOE and USEPA in concurrence with the OEPA. Both the ROD-Amendment and the ESD process will include a public comment period, as well as public meetings to involve stakeholders in the decision making process.

Action: The decision on the appropriate regulatory mechanism for modifying the approved ROD for the Silo 3 wastes is anticipated in May 1997. DOE-FEMP will initiate modification of the ROD pending agreement by USEPA, OEPA, and stakeholders on a final path forward for remediation of the Silos wastes.

Commenting Organization: Fernald Citizens Task Force Commentor: FCTF
Section #: General Comment Page #: Line #:
Original Comment #: 2

Comment: a) Provide as much information as possible on the potential effectiveness of cementation on the Silo 3 material. It is our understanding that similar materials on site have been solidified and this information needs to be made available.

b) In addition, we believe there is sufficient time between now and March 1 to conduct testing on actual Silo 3 materials and would like to see such an effort begin as soon as possible. There is an additional concern that we do not have an accurate understanding of the compounds contained in Silo 3 (analysis has been limited to an elemental analysis), and this casts some doubt on the legitimacy of the surrogates currently being used. A compound analysis should be performed to ensure that all future testing results in accurate information.

Response: a) The FEMP has successfully completed the stabilization of 7,150 gallons of liquid thorium nitrate and 2,500 drums of uranium/thorium mixed waste to remove their associated hazardous characteristic. The treated waste form generated from the stabilization process meets the waste acceptance criteria (WAC) for the Nevada Test Site (NTS) which allows for disposal of the stabilized waste form at the NTS. These two waste streams are similar to the Silo 3 wastes in that they exhibit the toxicity characteristic for several Resource Conservation and Recovery Act (RCRA) metals. Attachment 1 presents a summary table of the results from the toxicity characteristic leaching procedure (TCLP) for both the untreated and stabilized/solidified thorium nitrate and the uranium/thorium mixed waste streams.

b) Fluor Daniel Fernald (FDF) is performing a bench-scale treatability study focusing on stabilization of actual Silo 3 wastes. The majority of the scope of the treatability study has been completed and initial data confirms that stabilization is effective in treating the Silo 3 wastes. The preliminary data also supports the waste loading that was assumed in the Silo 3 Alternatives

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October 17, 1996 (cont'd)

Evaluation. A draft of the final report is scheduled to be completed in April, with a final report scheduled for completion in May 1997.

Compound analysis is being performed on actual Silo 3 wastes by Argonne National Laboratories to identify the chemical compound species present in the Silo 3 wastes and to confirm assumptions that were based on previous elemental analysis and the calcining process. Information from the compound analysis will be provided to qualified subcontractors interested in submitting proposals for remediation of the Silo 3 wastes. It should be noted that proof-of-process testing performed by the selected subcontractor will be conducted using actual Silo 3 wastes.

In addition, a small sample of the Silo 3 wastes (500 milligrams) was provided to Miami University of Oxford, Ohio, for single-crystal or powder x-ray analysis. Based on their analysis, Miami University was only able to identify one compound (calcium sulfate, $CaSO_4$) found in the sample. FDF received a copy of the final report from Miami University on March 5, 1997.

Action: FDF will make available to the public all information obtained from the treatability study and compound analysis performed on Silo 3 wastes.

Commenting Organization: Fernald Citizens Task Force Commentor: FCTF
Section #: General Comment Page #: Line #:
Original Comment #: 3

Comment: There is significant concern regarding the increased volume of wastes associated with cementation. We would like a detailed analysis on the volume of waste associated with vitrification versus cementation.

Response: Based on the technical baseline, if Silo 3 wastes were vitrified, they would be vitrified in a blended formulation with Silos 1 and 2 wastes. A comparison of the total disposal volume for vitrified Silos 1, 2, and 3 wastes versus that for vitrified Silos 1 and 2 wastes and cement stabilized Silo 3 wastes indicate there would be no significant increase in total disposal volume if the Silo 3 wastes were cement stabilized. Vitrified Silos 1 and 2 wastes require a container that offers the necessary radiation shielding to protect workers and the public during handling and transportation of the Silos 1 and 2 wastes. The current container design consists of 6-inch thick reinforced concrete walls to keep radiation levels as low as reasonably achievable (ALARA). The radiological characteristics of the resulting vitrified Silos 1, 2, and 3 combined material would still require the use of this same container.

In comparison, cement stabilized Silo 3 wastes could be placed in white metal boxes constructed of 12-gauge steel, typical of other waste shipments

RESPONSE TO FERNALD CITIZENS TASK FORCE COMMENTS ON THE DRAFT SILO 3 ALTERNATIVES EVALUATION REPORT
October 17, 1996 (cont'd)

that leave the FEMP. Although vitrification results in a reduction in treated waste volume, this reduction is offset by the increase in disposal volume associated with the concrete container required to keep radiation levels ALARA. Figures 1 and 2, in Attachment 2, present a volume comparison for the vitrified Silos 1, 2, and 3 wastes versus vitrified Silos 1 and 2 wastes and cement stabilized Silo 3 wastes, respectively. These comparisons are based on data presented in Volume 2 of 2 of the Draft Final Evaluation of Silo 3 Wastes Alternatives Report (December 1996).

A similar evaluation comparing the total disposal volume for vitrified Silo 3 wastes (only) and cement stabilized Silo 3 wastes (only) has also been conducted. This information is presented in Volume 1 of 2 of the Draft Final Evaluation of Silo 3 Wastes Alternatives Report and is included as Figure 3 of Attachment 2 in this comment response document. While there is a three-fold increase in total disposal volume associated with cement stabilized Silo 3 wastes versus vitrified Silo 3 wastes (separate from Silos 1 and 2 wastes), the benefits of the volume reduction are outweighed by the technical challenges posed by vitrification of the Silo 3 wastes as discussed below.

The post-ROD treatability studies have demonstrated that the implementability of the vitrification technology has proven to be more difficult than originally anticipated. While the development and application of the vitrification technology to the Silo 3 wastes on a pilot-scale basis has demonstrated that vitrification is technically feasible; it has also demonstrated that continuous processing of the Silo 3 wastes by vitrification is hindered by the high concentrations of sulfates contained in the waste stream.

The Silo 3 waste contains relatively high concentrations of sulfates (approximately 15 wt%). The high sulfate concentration in the Silo 3 waste requires high melter operating temperatures (>1,150°C) to assure sulfate destruction, as well as, the addition of reductants to control sulfate layering and sulfate foaming events within the melt pool.

The FEMP has evaluated the implementation of the vitrification technology by testing a variety of silo surrogate waste stream formulations as part of the Vitrification Pilot Plant (VITPP) Program. It was observed that although a "blend" of the Silo 1, 2, and 3 waste streams reduced the overall sulfate concentrations of the feedstream, higher melter operating temperatures and the use of reductants were still necessary to control sulfate layering and foaming events within the melt pool. The required higher operating temperatures coupled with the addition of reductants creates a melt pool environment conducive to the formation of molten lead. The relatively high

RESPONSE TO FERNALD CITIZENS TASK FORCE COMMENTS ON THE DRAFT SILO 3 ALTERNATIVES EVALUATION REPORT October 17, 1996 (cont'd)

and varying lead content in the Silos 1 and 2 waste, without proper controls, can precipitate in the melter and compromise the integrity of the melter's materials of construction. These process conditions create a high degree of uncertainty in the ability to reliably produce a vitrified waste on a full-scale continuous basis. These phenomena were observed by the DOE-FEMP during the VITPP test runs and were significant causal factors in the December 26, 1996 melter incident. In addition, tests conducted on a "Silo 3 only" surrogate waste stream at the Catholic University of America - Vitreous State Laboratory in support of the VITPP program observed the same sulfate related issues.

Dilution of the Silo 3 waste to reduce the sulfate content to manageable levels for vitrification would result in a very large increase in the volume of residues requiring treatment, as well as, an associated increase in disposal volume that would be greater than the disposal volume for stabilized waste. In addition operation and maintenance costs, packaging, transportation, and disposal costs would also increase. Although dilution of the Silo 3 waste may be the most reliable method to manage sulfate levels, it is not the most practicable nor the most cost-effective.

While process flow sheets and melters could be developed to successfully vitrify the Silo wastes, the time and cost of developing such a process would be prohibitive. Therefore, it is recommended that the stabilization of the Silo 3 waste be performed separately from Silos 1 and 2 waste. Separating the wastes would significantly reduce the technical uncertainties and programmatic risks of vitrifying Silos 1 and 2 waste, because a lower-temperature, commercially available melter design could be used, thus reducing the uncertainties associated with melt pool chemistry, melter life, and materials of construction.

On the other hand, the FEMP has demonstrated, as part of the mixed waste stabilization program, that the stabilization technology (i.e., cementation) can be implemented as an effective treatment for the Silo 3 wastes through the successful treatment of similar, thorium bearing wastes. This same stabilization success has been shared by other DOE facilities. A table of stabilization experiences at DOE facilities is presented in Attachment 3. One of the main reasons for the success of the stabilization technology is its ability to treat material, which is homogeneous in nature, through a technically less complex process. Since stabilization has significantly fewer technical challenges compared with vitrification, the stabilization process would allow the treatment of the Silo 3 wastes by a more predictable process, which would allow for a more predictable schedule and cost.

RESPONSE TO FERNALD CITIZENS TASK FORCE COMMENTS ON THE DRAFT SILO 3 ALTERNATIVES EVALUATION REPORT October 17, 1996 (cont'd)

The DOE-FEMP is confident that, based on the characteristics of the Silo 3 waste, sufficient knowledge and adequate stabilization technologies exist to produce an immobilized Silo 3 waste form that would satisfy all DOE-FEMP and environmental regulations and requirements for disposal at the NTS. Thus, it is recommended that the Silo 3 waste not be vitrified either individually or in combination, but be stabilized through another process, such as cementation.

Action: No further action required.

Commenting Organization: Fernald Citizens Task Force Commentor: FCTF
Section #: General Comment Page #: Line #:
Original Comment #: 4

Comment: Cementation does not result in as stable a waste form as vitrification and this has ramifications on both transportation and disposal. We would like a detailed analysis for all constituents and compounds in Silo 3 comparing the effectiveness of vitrification and cementation, the risks of transportation, and compliance with waste acceptance criteria. There is also the possibility that Silo 3 wastes could be treated off site. In order for this to be a viable option, an analysis of transportation of the untreated waste will be needed.

Response: Treatability studies performed during the OU4 Feasibility Study (FS) indicate cement stabilization is as effective as vitrification in immobilizing the constituents of concern in the Silo 3 wastes to meet transportation and disposal requirements. Attachment 4 provides a comparison of the effectiveness of cement stabilization and vitrification in immobilizing the constituents of concern in the Silo 3 wastes. Both treated waste forms would meet the NTS WAC, since both treated waste forms would remove the hazardous characteristic associated with the wastes.

FDF is performing a bench-scale treatability study focusing on stabilization of the Silo 3 wastes to provide additional support to the studies conducted during the OU4 FS and those vendors interested in bidding on the contract to remediate the Silo 3 wastes. The majority of the scope of the treatability study has been completed, and initial data confirms that cement stabilization is effective in treating the Silo 3 wastes to meet the NTS WAC. A draft of the final report is scheduled to be completed in April, with a final report scheduled for completion in May 1997.

Both treatment technologies produce waste forms that bind contaminants and prevent leaching, even after destruction of the waste form. The TCLP test simulates the affects of waste form destruction and potential contaminant leachability. The disposal of the waste in a sparsely populated,

RESPONSE TO FERNALD CITIZENS TASK FORCE COMMENTS ON THE DRAFT SILO 3 ALTERNATIVES EVALUATION REPORT
October 17, 1996 (cont'd)

arid climate at a facility (such as the NTS), with proper institutional controls ensures that both treated waste forms would provide the same level of protection to the public. Appendix D of the Silo 3 Alternatives Report presents the incremental lifetime risk of the maximally exposed individual developing cancer due to normal transport of the treated Silo 3 wastes based on shipments of both vitrified and stabilized Silo 3 wastes. The incremental lifetime risk for the maximally exposed individual developing cancer is approximately 8×10^{-10} for vitrified Silo 3 wastes going to the NTS and approximately 3×10^{-10} for cement stabilized Silo 3 wastes going to the NTS.

Transportation risks associated with shipping untreated Silo 3 wastes have not yet been identified. If off-site treatment of the Silo 3 wastes is selected through the Request-for-Proposal process, these risks will be identified. The Silo 3 wastes would likely require preconditioning to reduce their dispersibility, in order to meet design and control requirements for DOE-site worker protection under 10 CFR Part 835 Subpart K. Appendix D provides the lifetime cancer risk to the maximally exposed individual due to shipment of conditioned Silo 3 wastes for off-site treatment and disposal. The incremental lifetime cancer risk under this scenario is 8×10^{-10}.

These risk values are well within the 1×10^{-6} to 1×10^{-4} NCP criteria range for acceptable risk to the public for remediation activities.

Action: FDF will make available to the public information obtained from the treatability study performed on Silo 3 wastes.

Commenting Organization: Fernald Citizens Task Force Commentor: FCTF
Section #: General Comment Page #: Line #:
Original Comment #: 5

Comment: There are political and legal, as well as technical, issues surrounding disposal of a different waste form than originally proposed. Prior to March 1, it is important to have written verification that the receiving facility is permitted to receive this waste, that the waste meets all legal requirements for transportation and disposal, and that local stakeholders at the receiving facility understand the changes being made.

Response: In a letter dated January 17, 1995, DOE-Nevada determined that the 11(e)(2) byproduct material contained in the K-65 (Silos 1 and 2) and cold metal oxide (Silo 3) silos met the intent of the small volume discussion in DOE Order 5820.2A, Chapter IV. This letter also stated that DOE-FEMP may pursue formal qualification of the treated silo wastes as an approved waste stream in accordance with the NTS waste acceptance criteria. This letter is presented in Attachment 5.

RESPONSE TO FERNALD CITIZENS TASK FORCE COMMENTS ON THE DRAFT SILO 3 ALTERNATIVES EVALUATION REPORT
October 17, 1996 (cont'd)

The determination that the Silo 3 wastes are considered small volume is based on the discussion in DOE Order 5820.2A, Chapter IV and is not based on the waste form. Therefore, modification of the proposed treatment technology for Silo 3 wastes from vitrification to stabilization would not impact the determination. The approved ROD for the Environmental Impact Statement for the Nevada Test Site and Off-site Locations in the State of Nevada allows the continued disposal of low-level waste from current onsite and off-site generators, as long as the wastes comply with the NTS WAC. Neither the NTS ROD nor the NTS WAC specify a single treatment technology that must be used by generators for waste acceptance approval. Both documents allow the generator to select a treatment technology appropriate for the waste stream, with the requirement that the waste stream not exhibit a RCRA characteristic hazard. In addition, other wastes from the FEMP, such as thorium nitrate and uranium/thorium mixed waste, have been successfully stabilized and disposed at the NTS (See Comment #2). Both vitrified and stabilized waste forms would eliminate the hazardous characteristic associated with the Silo 3 wastes and both waste forms would meet the NTS WAC.

Treated Silo 3 wastes will be shipped in accordance with current United States Department of Transportation (DOT) requirements for shipping radioactive material. Treated Silo 3 wastes meet the criteria for low specific activity-II (LSA-II) material under DOT regulations. The proposed containers meet the criteria for industrial packaging - type 2 (IP-2) containers required for shipping LSA-II material. Any alternate containers proposed by the selected subcontractor must also meet the IP-2 container requirements.

Local stakeholders at the NTS are aware of the proposal to modify the selected remedy for the Silo 3 wastes. They are being updated at their monthly Community Advisory Board (CAB) meetings through attendance at the meetings by representatives from DOE-FEMP and FDF. In addition, they have had the opportunity to review and comment on the Silo 3 Alternatives Report. To date, the comments that have been submitted by the NTS CAB have expressed the similar concerns as the Fernald Citizens Task Force (FCTF) and the Fernald Residents for Environmental Safety and Health regarding the performance of the final stabilized waste form, transportation of the stabilizaed waste form, and the public's involvement in modifying the selected remedy for Silo 3 wastes from vitrification to stabilization with potential disposal at the NTS.

Action: DOE-FEMP will seek approval of the treated Silo 3 waste form in accordance with the procedures described in the NTS WAC.

RESPONSE TO FERNALD CITIZENS TASK FORCE COMMENTS ON THE DRAFT SILO 3 ALTERNATIVES EVALUATION REPORT
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Commenting Organization: Fernald Citizens Task Force Commentor: FCTF
Section #: General Comment Page #: Line #:
Original Comment #: 6

Comment: The changes being made are significant enough to warrant outside review. We are in agreement with the appointment of an independent panel. It is important that this panel have a complete understanding of the concerns and issues of stakeholders as identified above and in the questions posed in the public comment period. It is also imperative that the independent panel complete its work prior to the March 1 deadline.

Response: An Independent Review Team (IRT) was assembled by DOE-FEMP and FDF with input from stakeholder groups. The primary function of the IRT was to serve as a technical resource to FEMP stakeholders relative to remediation of the Silos 1, 2, and 3 wastes. The IRT held their kick-off meeting Friday, November 15, 1996 and met several times throughout December 1996 , and January and February 1997. Based on information provided to the IRT, the expertise of the IRT members and IRT internal evaluations and discussions, the IRT issued a draft report, for internal review, with the majority of the IRT members recommending FDF vitrify Silos 1 and 2 wastes and stabilize the Silo 3 wastes with more studies needed for Silos 1 and 2 wastes. It is anticipated that the final report will be available by the end of March.

Action: DOE-FEMP and FDF will use all pertinent information associated with the Vitrification Pilot Plant, the Silo 3 Alternatives Report, the Vitrification Pilot Plant Upgrade Report, the IRT Report, and regulatory and stakeholders input to determine the preferred options for remediation of the Silos 1, 2 and 3 wastes in the Spring of 1997.

As key decision documents are issued for public review and comment, input from the FCTF and other stakeholders will be sought and addressed.

ATTACHMENT 1 - RESULTS FROM STABILIZATION/SOLIDIFICATION TREATMENT PROJECTS PERFORMED AT THE FEMP

	Thorium Nitrate Waste (Untreated)[a]	Thorium Nitrate Waste (Treated)[b]	Uranium/Thorium Mixed Waste (Untreated)[a]	Uranium/Thorium Mixed Waste (Treated)[a]	NTS WAC
RCRA Metals Present in Waste	TCLP (mg/L)	TCLP (mg/L)	TCLP (mg/L)	TCLP (mg/L)	
Arsenic	ND[c]	0.12	7,430	< 5.0	5 mg/L
Barium	9.56	3.5	250,000	< 100.0	100 mg/L
Cadmium	1.91	0.015	35	< 1.0	1 mg/L
Chromium	5.28	0.12	909	< 5.0	5 mg/L
Lead	0.59	0.05	7,946	< 5.0	5 mg/L
Mercury	0.005	0.00011	0.722	< 0.2	0.2 mg/L
Selenium	ND[c]	0.03	124	< 1.0	1 mg/L
Silver	0.03	0.017	138	< 5.0	5 mg/L
Radionuclides of Concern					
Total Thorium (mg/L)	408,000	< 5.0			NA[e]

[a] Results are the maximum concentrations of the samples taken.
[b] Results are the average concentrations of the samples taken.
[c] Not detected.
[d] Analytical data represents typical high concentrations from various mixed waste streams. Stabilization of the waste streams was able to treat the hazardous constituents to below regulatory levels for disposal at the NTS.
[e] Not applicable.

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ATTACHMENT 2

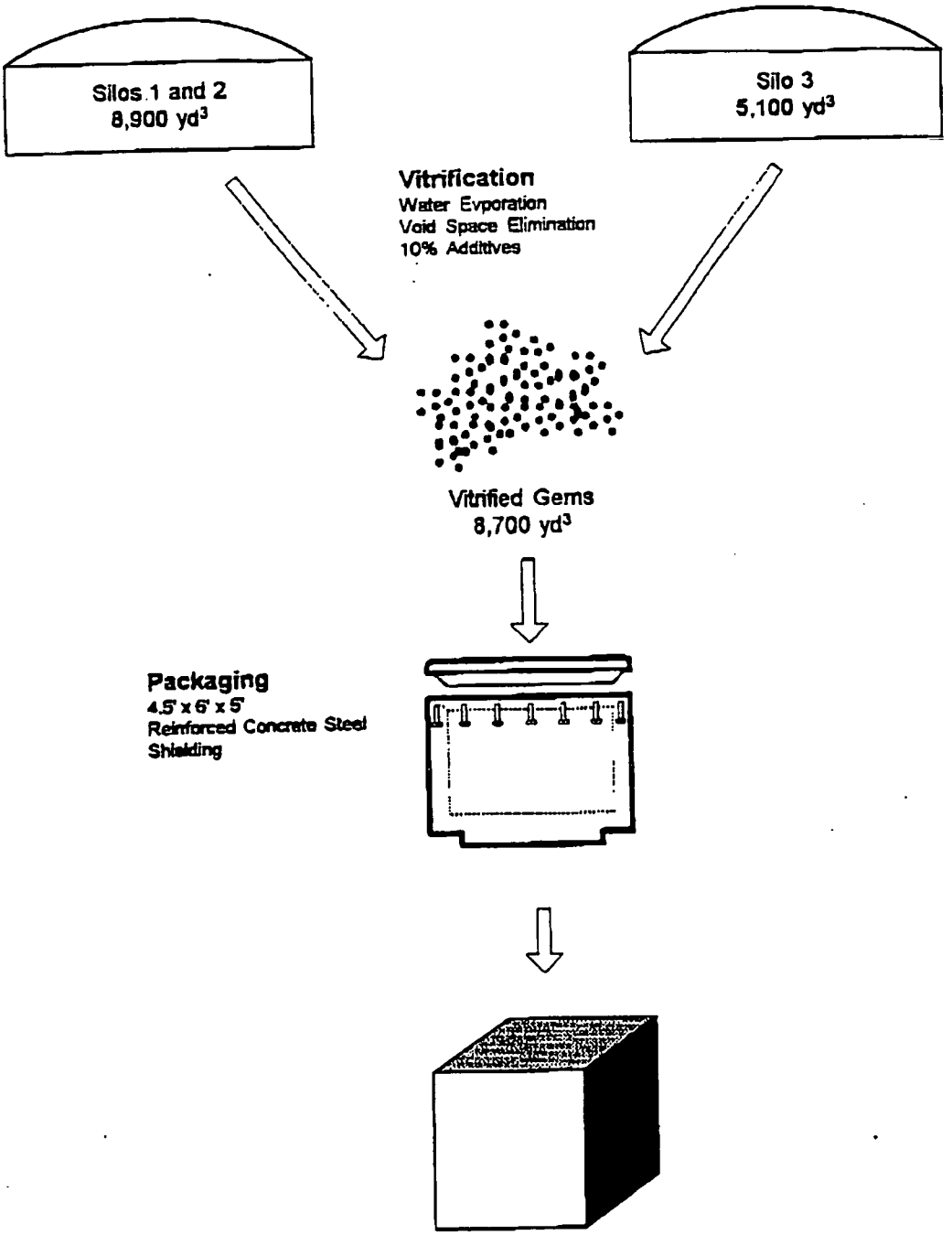

FIGURE 1
ESTIMATED DISPOSAL VOLUME FOR VITRIFIED SILOS 1, 2, AND 3 BLEND

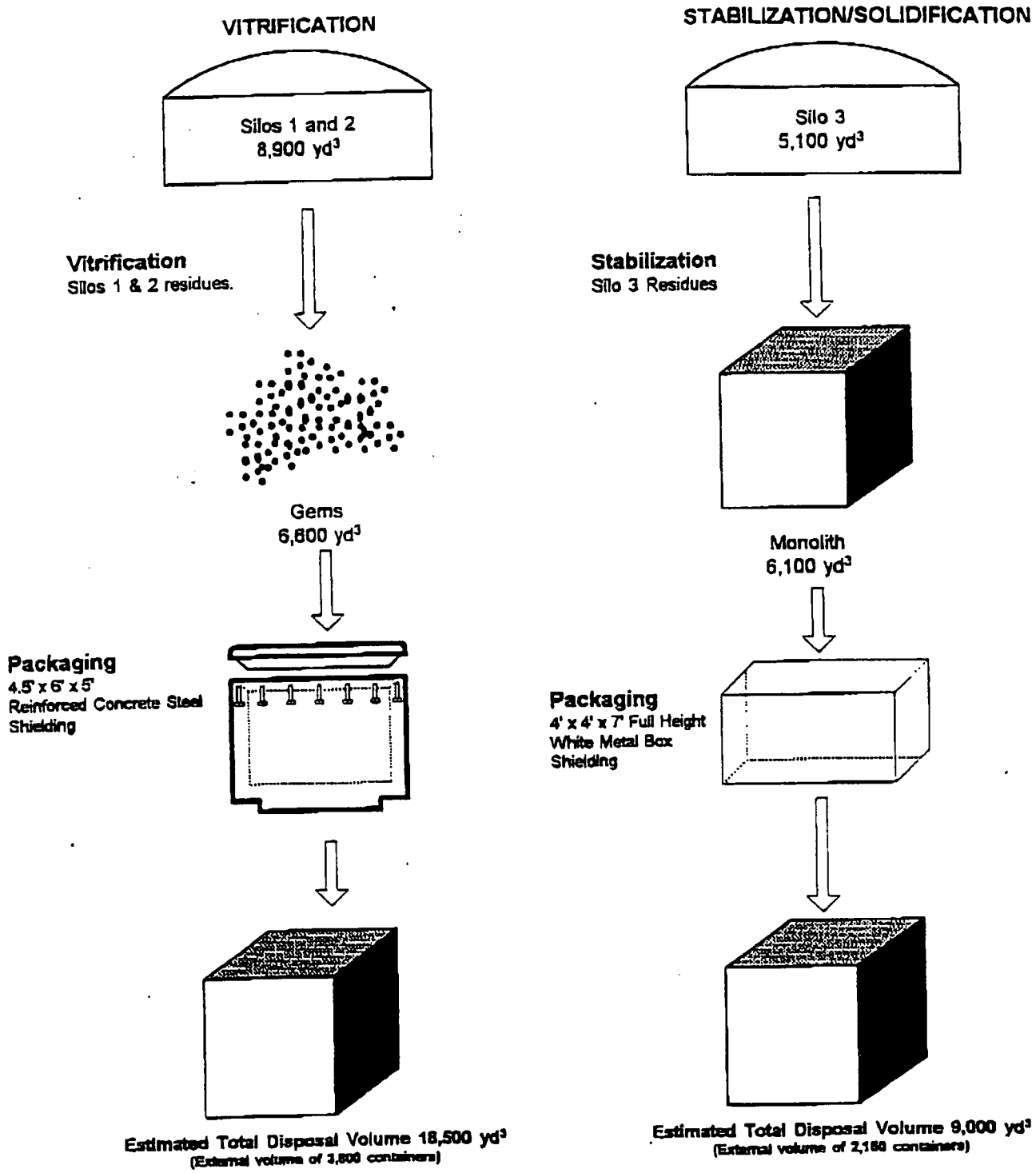

FIGURE 2
ESTIMATED DISPOSAL VOLUME FOR VITRIFIED SILOS 1 AND 2 RESIDUES AND STABILIZED SILO 3 RESIDUES

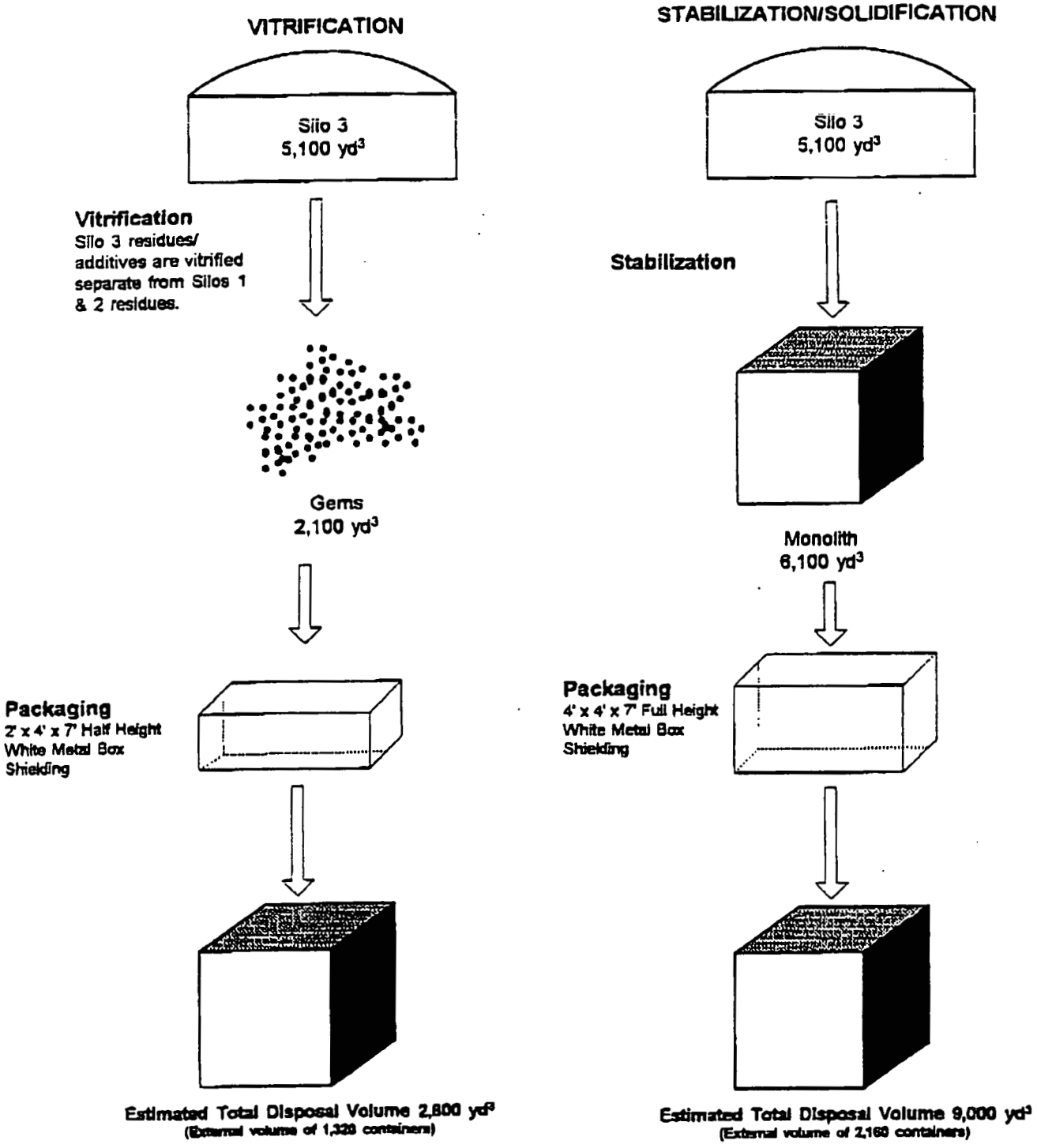

FIGURE 3
DISPOSAL VOLUME COMPARISON
TREATED SILO 3 RESIDUES ONLY
(Vitrification v. Stabilization)

ATTACHMENT 3 - DOE EXPERIENCES WITH STABILIZATION/SOLIDIFICATION

SITE	WASTE STREAM	TREATMENT METHOD	COMMENTS & ISSUES
Fernald - Plant 6	2,500 drums of metals uranium/thorium mixed waste	Cement grout into drum and white metal boxes	Successful treatment due to: strict quality control of operation, good process control program; excellent quality assurance program, experienced subcontractor, disposal facility identified up front so waste was treated to known acceptance criteria, good treatability study data, clear work scope and specifications, good configuration management.
Fernald - Thorium Nitrate	7,150 gallons liquid thorium nitrate	Neutralized and solidified with cement grout into drum	Successful treatment due to: strict quality control of operation, good process control program; excellent quality assurance program, experienced subcontractor, disposal facility identified up front so waste was treated to known acceptance criteria, good treatability study data, clear work scope and specifications, good configuration management, proper chemistry development.
West Valley	18,000 drums of high level waste	Pretreatment separated high level waste from low level waste	Proper waste segregation/preprocessing produced 2 waste streams optimized for each treatment technology. 1,500 drums high level waste being successfully vitrified. 19,877 drums low-level waste successfully cement stabilized.
Rocky Flats Pondcrete	Water, sediment, low-level mixed waste	Cement grout 1:5 waste to cement ratio placed in cardboard box	Improper curing, excess water, unsuitable storage containers. Production rate increased and cement usage decreased indicating quality control problems. Utilized mixers which rely on aggregate to aid in mixing process which is too slow for grout production.
DOE-Oak Ridge K-25 Plant	Mixed waste pond sludge (nickel, pH > 12.5, uranium)	Cement grout placed into drum	Problems with 46,000 out of 78,000 drums. Drum corrosion and leakage, too high pH level, improperly solidified material, poor recipe formulas, mix design development failed to adequately address phase separation, no consideration for final disposal waste acceptance criteria

ATTACHMENT 4 - COMPARISON OF VITRIFICATION AND CEMENT STABILIZATION TREATMENT ON SILO 3 RESIDUES

	Untreated Silo 3 Wastes[a]	Vitrified Silo 3 Wastes	Stabilized Silo 3 Wastes[b]		NTS WAC
RCRA Metals Present	EP-Toxicity (mg/L)	TCLP (mg/L)	Formula 1 TCLP (mg/L)	Formula 2 TCLP (mg/L	
Arsenic	42	0.6	0.045	0.045	5 mg/L
Cadmium	6	0.009	0.0025	0.0025	1 mg/L
Chromium	12	<0.01	0.5	0.03	5 mg/L
Selenium	12	<0.002	0.17	0.12	1 mg/L
Radionuclides	Leachability (pCi/L)	Leachability (pCi/L)	Formula 1 Leachability (pCi/L)	Formula 2 Leachability (pCi/L)	
Th-230	10 (17)[c]	17[c]	<1.1	1.4	
U-238	86[d]	95[d]	2	<0.34	
U-235/236	5	4	0.1	<0.02	
U-233/234	92	92	2	<0.34	
Ra-226	2,455	45	1,710	760	
Pb-210	87	55	360	7	
Radon Flux Rate	70 pCi/m^2-sec	0.03 pCi/m^2-sec	17 pCi/m^2-sec		20 pCi/m^2-s

[a] Analytical data for untreated Silo 3 waste was obtained from Tables 4-21 and Table 4-22 from the OU4 Remedial Investigation Report.

[b] Stabilization data has been updated from that presented in the "Draft Final Evaluation of Silo 3 Residues Alternatives," Volume 1, December 1996. Analytical data for metals was expressed as "dilution adjusted" in the Silo 3 Report to reflect leaching in terms of the volume increase associated with the cement stabilization process. The actual measured leach rates, presented in this table, for the cement stabilized waste forms are about half of the dilution adjusted values. Activities for the uranium and thorium isotopes in the cement stabilized waste forms were estimated using the analytical data for total uranium and total thorium presented in the Silo 3 Report and the specific activities for the respective isotopes, with the assumption that isotopes in the leachate of the cement stabilized waste forms had the same distribution as the isotopes in the leachate of the untreated Silo 3 wastes.

[c] The vitrification treatability study conducted by Batelle Laboratories detected 17 pCi/L of thorium-230 in the untreated Silo 3 waste leachate. Therefore, there is no increase in thorium-230 leaching in the vitrified Silo 3 waste.

[d] The analytical data for U-238 for unreated and vitrified Silo 3 waste are within the analytical laboratory's range for limit of error.

ATTACHMENT 5

Department of Energy
Nevada Operations Office
P.O. Box 98518
Las Vegas, NV 89193-8518

JAN 17 1995

Jack R. Craig, Acting Director, DOE Fernald Area Office, Cincinnati, OH

RESOLUTION TO THE REQUEST FOR APPROVAL TO DISPOSE OF 11(e)2 BYPRODUCT MATERIAL AT THE NEVADA TEST SITE

References: (1) Memorandum, Lyde to Fiore, dtd 11/16/94 (enclosed)
(2) Memorandum, Fiore to Lyde, dtd 2/15/94 (enclosed)
(3) Memorandum, Hamric to Aquilina, dtd 2/11/94

The J. P. Hamric to N. C. Aquilina memorandum, referenced above, requested our office to evaluate whether the 11(e)2 byproduct material contained in the K-65 and cold metal oxide silos could be disposed at the Nevada Test Site pursuant to DOE Order 5820.2A, Chapter IV.

We have completed a review in conjunction with DOE Headquarters and have determined that this 11(e)2 byproduct material meets the intent of the small volume discussion in DOE Order 5820.2A, Chapter IV. See referenced memorandums (1) and (2) above.

This conclusion allows your facility to pursue qualification of the vitrified silo residues as an approved waste stream in the regular manner under the current version Nevada Test Site Defense Waste Acceptance Criteria, Certification, and Transfer Requirements, NVO-325. It should be noted that we are also evaluating a number of operational considerations regarding this particular waste stream (i.e., disposal configuration). Additional information may be necessary to complete our operational evaluation. We will request any information through our normal NVO-325 points of contact unless otherwise advised by your office. If our evaluation identifies any concerns that would appear to impact and/or complicate our ability to dispose of this waste stream, we will notify your office as soon as possible.

If you have any questions, please contact Wendy A. Griffin, Waste Management Division, at (702) 295-5751.

Joseph N. Fiore, Assistant Manager
for Environmental Restoration and
Waste Management

WMD:WAG

000035

APRIL 15 COMMUNITY MEETING

On April 15 the Department of Energy held a community meeting where two concerns regarding environmental monitoring were raised. These concerns were monitoring of parking lot runoff (since this runoff will be diverted to Paddys Run) and fugitive dust controls.

Parking Lot Diversion Monitoring

- Runoff from the FEMP parking areas previously drained to the storm water retention basins and was treated through the AWWT
- Diversion necessary to reserve treatment capacity for higher concentration streams that require treatment
- Runoff from the parking areas will be diverted to the storm sewer outfall ditch.
- Discharge monitored semiannually at Ohio EPA approved NPDES location 4003 for many constituents, including oil, grease and lead.
- IEMP includes two additional monitoring points downstream of the parking lot discharge point sampled monthly for several constituents including uranium, and quarterly for an expanded list of constituents.

Fugitive Dust

- Preliminary IEMP evaluation concluded that it was improbable that fugitive dust could result in exposures above the NESHAP limit of 10 mrem.
- The air monitoring program was developed, in part, to continually monitor this conclusion.
- FEMP is committed to a stringent fugitive dust abatement program.
- Program includes proactive activities to ensure that fugitive dust levels remain below administrative levels set well below the State regulatory limits.

Prepared by Kathi Nickel, DOE-FEMP
April 29, 1997

FACT SHEET
ENVIRONMENTAL MONITORING ISSUES

This fact sheet has been prepared to keep the public informed and updated regarding environmental monitoring and public participation in the development on the Integrated Environmental Monitoring Plan.

STAKEHOLDER INVOLVEMENT

- Information package sent to Task Force Subcommittee February, 1996
- Working sessions with subcommittee May 13, 1996 and July 17, 1996
- Draft IEMP distributed to subcommittee, USEPA, and Ohio EPA July 31, 1996
- Public Round table held September 12, 1996
- 167 comments received from USEPA and Ohio EPA
- No comments received from subcommittee

COMPARISON OF DRAFT AND FINAL DRAFT IEMP

Organizational Changes:

- Scope and objectives of draft and final draft IEMP are identical
- Tables and text added to clarify interface between project-specific and site-wide monitoring, and clarify data interpretation and decision making
- Natural Resource Impact Monitoring Plan added as an addendum to the IEMP
- OSDF Groundwater Monitoring Plan submitted as a separate project-specific monitoring plan
- OSDF Air Monitoring Plan and IEMP contained duplicative information, therefore with EPA concurrence, OSDF Air Monitoring Plan was eliminated
- A description of the information to be contained in the annual and quarterly reports was added

Programmatic Changes:

- Additional groundwater wells added to monitoring program
- Additional parameters added to surface water and sediment monitoring program
- Frequency of composite air analysis increased from annually to quarterly
- Co-located soil sampling eliminated
- Air monitoring program compliance requirements changed by USEPA

Summary of Air Monitoring Requirement and Changes

- National Emission Standards for Hazardous Air Pollutants - 10 mrem annual average
- Compliance demonstration previously made through air modeling
- IEMP proposed combination of modeling with monitoring to verify reasonableness of model results
- USEPA required, and DOE agreed to, a program based on direct measurement of public exposure
- Internally located monitors were relocated to the western and southern fence line to represent receptors residing adjacent to the FEMP on Wiley and Paddys Run roads
- DOE will attempt to relocate offsite and eastern fence line monitors at properties of closest receptors to the north and east.
- Two offsite background monitors will be retained
- Total number of monitors changed from 20 to 17

Unresolved Issues with Air Program

- Homeowner resistant to granting permission to locate monitors
- DOE investigating the use of smaller monitors
- EPAs aware of the possible need to reevaluate issue and discuss alternatives
- DOE anticipated the need to actively engage the public in a discussion of the air monitoring program once alternatives were more clearly formulated.

April 29, 1997
Cincinnati Enquirer
Front Page
"Glass-pellet method endorsed"
Reporter: Tim Bonfield

Glass-pellet method endorsed

But it will cost more, take longer

BY TIM BONFIELD
The Cincinnati Enquirer

The most dangerous radioactive waste at Fernald should still be turned into glass pellets, a team of experts said Monday — even though finishing the job would cost millions of dollars more and take years longer to complete than originally projected.

As expected, an independent review team formed in November to study Fernald's troubled vitrification project recommended that the project be taken away from main contractor Fluor Daniel Fernald and subcontracted to another company.

The Fernald Cleanup

The basic findings of the review team report mirror a March report from the U.S. General Accounting Office that said Fluor Daniel's vitrification pilot plant was riddled with technical problems, behind schedule and millions over budget. The team was formed by Fluor Daniel and approved by the U.S. Energy Department after an *Enquirer* investigation uncovered problems in the cleanup of the former uranium processing plant.

The vitrification project is considered the most critical component of the overall cleanup of the 1,050-acre site.

In March, the Energy Department said it would replace Fluor Daniel on the vitrification project while leaving the company in charge of the overall cleanup. The review team report offers details about how to fix the problems.

In a 6-5 vote, the team recommended building a full-scale vitrification plant to treat radium-laced wastes in Fernald's Silos 1 and 2. The report also recommended encasing less-hazardous waste in Silo 3 in concrete.

The report makes a preliminary estimate on what it will take to finish the job:

▶ The vitrification plant would begin operation in 2006 and complete the job by 2011. The total cost of the silo project would be $476 million. Until now, the total cost estimate for the vitrification project had been $250 million, with active waste cleanup complete by 2006.

▶ Trucks would then haul 3,800 containers of glass "gems" and 2,160 loads of concrete "monoliths" to a burial site in the West.

▶ Trying to put all the waste in concrete would be faster and cost less — $433 million, completed by 2008 — but would require five times as many cross-country waste ship-

(Please see FERNALD, Page A4)

Fernald: Team endorses vitrification

CONTINUED FROM PAGE A1

ments.

The review team report notes that these estimates are based primarily on data from Fluor Daniel. A new subcontractor may be able to do the job for less, the report said.

The five dissenting members of the review team, whose comments are included in the report, said they remain pessimistic about vitrification ever being successful because a new subcontractor with the skill and experience needed for the job "is unknown and probably does not exist."

"No one to the knowledge of the (minority group) has ever successfully melted lead glass in commercial quantities while using sulfate-containing raw materials," they said.

The dissenters support concrete encasement for all the silo waste. They say it would be cheaper and faster, and the production process poses less chance of a catastrophic accident.

Fluor Daniel spokeswoman Tricia Thompson said the company has no objections to the report. "We had endorsed this approach prior to the (review team's) report and the GAO report being released," she said.

April 29, 1997
Journal News
Front Page
"Fernald cleanup methods studied"
Reporter: Nicholas G. Johnson

Fernald cleanup methods studied

Independent report supports dual procedures

By Nicholas G. Jonson
Journal-News

CROSBY TOWNSHIP

Independent experts studying waste-disposal efforts at the former Fernald plant recommended Monday that engineers use two methods, rather than the original plan of one procedure, to treat and transport radioactive waste.

The review team, consisting of 11 waste-disposal experts, studied the process of vitrification, a means by which radioactive waste is converted to glass pellets for shipment to Nevada. Vitrification was the original choice of the U.S. Department of Energy for processing Fernald waste.

Six team members, representing a majority of the panel, recommended in a long-awaited report that vitrification be continued for waste stored in silos 1 and 2. As for silo 3, the majority recommended that waste be stabilized through another process known as cementation.

Department of Energy officials said the report, a nonbinding document, would be considered along with other recommendations in the search to find the best way to dispose of waste at the former uranium processing plant.

"This (report) is just one more resource we have," said Gary Stegner, spokesman for the Department of Energy.

"This information, along with the (General Accounting Office) report and the value engineering study to be released by the U.S. Army Corp of Engineers in mid-May, will be forwarded to the Fernald Citizen Task Force. They're the ones we'll probably rely on most to give us a recommendation."

Five members of the review team submitted a minority opinion stating that vitrification should be scrapped entirely in favor of cementation, because of cost, time delays and the number of unresolved technological issues.

The majority, while endorsing the continued use of vitrification, recommended that the current vitrification pilot plant, built early last year at a cost of more than $14 million, "should not be used for further melter testing."

Instead, they recommended that the vitrification plant be used to improve the waste retrieval system. They also recommended that Fluor Daniel

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Fernald

(Continued from Page A1)

Fernald, the company overseeing the cleanup, proceed with construction of another vitrification facility for silo 1 and 2 waste.

Moreover, the majority said Fluor Daniel should follow a "subcontracted, turnkey approach" in disposing of waste from the three silos.

The recommendation differs from Fluor Daniel's previous strategy, which sought to vitrify all silo waste simultaneously.

Cleanup complications arose because waste in Silo 3 — cold metal oxides with a high sulfate content — had to be melted at much higher temperatures than waste in the other two silos for vitrification to remain feasible, officials have said.

After numerous delays, Fluor Daniel shut down the vitrification pilot plant Dec. 26 after a leak in one of the melters caused a spill on the plant floor.

The majority said Fluor Daniel "gained invaluable information ... of the vitrification process through lab scale testing of surrogate and actual silo waste." But they said most of the problems with the vitrification plant could have been avoided with better managerial oversight.

The estimated cost to vitrify waste in silos 1 and 2 is $274 million to $425 million, while the estimated cost of stabilizing the same waste though cementation is $230 million and $389 million, the report said.

The cost of stabilizing Silo 3 waste through cementation — a process recommended by all members of the panel — is estimated at $22 million to $29 million.

Stegner said the citizens task force would probably give its recommendation in mid-May.

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CityBeat
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"Trust No One"
By Felix Winternitz

Trust No One

Everybody is covering a just-published GAO report differently. Somewhere therein lies the truth.

Spin Control: Seems just about everybody is writing about the March 14 report from the General Accounting Office (GAO) regarding the former Fernald uranium-processing plant. Thing is, each media institution has a completely different take on it.

A March 19 story in *The Cincinnati Enquirer* implies the report — titled *Management and Oversight of Cleanup Activities at Fernald* — is a confirmation of the lengthy series the daily published last year on Fernald and Fluor Daniel, the private company supervising the cleanup there. An April 3 story in *Everybody's News* claims the exact opposite, that the GAO report actually undercuts *The Enquirer's* entire premise that Fluor Daniel is somehow bilking the government and running the facility in dangerous ways. As usual, the truth lies somewhere in between.

The "Danger & Deceit" series — which just won the Gannett Co.'s highest award, Best of Gannett for Public Service — was for the most part neither supported nor disproved by GAO investigators.

Indeed, going into it, the GAO investigators tell Press Clips that they couldn't substantiate or invalidate much of what appeared in *The Enquirer* because the GAO can investigate only government agencies. In this case, that was the Department of Energy (DOE), which oversees Fluor Daniel on the Fernald project. GAO investigator **Robert P. Lilly**, one of the report's authors, says, "We are tasked only with looking at public agencies. We were doing a review of DOE" and its oversight practices.

Fluor Daniel, which was a major focus of *The Enquirer* series, came into the GAO report only insofar as it subcontracts with the DOE. Even then, because published allegations of faulty financial reporting to the government "were generally broad and lacking specificity, we did not investigate (the) allegations," according to the report.

The GAO's major conclusion: that faulty DOE oversight of Fluor Daniel has contributed to schedule delays and cost growth — specifically, an additional 13 years and half billion dollars.

If Sen. John Glenn, Sen. Mike DeWine, Rep. Rob Portman and Rep. John Boehner, who called for the GAO investigation as a result of *Enquirer* stories, hoped this report would somehow resolve whether specific published charges were correct, they couldn't have been more off the mark.

If the congressmen don't recognize this, DOE certainly does. In a letter to the director of the GAO division that conducted the investigation, Assistant DOE Secretary Alvin Alm writes that the agency is concerned that the report does "not bring closure to ... the key issues raised by *The Cincinnati Enquirer* in their 'Danger and Deceit' series. These key issues are (1) has the site 'jeopardized the safety of site workers and

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"Trust No One"
By Felix Winternitz

Press Clips

neighbors' and (2) is the government being systematically cheated out of millions of dollars?' "

Nonetheless, the four congressmen sent out a letter to the media announcing, "The GAO's investigation did not uncover any criminal wrongdoing or a willful pattern of fraud and deception on the part of the contractor" or "substantiate most of the allegations concerning serious safety and contamination problems." Big surprise. You can't determine the facts if you are not allowed to look for them. In addition, GAO investigators tell Press Clips that they were hampered by not having the same advantage as newspaper reporters: They couldn't promise anonymity to sources.

As for the stones the GAO could look under, **Robert E.L. Allen**, the report's lead author and an assistant director of the agency, says it appears that "*The Enquirer* used the information they received, that there was a lot of truth to it but, yes, maybe some generalizations.

Allen points out that the 91-page GAO report is full of miscellaneous testimony and appendixes culled during a year-long investigation.

"If you read that report, or any report, I guess you can read it anyway you want to," he says.

Want to decide for yourself? You can order a copy of the report by calling the GAO Document Distribution Center at 1-202-512-6000 and asking for the report either by its title or order code, GAO/RCED-97-63.

Press Pass: If you're hanging out at the Omni Netherland Hotel this weekend and think you see somebody who looks like NBC correspondent **Jane Pauley**, it could well be Jane Pauley. The national boards of the Society of Professional Journalists and the Sigma Delta Chi Foundation convene a combined directors' meeting in one randomly selected American city each spring. This year, it's Cincinnati's turn.

Other journalists hitting town include SPJ President **Steve Geimann**, senior editor of *Communications Daily* in Washington, D.C., President-Elect **Fred Brown**, the political editor of *The Denver Post*, Freedom Forum President **Paul McMasters**, **Russ Pulliam** of the Indianapolis newspaper dynasty, and about two dozen others. It's wall-to-wall newspeople, so expect a long line at the Omni bar.

PRESS CLIPS welcomes contributions, comments and, of course, press clippings. If you have a gripe with the media, see a goof or otherwise catch 'em with their pants down, write *CityBeat* at 23 E. Seventh St., Suite 617, Cincinnati, Ohio 45202. Or e-mail us at letters@citybeat.com

April 23, 1997
Cincinnati Enquirer
Opinion Page, A15
"Enquirer racks up 23 awards"
Reporter: William A Weathers

Enquirer racks up 23 awards

BY WILLIAM A. WEATHERS
The Cincinnati Enquirer

The Cincinnati Enquirer won 23 awards — including seven first places — in the annual Associated Press of Ohio contest for its news coverage during 1996.

In the results announced Tuesday, *The Enquirer* won first place in the breaking news category for Division IV for its coverage of the closing of McAlpin's department store downtown. The division is made up of newspapers with more than 75,000 daily circulation.

Other first-place awards:

- Columns, Laura Pulfer, for "Couldn't anybody save this child?"
- Full-page layout, *Enquirer* staff, for a package on Interstate 71 construction.
- Business reporting, Jeff Harrington, for reports on Olestra.
- Editorial cartoons, Jim Borgman.
- Informational graphics, Randy Mazzola for "Journey to the afterlife."
- Photo essay, Yoni Pozner, for "Intensive caring."

Seventy-four Ohio newspapers served by the Associated Press submitted a total of 2,937 entries in 21 categories of the contest, which is based on work published during the 1996 calendar year.

The awards will be presented June 15 in Cincinnati, when general excellence awards will be announced.

The Enquirer won the following second-place awards: Investigative reporting, Mike Gallagher, "Danger and Deceit: The Fernald Cleanup;" Columns, Cliff Radel, "The flag, and baseball fan's anthem, summed it all up;" Editorials, Tony Lang, "Promises, promises;" Illustrations, Rob Schuster, "The sneeze season;" and General news photos, Glenn Hartong, "A final salute."

Third-place awards: Full-page layout, Jim Borgman, "The evolution of a cartoon;" Illustrations, David Aikins, "Alcohol and teens;" and Photo essay, Yoni Pozner, "Sacred run."

Honorable mention awards: Full-page layout, Ron Huff, "Great gardens;" Enterprise reporting, Mark Skertic, "Enrollment numbers don't add up;" Brightest headlines, Jennifer Schwertman, "Don't let your house go off half-caulked;" Business reporting, Leah Beth Ward, "End of an immigrant's dream;" Spot news photos, Kevin J. Miyazaki, "Mace in the face," and Glenn Hartong, "Comforting arms;" Sports photos, Saed Hindash, "From the mouth of babes;" and Feature photos, Kevin J. Miyazaki, "Three beer salute."