



# FRIDAY MAILING

6/5/98

## INCLUDED IN THIS FRIDAY MAILING:

- Letter to Federico Pena on Inter-Site Workshops
- Technical Report Summary: Waste Pits Remedial Action Project Remedial Design Package
- Technical Report Summary: Waste Acceptance Criteria Attainment Plan for the On-Site Disposal Facility
- Technical Report Summary: Transportation Plan for Operable Unit One
- Newsclippings

## CAB MEETINGS:

- OFF-SITE COMMITTEE MEETING:** The Off-Site Committee of the Fernald Citizens Advisory Board will meet on Wednesday, June 10, 1998, at 6:00 p.m. in the Alpha Building Classroom A.
- ON-SITE COMMITTEE MEETING:** The next meeting of the On-Site Committee of the Fernald Citizens Advisory Board will be on Wednesday, June 10, 1998, at 7:15 p.m. in the Alpha Building Classroom A.
- EFFICIENCY COMMITTEE MEETING:** The time and location of the next meeting of Efficiency Committee is to be announced.

## OTHER MEETINGS:

- MONTHLY PROGRESS BRIEFING:** The June Monthly Progress Briefing will be held on Tuesday, June 9, 1998, at 6:00 p.m. in the Alpha Building, 10845 Hamilton-Cleves Highway.

## 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](mailto:john.applegate@law.uc.edu)  
 Doug            Fax: 648-3629            E-Mail: [redacted]

OFF-SITE COMMITTEE  
PLEASE NOTE

NOTE TIME  
CHANGE

1497

May 20, 1998

Secretary Federico Pena  
Department of Energy  
1000 Independence Ave., SW  
Washington, DC 20585

Dear Secretary Pena:

As national and community based organizations we represent thousands of people living near Department of Energy (DOE) sites and along current and proposed transportation routes that are impacted by radioactive waste and special nuclear materials. We have long voiced concern about many of DOE's proposed "solutions" for these materials and about the lack of substantive public participation in DOE's decision-making processes around these materials.

We have reviewed the planned inter-site waste discussions and find that they fall far short of the process needed to move the United States closer to sound decisions on these issues, and do little more than provide a public relations forum for the Department of Energy. The undersigned organizations, therefore, write to inform you that we will not participate in the inter-site waste discussions to be held this June.

Many of us have worked diligently with the Department of Energy and the League of Women Voters over the past two years to develop a process that would involve the affected publics in DOE decision making on these issues. We had hoped that a well-structured national dialogue would help to develop a credible, scientifically supportable and publicly acceptable policy for radioactive waste and special nuclear materials. DOE had the basis for such a process in the National Dialogue Planning Committee's 1997 draft charter for the national dialogue. While not perfect, this plan moved toward a shared vision of an iterative, inclusive process occurring in a manageable time frame. However, DOE claimed that the process was too lengthy and too expensive. We note that had DOE pursued this proposal, the nation would be well underway with the National Dialogue, and finding solutions to the radioactive waste dilemma.

It should also be noted that DOE has failed to fulfill its obligations under the National Environmental Policy Act to fully analyze the impacts of environmental restoration and waste management throughout the DOE weapons complex. Despite a court order, DOE did not conduct a programmatic Environmental Impact Statement on environmental restoration. Further, the programmatic Environmental Impact Statement on Waste Management was incomplete, insufficient, and in no way integrated with environmental restoration activities which will generate large quantities of radioactive waste. We believe that quality NEPA analysis needs to occur, and that it should be supplemented by a national dialogue on these issues. Should such a process occur, the nation may finally come to terms with radioactive waste and develop an implementable and sustainable waste and materials policy.

As stated above the two planned inter-site waste discussions on radioactive waste and special nuclear materials fall far short of the process needed to address these important national issues. Two workshops do not allow enough time to develop consensus -- or even identify common themes within such a large group. High level DOE managers have demonstrated little commitment to the process. The information packet has yet to be released. DOE's alternative disposition options for low-level waste and low-level mixed

waste remain unreleased. Further, DOE has not committed to broadening the discussions to include the breadth of waste decisions DOE is considering. Lastly, only six weeks from the meetings, no invitations have been extended and some groups, sites and communities along the transportation corridors have not even heard from DOE about the discussions.

Despite the expenditure of nearly a half million dollars on this process, we feel it is unlikely that these workshops will do more than provide public relations cover for DOE as it implements decisions with little regard for public concerns. DOE has provided little or no evidence that these workshops move us toward sound decisions on waste issues. Without the essential elements of a credible national dialogue, and without assurances that these discussions will lead toward a national process for addressing radioactive waste and nuclear materials decisions, we find that we cannot participate in these discussions.

We remain committed to helping develop a process to obtain substantive public participation in decisions regarding radioactive waste policy and nuclear materials disposition should DOE decide to address this issue in a good faith manner.

Sincerely,

(See Separate sheet for list of 62 signers)

cc: Betsy Moler, DOE  
Martha Crosland, DOE  
Sharon Lloyd-O'Connor, LWV  
CDR Associates

1497

*Signers on Letter to Secretary Pena on Inter-site workshops*

Barbara Hickernell  
Alliance to Close Indian Point  
Ossining, NY

Virginia Dollar  
Alternatives in Action  
Nicholson, GA

Byron Plumley  
American Friends Service Committee - Denver  
Denver, CO

Ed Arnold  
Atlanta Physicians for Social Responsibility  
Atlanta, GA

Oscar Rosen, Ph.D  
Atomic Veterans Radiation Research Institute  
Salem, MA

Harry Rogers  
Carolina Peace Resource Center  
Columbia, SC

Chuck Johnson  
Center for Energy Research  
Salem, OR

Susan Griffin  
Chenango North Energy Awareness Group  
South Plymouth, NY

Liane Clorfene-Casten  
Chicago Media Watch  
Chicago, IL

Rick Nielsen  
Citizen Alert  
Las Vegas, NV

Denise Lee  
Citizens Against Chemical Toxins and Underground Storage  
Wadesboro, NC

Debbie Katz  
Citizens Awareness Network  
Shelburne Falls, MA

Joseph Badura  
Citizens For Alternatives to Chemical Contamination  
Lake, MI

4

*Signers on Letter to Secretary Pena on Inter-site workshops*

Mark Donham  
Coalition for Health Concerns  
Paducah, KY

Tom Rauch  
Colorado Coalition for the Prevention of Nuclear War  
Denver, CO

✓ Dallas Gudgell  
Colorado Peace Action  
Denver, CO

Sam Cole  
Colorado Physicians for Social Responsibility  
Boulder, CO

Mark Stansbery  
Columbus Campaign for Arms Control  
Columbus, OH

Michael B. Hamilton  
Communities Helping to Oppose Radioactive Dumping

Jay Coghlan  
Concerned Citizens for Nuclear Safety  
Santa Fe, NM

Heather Rae  
Concerned Citizens of Dickerson  
Dickerson, MD

Peg Rydlisyn and Mickey Albrizio  
Connecticut Opposed to Waste  
Canton, CT

John Runkle  
Conservation Council of NC  
Chapel Hill, NC

Chuch Broschious  
Environmental Defense Institute  
Moscow, ID

Ruth Thomas  
Environmentalists Incorporated  
Columbia, SC

Brian Costner  
Energy Research Foundation  
Columbia, SC



*Signers on Letter to Secretary Pena on Inter-site workshops*

Mary Lampert  
Don't Waste Massachusetts  
Boston, MA

Gabriela Bulisova  
For Mother Earth  
Kalamazoo, MI

Patricia Birnie  
GE Stockholders' Alliance  
Tucson, AZ

Alice Slater  
Global Resource Action Center for the Environment  
New York, NY

Tom Carpenter  
Government Accountability Project  
Seattle, WA

Robert Gould  
Greater SF Bay Area - Physicians for Social Responsibility  
San Francisco, CA

Bill Mead  
Ground Zero NorthWest  
Portland, OR

Lynne Sternbridge  
Hanford Education Action League  
Spokane, WA

Greg Mello  
Los Alamos Study Group  
Santa Fe, NM

David Kraft  
Nuclear Energy Information Service  
Evanston, IL

Michael Mariome  
Nuclear Information and Resource Service  
Washington, DC

Mary Bryan  
Oak Ridge Environmental Peace Alliance  
Knoxville, TN

Joyce and Steve Kuschwara  
Oyster Creek Nuclear Watch  
Lacey Township, NJ

*Signers on Letter to Secretary Pena on Inter-site workshops*

Gordon Clark  
Peace Action  
Washington, DC

Mavis Belisle  
Peace Farm  
Panhandle, TX

Kevin Kamps  
People Against Unsafe Nuclear Transportation  
Kalamazoo, MI

Robert K. Musil  
Physicians for Social Responsibility  
Washington, DC

Vina Colley  
Portsmouth/Piketon Residents for Environmental Safety and Security  
McDermott, OH

Bruce Drew  
Prairie Island Coalition  
Minn., MN

Wenonah Hauter  
Public Citizen's Critical Mass Energy Project  
Washington, DC

✓ Tom Marshall  
✓ Rocky Mountain Peace and Justice Center  
Boulder, CO

Derek Chernow  
Safe Future Education Fund  
Santa Monica, CA

Mike Morrissey  
Save Our Cumberland Mountains

Don Moniak  
Serious Texans Against Nuclear Dumping  
Amarillo, TX

Van Crandall  
Sierra Club, Low-level Radioactive Waste Committee  
Capital Group, NC Chapter  
Raleigh, NC

Mateo Ferreira  
Shundahai Network  
Las Vegas, NV



1497

*Signers on Letter to Secretary Pena on Inter-site workshops*

**Pam Allister  
Snake River Alliance  
Boise, ID**

**Roger Snyder  
Sound & Hudson against Atomic Development  
Smithtown, NY**

**Don Hancock  
Southwest Research and Information Center  
Albuquerque, NM**

**Clark H. Coan  
The Southwind Group  
Lawrence, KS**

**Marylia Kelley  
Tri-Valley CAREs  
Livermore, CA**

**Tim Takaro, MD., MPH  
WA Physicians for Social Responsibility  
Seattle, WA**

**Jackie Cabasso  
Western States Legal Foundation  
Oakland, CA**

**Sheila Baker  
Women's International League for Peace & Freedom, Fresno branch  
Fresno, CA**

**Virginia Salkowski  
World Tree Multi-Cultural Community Center for Peace, Justice, and Mother Earth  
Kalamazoo, MI**

**Tom Throop  
Wyoming Outdoor Council  
Lander, WY**

**Individual Signers:**

**Timothy Bruening  
Davis, CA**

**Mary L. Creech**

**Barbara Richardson  
Cherokee, NC**

**Cecillia Sybrandy  
Wall Township, NJ**

May 23, 1998

Susan Gordon, Director  
Alliance for Nuclear Accountability  
1914 N 34th, Suite #407  
Seattle, WA 98103

Subject: Decision by ANA Affiliate Organizations Not to Participate in Inter-Site Discussions on Nuclear Material and Waste National Workshops

Dear Ms. Gordon:

It is with grave concern that the League of Women Voters Education Fund (LWVEF) learned on Tuesday, May 19, 1998, of the decision by affiliates of the Alliance for Nuclear Accountability (ANA) not to participate in the Inter-Site Discussions on Nuclear Material and Waste. If this choice by ANA member organizations removes the voice of grassroots public interest organizations from discussion, it jeopardizes the option for a balanced assessment of nuclear material and waste issues.

The LWVEF, therefore, is at a crossroads. Over the next few days we will, from our outreach efforts, be identifying who is willing to participate in the intersite discussions. We also will assess the impact of the choice by more than 62 ANA affiliate organizations to be absent. The heart and soul of our organization rests on educational efforts that thoroughly examine public issues through the experience of people from all walks of life.

As we have said in earlier communications with various ANA members, the LWVEF persisted to the point of this workshop effort, despite DOE scaling back its commitment to our proposed National Dialogue Initiative, because we hope the workshops will lead to that National Dialogue. As do ANA members, we believe in the potential of "a well-structured national dialogue helping to develop a credible, scientifically supportable and publicly acceptable policy" for nuclear material and waste; we too embrace the vision of "an iterative, inclusive process."

Our hope for successful workshops to lay ground for this dialogue rests on effective outreach and a workshop design that honors principles articulated by people who have worked to forge that National Dialogue. We have designed the workshops to provide accurate information and opportunities to look at issues from a national, multi-site perspective and from points of view held by a wide range of diverse interest groups.

Mindful of concerns voiced by public interest organizations over the past two years, we have designed the workshops in a format far different from traditional DOE public participation processes. We see them as a demonstration to DOE of a better way of communicating with, and gleaning wisdom from, the people who must live with its decisions. In the workshop, people will dialogue among themselves and with DOE decision-makers, rather than just listen and react to what DOE says.

DOE officials will have a single 20-minute segment to describe, as organizations have asked of them, two of the key upcoming DOE decisions; alternatives among which to choose and ramifications of choices. In addition, representatives from diverse interest sectors, including DOE, will present an overview of each site. Beyond that, the entire two and a half day workshop is dedicated to facilitated small group exercises and exchanges among representatives of 14 different interest sectors. In addition, our design avoids past meeting or hearing dynamics characterized by numerous site contractors dominating discussions. Site contractor participation is limited in this way: one contractor representative per site may, where legitimate, fill one of the following places: DOE Site Manager, Labor - non-union, or business in the site community.

1497

So important is bringing together people from diverse walks of life and from the major DOE site areas around the country, that the major portion of project funds are dedicated to two values:

- Getting people there and
- Securing an effective exchange of information and perspective through the guidance of professional facilitators

Furthermore, a significant upshot of maximizing funds for these values is the simple fact that we each will engage in these discussions on college campuses, as students, if you will, and staying in college dormitories.

The LWVEF has moved forward on the belief that if the workshops are successful and participants voice a strong desire to continue the dialogue begun by the workshops, the Department of Energy would do more.

We understand that ANA leaders believe otherwise. Your voices are important ones and we respect your right to choose not to participate. If your decision is made without our having had an opportunity to talk with you directly, we want to make sure that this decision is based on information rather than assumptions. Below, we respond to concerns raised in your letter and other concerns heard during our outreach efforts.

We must determine whether losing your voice means that we should deny voice to others who want to participate, including tribes, environmental justice representatives, and other public interest groups who have not signed this letter.

If we proceed with the workshops, it will be important to us to ensure that participants address the question, "what did these workshops mean, given who participated and who did not?" Our goal will be to appropriately state, and not overstate or understate, the significance of these workshops and to seek the advice of the non-DOE participants at the workshop in defining this significance.

We offer the following points to provide you with some useful and up-to-date information in the hope that you will reconsider your decision not to participate:

1. *"The Information Packet has yet to be released."* With major assistance by Toby Michelena, the technical specialist on the facilitation team, we refined and clarified information presented in the Information Packet used for the Pilot Field Workshops, which we are referring to as "Workshop Materials." As is practice for League-prepared documents, Toby's materials have received independent review. Matt Zenkovich of DOE has prepared information on DOE decisions. We expect to distribute this information as a single package to all workshop participants soon. We want to make sure that participants have at least two weeks to review materials in advance of the workshops. We believe that citizens will find both sets of information useful within and beyond the workshops.
2. *"DOE's alternative disposition options for low-level waste and low-level mixed waste remain unreleased."* At the request of the League, DOE prepared a video with Dave Huizenga and Dave Nulton explaining DOE's alternative options for fissile material and low level and low level mixed waste. This video is available to help groups prepare for the workshops and know about the options DOE is considering. We understand that DOE sent a copy to every DOE site public participation coordinator and believe that the video is available to other interested groups, upon request to DOE. During the first workshop plenary session, Dave Nulton or Dave Huizenga will present this information, live.
3. *"DOE has not committed to broadening the discussing to include the breadth of waste decisions DOE is considering."* The League is designing the workshops. We have heard people from site communities and national dialogue advocates emphasize that they want to be able to talk more broadly about nuclear material and waste issues and not be confined to focus solely on near-term DOE decisions. For this reason, we have instructed the facilitation team to build the workshop agenda around a broader discussion of nuclear material and waste issues and, at the same time, ensure that participants will get clear information about and be able to discuss DOE decisions.

4. *"Only six weeks from the meetings, no invitations have been extended and some groups, sites and communities along the transportation corridors have not even heard from DOE about the discussions."* The term "invitation" doesn't fit with the outreach process we have used. The League tries, in a communities-upward approach, to empower people to contribute to good public policies. "Hand-picking from a national office" runs counter to the value of empowerment. We, therefore, consciously decided NOT to issue invitations.

Instead, our outreach process was this: the League and the several facilitation team "Site Area Coordinators" and "Outreach Coordinators" have, for the past few weeks, been contacting community organizations, businesses, and local, regional and national governments, Site Specific Advisory Boards and Tribes. DOE staff has led the communication within the Department. In these contacts, we have aimed to:

- Generate interest from a broad mix of interest groups and
- Engage the groups to self-select appropriate participants (within and among themselves).

By this framework we have sought a rich, diverse mix of participants prepared to speak on the issues and have aimed to keep the workshops to a manageable size (between 150 and 200 people per workshop). We have been scrambling, in the short time available, to reach out wherever possible, first focusing on site areas, Tribes, and environmental justice organizations.

The Site Area and Outreach Coordinators have been receiving recommendations from organizations, and commitments to participate from representatives of interest groups and have begun to forward names to the League. Where more recommendations for sector participants than spaces exist, the League will select the participant for that sector at random from those recommended. The League will mail a "Confirmation" letter and logistical information on the workshops to the participant. "Workshop Materials" will follow the Confirmation letter. Please note the attached list of Site Area and Outreach Coordinators with telephone numbers, in case you wish to express an interest in participating in the workshops.

With respect to sites and communities along transportation corridors not having heard from DOE about the workshops, we can only speak to our own need to communicate with these groups, sites, and communities. We have made some contact with corridor states but much work is yet to be done and we would welcome your assistance in identifying individuals and groups whom we should contact. If you would like to assist, please call me at 202-429-1965.

5. *"The workshops are a "public relations cover for DOE."* We can only say that we are committed to providing a legitimate opportunity for dialogue about multiple issues and decisions and across sites and sectors. We are committed to writing a report of the workshop results with participant recommendations, including recommended next steps. We will provide this report to DOE, all workshop participants and to others, such as Congress.

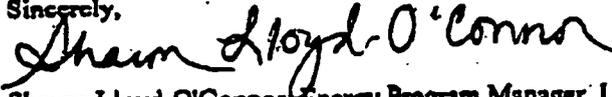
6. *"High level DOE managers have demonstrated little commitment to the process."* We have stressed the importance of participation by senior DOE staff and decisionmakers in these workshops. Especially in the wake of the Secretary's announced resignation, no higher level Headquarters personnel exist than those dozen or so program directors who have committed to attend the workshops.

Thank you for taking the time to read our response. We believe it to be of utmost importance to offer you an explanation. There may be no more serious reflection of a crisis in trust and communication in our country today than a rejection by so many organizations of an opportunity to meet in honorable dialogue. Whatever decision you and your organization ultimately make regarding this endeavor, we recognize with profound sobriety that you arrive there out of seeking what is life-giving for the land and people of the United States and Tribal Nations.

1497

I welcome any questions and comments. I understand from you e-mail that by replying to the address noted there, our letter will go to each organization that signed the ANA letter. We would appreciate you ensuring that it does.

Sincerely,



Sharon Lloyd-O'Connor, Energy Program Manager, LWVEF

## What is the Waste Pits Remedial Action Project Remedial Design Package?

1497

The Remedial Design Package gives an overview of the operation and processes; site plans; equipment and materials; excavation plan; grading plan; environmental control plan; health and safety plan; and other information related to the IT Corporation's removal of materials from Waste Pits 1-6, the Burn Pit, and the Clearwell.

## What are the activities to be fulfilled by IT?

- Waste excavation and initial segregation
- Preparation of the excavated material (i.e., sorting, blending, size reduction, etc.)
- Thermal drying of some or all of the waste materials
- Blending of the processed material (e.g., radiological WAC blending)
- Storage and loadout for transport to the Commercial Disposal Facility (CDF)

## How will the excavation of these materials occur?

The excavation aspect of the project will take place in 19 phases. These phases are engineered so that materials with low enrichment can be blended with those of high enrichment in order to meet the WAC (Waste Acceptance Criteria) for the CDF. Materials will also be excavated in phases in order to blend for moisture content after excavation.

## What will occur after excavation?

After excavation, materials will be blended for moisture content and put through a dryer to achieve moisture contents that are acceptable for disposal at the CDF. Materials over 4 inches long cannot be placed into the dryer and will be disposed of separately. These activities will occur in the Materials Handling Building. When ready for rail shipment, the final blend will be tested for WAC prior to transport to the CDF.

## What types of wastes will be found in OU1?

The majority of these wastes are composed of general sump sludge (filtrates from processing plants, wastewater from the laboratory, and lime), neutralized raffinate (a by product of uranium enrichment), and magnesium fluoride. Other wastes include:

- Contaminated asbestos materials
- Contaminated rags, paper, and polyethylene
- Dust collector bags
- Scrap salts
- Uranium and thorium tetrafluoride
- Contaminated soil, rocks, sand, brick, and ceramics
- Dust collector residues
- Miscellaneous sludges
- Uranium chips and turnings
- Water softening and treatment sludges
- Graphite crucibles and molds
- Ash from burning or incineration
- Flyash from coal-fired boiler
- Steel drums
- $UO_3$  and  $U_3O_8$  (uranium oxides)

The material in the waste pits is not homogeneous and pockets of certain types of materials will be found. One constituent of the wastes that may pose a concern is the amount of organic compounds. The heat within the dryer could cause these materials to burn, releasing carbon monoxide and other compounds into the atmosphere.

## How will the gas generated from the dryer be monitored?

The dryer will include an air pollution control system. Airborne emissions will be regularly monitored. A gas control system will remove whatever compounds are necessary from dryer emissions to meet established regulatory emissions limits. At present, radon will not be removed by the gas control system since the amount estimated to be released is below the emissions limit. However, the level of radon control which will be required is still under investigation.



**Technical Report Summary:**

Waste Pits Remedial Action Project (WPRAP) Remedial Design Package, USDOE- Fernald, February 1998  
(summary reissued 6/2/98 for Off-Site Committee)



## What is the Waste Acceptance Criteria (WAC) Attainment Plan for the On-Site Disposal Facility?

This document is a support plan for the OSDF that is used with the Impacted Materials Placement (IMP) Plan to define the on-site disposal requirements for materials generated by environmental restoration and D&D activities. The IMP Plan defines the material size and configuration considerations associated with waste placement in the OSDF and provides engineering-based requirements for material conditioning, segregation, placement, and compaction to enhance the long-term integrity and performance characteristics of the facility. The WAC Attainment Plan complements the IMP Plan by defining the radiological, chemical, and physical WAC for all materials destined for placement in the OSDF.

## What are the goals of the WAC Attainment Plan?

The Plan has four goals:

- 1) To consolidate all of the sitewide WAC into a single document.
- 2) To present the WAC attainment strategies for each waste stream that is targeted for on-site disposal.
- 3) To describe the quality assurance, quality control, and organizational responsibilities for WAC attainment.
- 4) To identify the plans for accommodating independent oversight by EPA and OEPA in the attainment demonstration process.

## What actual materials are destined to be disposed in the OSDF?

The primary materials for on-site disposal include all contaminated in-place soil and soil stockpiles (OU5); the waste materials present in the South Field, Active and Inactive Flyash Piles, the Lime Sludge Ponds, and the Solid Waste Landfill (OU2); and the debris resulting from sitewide facility D&D efforts (OU3). These materials represent 2.5 million cubic yards. Smaller amounts of other materials, including personal protective equipment, water and treatment plant residuals, analytical laboratory sample returns, and other solid wastes will also be disposed in the OSDF. Any materials excluded from disposal in the OSDF will be disposed of off-site. For the purposes of the WAC Attainment Plan the materials to be disposed in the OSDF are divided into three broad categories:

- 1) Soil and soil-like material (soil and soil-like materials will compose 85% of all the waste in the OSDF.)
- 2) Facility D&D debris (this debris is further subdivided into ten categories which are all eligible for disposal in the OSDF except for process-related metals; acid brick; product, residues, and special materials; and lead sheeting unless treated.)
- 3) Ancillary remediation waste (these waste streams do not lend themselves to WAC attainment planning and must be evaluated on a case-by-case basis.)

Materials containing free liquids, whole or shredded scrap tires, and oil are categorically excluded from disposal in the OSDF.



## What are the WAC limits and how were they derived?

For soil, the WAC were derived through fate-and-transport modeling, to ensure the long-term protection of the Great Miami Aquifer (GMA) underlying and down gradient of the OSDF. The modeling used a conservative approach that assumed:

- An OSDF performance of 1000 years.
- The hydraulic and geochemical barrier properties of the OSDF engineered earthen liners and caps.
- The persistence and mobility characteristics of the constituents placed in the facility.
- The hydraulic and geochemical properties of the grey clay layer beneath the OSDF.
- The potential for cumulative impacts to the GMA.
- No credit for the additional protectiveness of the geomembranes and the high-density polyethylene barriers that are part of the liners and caps of the OSDF, or any of the other natural geologic layers separating the OSDF from the Great Miami Aquifer, other than the native grey clay layer, as stated above.

The results of this analysis found that WAC limits were necessary for 12 of the 93 constituents of concern at the FEMP. This modeling was repeated for RCRA-regulated constituents; 6 of the 27 RCRA constituents needed WAC limits.

The modeling done for soil was adjusted to apply to debris material. These result found that only total uranium and technetium-99 have the potential to enter the GMA. The OU3 ROD reflected these results and stipulated that all uranium-contaminated debris materials, with the exception of visually discernible process materials, can safely be disposed of in the OSDF. The WAC development model identified that a total mass limit of 105 grams of technetium-99 could safely be placed into the OSDF, thus materials with the highest levels of technetium-99 contamination will be shipped off-site for disposal.

Ancillary waste must meet the soil WAC if they are soil-like or the debris WAC, if they are debris-like.

## What other subjects are covered by this document?

The WAC Attainment Plan reviews the procedures outlined within the Sitewide Excavation Plan for characterizing and removing impacted soils. The Plan also outlines the tracking procedures to be used to keep track of removed soils and debris until they are placed into the OSDF.



**FERNALD  
CITIZENS  
ADVISORY  
BOARD**

### What is the Transportation and Disposal Plan for Operable Unit One (OU1)?

This plan describes how rail transportation and disposal operations will be conducted in order to ensure safe and successful transportation of OU1 wastes from Fernald to a commercial disposal facility. This plan serves to:

- Describe the logistics of rail transportation associated with OU1 waste
- Identify objectives and criteria for the operational phase of waste transport
- Describe operational aspects of waste transportation sufficiently to demonstrate that wastes can be transported to the designated disposal site safely and in accordance with all applicable regulations
- Serve as a transition between design and implementation of rail operations

### What is the remedy outlined in the OU1 Record of Decision (ROD)?

- (1) Excavation of wastes from the pits (along with any residual contaminated soils from beneath the pits)
- (2) Preparation of the wastes
- (3) Treatment by thermal drying to meet the waste acceptance criteria (WAC) of the disposal facility
- (4) Blending to achieve a uniform product and loadout into railcars
- (5) Rail transportation from Fernald to a commercial disposal facility (CDF)
- (6) Off-site disposal at a CDF or the Nevada Test Site (NTS) if deemed necessary, because of the radiological levels in the waste product

Items 1-4 will be carried out by the Alternative Remedial Action Subcontracting Approach (ARASA) subcontractor, IT Corporation, while items 5 and 6 will be performed by FDF.

### What are the off-site rail transportation requirements and what route will be taken?

The primary rail route will start at Shannon Yard and proceed northwest on a CSXT (the railroad company) branch line to Cottage Grove, IN. The branch line is approximately 24 miles long and speeds will not exceed 25 miles per hour. At Cottage Grove, the locomotive will be uncoupled and a run around will be performed to pull the unit train onto the CSXT Chicago-Cincinnati mainline. A unit train runs directly from the point of origin to its destination without adding or deleting cars en route and carries a single commodity. The FEMP unit train is expected to consist of 40-60 cars, including two buffer cars. The unit train will then travel southeast to the Queensgate Yard, Cincinnati. From Cincinnati, the unit train will travel to the CDF. Upgrades were made in several rail areas to accommodate increased activity. The estimated risks for this route are well below the range acceptable to the USEPA. Risk scenarios are outlined in the Appendix D of the OU1 Feasibility Study. Gondola cars will be used to transport the waste and these cars are designed to meet the necessary Department of Transportation requirements. The cars will also meet Association of American Railroad (AAR) requirements. Current plans call for the purchase of 135 gondola cars. Emergency response teams will be notified of shipments in areas along the route. Paperwork detailing the nature of the waste will be kept with the train.

### What are the on-site rail operations?

Both loaded and empty railcars will be stored in the North Rail Yard, which is located in the northeast area of the site. The loadout facility will accommodate four railcars at a time. In the loadout facility, railcars will have liners installed, be loaded, and railcar covers replaced. The cars will be radiologically surveyed before leaving this area. The unit train will be staged in the Unit Train Enclave, which is surrounded by a seven foot tall fence and is located approximately 180 feet east of Paddys Run Road and extends to the

**Technical Report Summary:**

Transportation and Disposal Plan for Operable Unit 1, USDOE-Fernald, April 1998 Document # 10400-PL-0004

(issued May 27, 1998 for Off-Site Committee)

site's west perimeter fence. Unit trains are to be assembled approximately every other week and will be scheduled for departure with seven days notice provided to CSXT. Cars will be inspected before leaving the site. The CDF will decontaminate the cars before they are returned to Fernald.

**What are the emergency response procedures involved in rail transportation of this waste?**

When the shipment is off-site, the rail carrier becomes responsible for providing emergency response support to local authorities. The rail carrier also has contractors available for containment and cleanup. DOE will advise and provide support as requested by the local response authority. Local response personnel are usually the first to arrive at the scene. DOE will provide training to many of these organizations along transportation routes. Shipping papers are provided to allow them to determine the hazards in the event of an accident. The Fernald Environmental Management Project (FEMP) emergency team is activated when the railroad or local organization contacts the FEMP to notify DOE that an incident has occurred. The FEMP Communications Center's 24-hour phone number is enclosed in the necessary paperwork. The Communication Center will maintain direct communication with the on-scene Incident Commander and the FEMP Assistant Emergency Duty Officer (AEDO) until the Emergency Operations Center (EOC) is activated. The EOC is activated when the Emergency Director or Deputy Emergency Director arrives on the scene. The EOC makes protective action recommendations, provides notifications, and obtains necessary resources.



**FERNALD  
CITIZENS  
ADVISORY  
BOARD**

**Technical Report Summary:**

Transportation and Disposal Plan for Operable Unit 1, USDOE-Fernald, April 1998 Document # 10400-PL-0004  
(issued May 27, 1998 for Off-Site Committee)

May 25, 1998

Engineering News Record

Page 95

"Heavy Contractors Feeling Weight of Stalled Transportation Bill"

By: William G. Krizan, with Tom Ichniowski and William A. Angelo

# Heavy Contractors Feeling Weight of Stalled Transportation Bill

## Firms are ready to roll but states are running out of cash

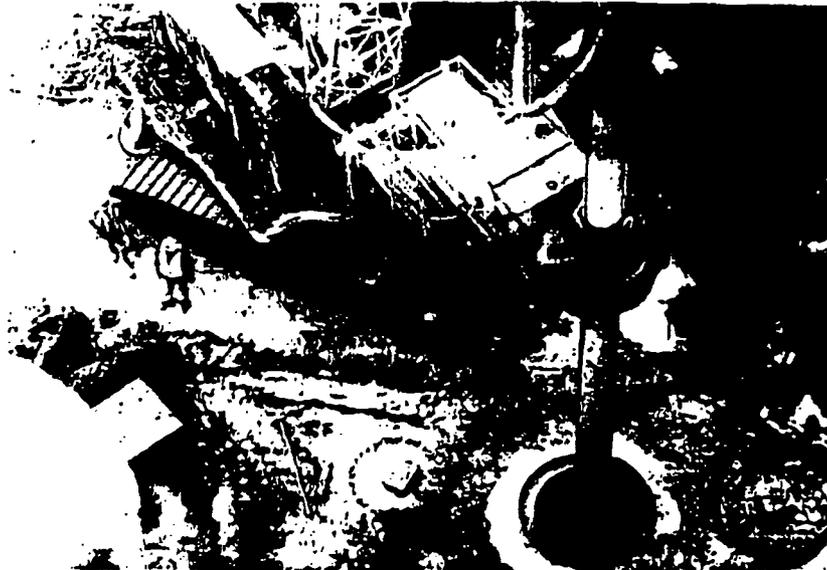
**A**s mild temperatures arrive and rain and storms finally loosen their grip on large parts of the U.S., the stage is set for another great heavy construction season. The only thing missing is the key actor with the biggest wallet, the federal government and its multiyear transportation spending law. But that player is stalling up and contractors hope that it will be in time.

The dry weather and mild temperatures have "paving contractors in hog heaven," says Peter K.W. Wert, chairman of road contractor Haskell Lemon Construction Co., Oklahoma City, and national president of the Associated General Contractors. "But the uncertainty in major funding hangs like a cloud over the mood of contractors that bid and build in that market."

The main problem is that some states have run completely out of money for road and transportation projects due to delays in Congress over the passage of the multibillion-dollar successor to the 1991 Intermodal Surface Transportation Efficiency Act. The entire roadbuilding season conceivably could be lost in northern tier states if Congress does not act quickly, says Wert. But he remains optimistic. "We will get a bill and we think [the President] will sign it," he says.

States have been unable to obligate new federal highway aid since May 1, when a short-term extension to ISTEA expired. And if states have no cash reserves of their own to get projects started, they are out of luck and so are contractors.

House and Senate conferees have been working on the final version of a new bill for weeks. On May 13, an agreement among congressional leaders was announced on overall spending for the bill, and how some of it will be offset through cuts elsewhere in the federal budget. But Office of Management and Budget Director Franklin D. Raines says a presidential veto will be recommended if the final bill's total comes in too high.



Conferees "still have a lot of work to do," says Senate Environment and Public Works Committee Chairman John H. Chafee (R-R.I.). Unresolved issues include developing a formula for dividing highway funds among states and the fate of special "demonstration projects." The formula will be important not just for lawmakers seeking big shares for their states but also for those many contractors who work within only one region or a single state.

The House version of the bill would provide \$218 billion over six years; the Senate bill's total now is \$214 billion. Under the agreement, the new total would be about \$200 billion. It is certain that the new measure will provide a substantial increase over ISTEA, which authorized \$155 billion over six years.

ISTEA isn't the only item heavy contractors are watching on Capitol Hill. Also up for renewal this year are the Federal Aviation Administration's Airport Improvement Program, which provides construction grants, and the Water Resources Development Act, which authorizes Corps of Engineers flood control

lock and dam, dredging, environmental and beach replenishment jobs.

The Clinton administration has released its proposals for FAA and WRDA legislation, but Congress so far has not gone beyond hearings.

At the Morrison Knudsen Corp., President Robert A. Tinsman says he expects "a real upsurge in opportunities after ISTEA is passed" but admits to being frustrated by the delays. Currently, the market is flat, he says. Rebounding from a near-death experience, MK recently won the seismic retrofit of the San Mateo bridge in California for over \$100 million and is hoping to snag a \$250-million design-build contract for Interstate 895 in Richmond, Va., in joint venture with Fluor Daniel Inc.

Things are looking up for the once-troubled firm. "We had an excellent year last year—and all signs look good for the economy and the company," says Tinsman.

Kiewit Construction Group "had a pretty good year" last year, says Chairman Kenneth F. Sinson. Although Kiewit is number two in the heavy market

**"Heavy Contractors Feeling Weight of Stalled Transportation Bill"**  
By: William G. Krizan, with Tom Ichniowski and William A. Angelo

**THE ENR TOP 400 CONTRACTORS RANKING**

**TOP 50 DOMESTIC HEAVY CONTRACTORS**

RANK	FIRM	TOTAL	TRNSP.	SEWER	WATER	HAZ. WASTE
1	Bechtel Group Inc., San Francisco, Calif.	1,946.0	28	0	0	30
2	Kiewit Construction Group Inc., Omaha, Neb.	1,580.5	65	3	3	0
3	Fluor Daniel Inc., Irvine, Calif.	1,265.0	3	0	0	19
4	Granite Construction Inc., Watsonville, Calif.	822.3	78	0	4	0
5	Morrison Knudsen Corp., Boise, Idaho	728.0	24	0	3	30
6	The Walsh Group, Chicago, Ill.	487.0	23	14	10	0
7	Modern Continental Const. Co. Inc., Cambridge, Mass.	437.4	78	17	5	0
8	Raytheon Engineers & Constructors Int'l, Lexington, Mass.	417.0	20	0	1	10
9	Tutor-Saliba Corp., Sylmar, Calif.	389.3	65	0	10	0
10	Parisi Corp., Framingham, Mass.	374.0	27	1	2	0
11	Skanska (USA) Inc., Greenwich, Conn.	348.2	7	3	7	0
12	J.A. Jones Inc., Charlotte, N.C.	303.0	16	1	2	4
13	ICF Kaiser International Inc., Fairfax, Va.	273.9	14	3	0	75
14	International Technology Corp., Monroeville, Pa.	272.3	0	0	3	86
15	The Lane Construction Corp., Meriden, Conn.	270.0	97	0	3	0
16	H.B. Zachry Co., San Antonio, Texas	230.5	23	3	11	3
17	Dillingham Construction Holdings Inc., Pleasanton, Calif.	228.0	12	9	3	0
18	T.L. James & Co. Inc., Ruston, La.	220.2	82	0	0	11
19	Hubbard Construction Co., Orlando, Fla.	218.9	90	10	0	0
20	PCL Enterprises Inc., Denver, Colo.	211.1	14	4	10	1
21	Foster Wheeler Corp., Clinton, N.J.	210.9	0	1	0	26
22	Renel Phelps Construction Co., Greeley, Colo.	203.8	20	0	0	1
23	Great Lakes Dredge and Dock Co., Oak Brook, Ill.	202.3	100	0	0	0
24	Pitt-Des Moines Inc., Pittsburgh, Pa.	188.0	28	1	28	17
25	Traylor Bros. Inc., Evansville, Ind.	185.0	89	9	3	0
26	Angelo Infrate Construction Co., Warren, Mich.	177.7	70	10	5	5
27	Kokosing Construction Co. Inc., Fredericktown, Ohio	167.3	44	4	4	0
28	Norse Diesel International Inc., New York, N.Y.	160.0	18	0	0	0
29	Flatiron Structures Co. LLC, Longmont, Colo.	159.0	100	0	0	0
30	Dick Corp., Pittsburgh, Pa.	157.0	25	5	2	0
31	Williams Brothers Construction Co. Inc., Houston, Texas	155.0	100	0	0	0
32	E.L. Yeager Construction Co. Inc., Riverside, Calif.	148.5	80	0	10	0
33	P.J. Dick Inc., Pittsburgh, Pa.	148.1	72	0	0	0
34	Vacallo & Grogan Inc., Beckley, W.Va.	148.0	100	0	0	0
35	Wilder Construction Co., Everett, Wash.	141.8	65	0	0	14
36	Danis Environmental Industries Inc., Dayton, Ohio	141.0	0	82	18	0
37	Meadow Valley Corp., Phoenix, Ariz.	140.0	100	0	0	0
38	Brown & Root Inc., Houston, Texas	139.9	8	0	0	0
39	Weeks Marine Inc., Cranford, N.J.	138.5	92	0	0	0
40	McCarthy, St. Louis, Mo.	138.9	9	4	0	0
41	MCM Construction Inc., North Highlands, Calif.	139.0	100	0	0	0
42	Blythe Construction Inc., Charlotte, N.C.	133.3	100	0	0	0
43	Fred Weber Inc., Maryland Heights, Mo.	130.0	100	0	0	0
44	Lunda Construction Co., Black River Falls, Wis.	128.7	81	0	4	0
45	J.F. White Contracting Co., Newtonville, Mass.	127.7	70	20	0	0
46	Anderson Columbia Co. Inc., Lake City, Fla.	124.9	79	10	1	10
47	Clerkston Construction Co., Kansas City, Mo.	124.7	95	0	0	0
48	Sverdrup Corp., Maryland Heights, Mo.	124.5	17	12	4	2
49	The Branch Group Inc., Abnaska, Va.	121.5	57	0	1	0
50	Herzog Contracting Corp., St. Joseph, Mo.	121.0	95	5	0	0

1997 Revenue in \$ mil. Ranked by domestic revenues, including construction management at-risk. Projects include transportation, bridges, rail, storm water and water supply. Excludes government.

Sunson understates the importance of that market to the firm. "The aggregate is what counts at the end of the year," he says.

Kiewit has been reshaping the way it approaches transportation projects over the past five years, starting with the joint venture development of the \$800-million design-build San Joaquin Toll Road in California completed last year and continuing with the \$1.4 billion I-15 now under construction in Salt Lake City. Kiewit always has been focused almost exclusively on the U.S. and Canada and that is still where the greatest opportunities lie ahead, says Sunson.

Raytheon Engineers & Constructors is hitting it big with rail and port projects. The firm landed the \$1.1-billion Hudson-Bergen light rail contract in New Jersey and will be bidding on a \$200-million commuter rail project linking Camden with Elizabeth. "Rail projects, [either] light, commuter and freight, are hot and we can't hire enough people to do the work in front of us," says Lawrence E. Shaw, RE&C vice president.

The firm also is scrambling to keep up with its port work at home and abroad. But the biggest prize may be closest to home. "I'm looking at the biggest port opportunity in the world outside my window," says Shaw from his New York City office. "We're talking with the port authority on the best way to maximize harbor potential."

Earlier this year, RE&C also was tapped to design and construct the first privately owned toll road in Texas. The 21.8-mile Camino Colombia Toll Road will connect I-35 with the Solidarity Bridge in Laredo. The \$55-million road, when completed next year, will help ease truck traffic congestion brought on by the North America Free Trade Agreement.

Granite has just wrapped up "a great quarter" that partly was blown in by El Niño storms, says a spokesman. He adds that the storms were "both a blessing and a curse" because there was a tremendous amount of repair work done by Granite on an emergency basis, but they also prevented the firm from working off much of its record backlog. El Niño repairs accounted for 10 to 20% of Granite's \$183-million first quarter ending March 31 and that work tended to be more profitable. Although Caltrans sets the compensation for such work, the equipment utilization rates were extremely high as machines ran 24 hours per day.

By William G. Krizan, with Tom Ichniowski and William A. Angelo

19

May 25, 1998

Engineering News Record

Page 56

"Markets Are Mixed but Advancing Overall"

By: Gary J. Tulacz

## THE 1998 TOP 400 AT A GLANCE

VOLUME						MARKET ANALYSIS			
	DOMESTIC		INTERNATIONAL		TOTAL		TYPE OF WORK	REVENUE \$MIL.	PERCENT OF TOTAL
	\$BIL.	% CHG.	\$BIL.	% CHG.	\$BIL.	% CHG.			
REVENUE	112.9	+3.0	25.4	+7.0	138.3	+3.7	BUILDING	82,642.8	45.3
NEW CONTRACTS	123.4	+0.1	37.0	+11.2	160.3	+2.5	MANUFACTURING	9,947.8	7.2
<b>PROFITABILITY</b>									
	NUMBER OF FIRMS REPORTING PROFIT		NUMBER OF FIRMS REPORTING LOSS		AVERAGE % PROFIT LOSS				
DOMESTIC	214		16		8.38	NA			
INTERNATIONAL	61		13		4.01	NA			
<b>PROFESSIONAL STAFF</b>									
	NUMBER OF FIRMS REPORTING DOMESTIC		NUMBER OF FIRMS REPORTING INT'L		AVERAGE % DOMESTIC INT'L				
INCREASE	239		23		12.08	29.70			
DECREASE	17		2		7.13	19.50			
SAME	128		33		NA	NA			
<b>BACKLOG</b>									
	NUMBER OF FIRMS REPORTING HIGHER		NUMBER OF FIRMS REPORTING LOWER		AVERAGE % HIGHER LOWER				
HIGHER	239		62		41.12	17.75			
LOWER	62		88		NA	NA			
SAME	88								
						<b>INTERNATIONAL REGIONS</b>			
							NUMBER OF FIRMS	REVENUE \$MIL.	PERCENT OF TOTAL
							30	1,939.0	7.8
							44	3,585.0	14.1
							36	1,029.7	4.1
							35	8,344.5	24.9
							25	3,423.8	13.5
							41	7,587.3	29.8
							22	1,318.8	8.0
							2	6.3	0

\* Based on revenue reported in 1997. NA= not available or not applicable

Corp., from this year's list because it is in the process of being acquired by International Technology Corp. OHM reported over \$600 million in revenue on last year's Top 400. The sewer and wastewater market also fell, from \$3.3 billion in 1996 to \$2.6 billion in 1997. The industrial process market fell nearly 14%. And the water supply market dropped 7.7%.

While these market declines might be troubling, only two market segments have declined over the period of 1994 to 1997: petroleum and power. The petroleum market, which has been slow domestically for several years, fell 12% in 1997. This is down 9.2% from 1994. And the power market, which has been stalled in anticipation of the impact of U.S. deregulation, was steady in 1997, falling 0.3% from 1996, but 13.4% since 1994. In contrast, the manufacturing market dropped 4.7% in 1997 to \$9.95 billion. But this is 53% above 1994's mark of \$6.5 billion. Thus, the declines in individual markets do not signal a potential downturn as much as reflect the normal ups and downs of a mature, steady industry.

Contractor reactions to the current market generally reflect that there is little to worry about. "We are coming off the best year in the history of our company, both in sales and revenue," notes Mark Pendleton, president of Mitchell Contractors. And for the management of the Austin Co., which recently bought the firm back from National Gypsum, the market has provided a double level of satisfaction. "We had a five-year plan to pay off the purchase, but hoped to do it in three years," says Bill Melsop, Austin's CEO. "We did it in 11 months," he notes.

The strong market seems to be geographically widespread. "The market is very strong throughout the Sunbelt, from the District of Columbia through Florida and the Southeast, to the Southwest and Southern California," says Robert E. Fox, president of Turner Construction Co. "The Gulf Coast is really hot for the process and energy markets," says Robert Hambright, senior vice president of J.A. Jones and manager of its technologies group. "It's one of the hottest markets in the world and we expect it to get stronger and stronger," he says.

On the West Coast, work seems to be moving South. "There

is some slowing in Portland and in Silicon Valley with a slowdown in some of the microelectronics market just as Los Angeles is waking up," says Jeff Hoopes, senior vice president of Swinerton Inc. But high-tech continues to drive the California market "because it generates not only manufacturing capabilities but also additional office requirements," says William H. Higgins, CEO of Dillingham Construction Corp.

Even regions that had been struggling are upbeat. "They used to make jokes about the Rust Belt, but the market seems to have knocked some of that rust off," says Melvin Gray, CEO of Gravor. "Every part of the U.S. where we are active is hot," says Jack J. Woolf, a J.A. Jones senior vice president and head of the firm's building group. "Even the Northeast is coming out of the doldrums," he says.

## DIGITAL DOLLARS

Contractors are becoming more adept and comfortable in using technology, and it is paying dividends. "We've been through four generations of technology, and we didn't see the productivity gains we had hoped for in the first three," says Glenn Hobrutschk, chief financial officer of The Austin Co. But the productivity gains of Austin's latest investment in computers are paying off. Austin's intranet "allows the leveling out of the workload and lets us bring material and talent to bear where and when needed," he says. "We don't have to send people to regional offices for months at a time."

The speed and functionality of the equipment has helped make the technology pay off, but so has the employees' growing familiarity with it, says Pat Flanagan, chief operating officer. "We are now dealing with the first generation of architects and engineers who grew up computer savvy," he adds.

Many contractors have been slow to take advantage of new technology. "We've talked the talk on technology, but now we are beginning to walk the walk," says Charlie Bacon, president of the North Atlantic region for Bovis Inc. "E-mail is basic. And just-in-time reporting and procurement are just starting to pay off," he says. "The ability to have a database for

May 25, 1998

Engineering News Record

Page 56

"Markets Are Mixed but Advancing Overall"

By: Gary J. Tulacz

Page 3 of 7

## THE TOP 20 CONTRACTORS

THE TOP 20  
INDUSTRIAL PROCESS/PETRO

Revenue: \$24.05 billion

- 1 Bechtel Group Inc.
- 2 Fluor Daniel Inc.
- 3 Brown & Root Inc.
- 4 Foster Wheeler Corp.
- 5 The M.W. Kellogg Co.
- 6 ABB Lummus Global Inc.
- 7 McDermott International Inc.
- 8 Raytheon Engrs. & Constructors Int'l
- 9 Chicago Bridge & Iron Co.
- 10 The Kvaerner Group
- 11 Stone & Webster
- 12 Turner Industries Ltd.
- 13 BE&K Inc.
- 14 Glibane Building Co.
- 15 Morrison Knudsen Corp.
- 16 Global Industries Ltd.
- 17 Aker Maritime Inc.
- 18 Fru-Con Construction Corp.
- 19 H.B. Zachry Co.
- 20 TIC Holdings Inc.

THE TOP 20  
POWER

Revenue: \$5.86 billion

- 1 Bechtel Group Inc.
- 2 Fluor Daniel Inc.
- 3 Black & Veatch
- 4 Raytheon Engrs. & Constructors Int'l
- 5 Foster Wheeler Corp.
- 6 Stone & Webster
- 7 Morrison Knudsen Corp.
- 8 Day & Zimmermann International Inc.
- 9 NEPCO
- 10 McDermott International Inc.
- 11 J.A. Jones Inc.
- 12 Kiewit Construction Group Inc.
- 13 H.B. Zachry Co.
- 14 Parsons Corp.
- 15 TIC Holdings Inc.
- 16 ABB Lummus Global Inc.
- 17 The Rudolph/Libbe Cos. Inc.
- 18 J.S. Alberici Construction Co. Inc.
- 19 Dick Corp.
- 20 Clvas Corp.

THE TOP 20  
TRANSPORTATION

Revenue: \$7.7 billion

- 1 Kiewit Construction Group Inc.
- 2 Bechtel Group Inc.
- 3 Granite Construction Inc.
- 4 Tutor-Saliba Corp.
- 5 Perini Corp.
- 6 Modern Continental Const. Co. Inc.
- 7 Fluor Daniel Inc.
- 8 Morrison Knudsen Corp.
- 9 Raytheon Engrs. & Constructors Int'l
- 10 The Lane Construction Corp.
- 11 Great Lakes Dredge and Dock Co.
- 12 Parsons Corp.
- 13 The Walsh Group
- 14 Brown & Root Inc.
- 15 J.A. Jones Inc.
- 16 Hubbard Construction Co.
- 17 T.L. James & Co. Inc.
- 18 Hensel Phelps Construction Co.
- 19 Dillingham Construction Holdings Inc.
- 20 Traylor Bros. Inc.

THE TOP 20  
HAZARDOUS WASTE

Revenue: \$4.0 billion

- 1 Fluor Daniel Inc.
- 2 Bechtel Group Inc.
- 3 Morrison Knudsen Corp.
- 4 International Technology Corp.
- 5 Foster Wheeler Corp.
- 6 ICF Kaiser International Inc.
- 7 Raytheon Engrs. & Constructors Int'l
- 8 CH2M Hill Cos. Ltd.
- 9 Radlan International LLC
- 10 Severson Environ. Services Inc.
- 11 Earth Tech Inc.
- 12 Pitt-Oss Molnes Inc.
- 13 J.A. Jones Inc.
- 14 T.L. James & Co. Inc.
- 15 The Tyree Organization Ltd.
- 16 Wilder Construction Co.
- 17 H.B. Zachry Co.
- 18 Hensel Phelps Construction Co.
- 19 The Conti Cos.
- 20 CCC Group Inc.

all your project management systems definitely aids in productivity," says Matthew Walsh, chairman of The Walsh Group.

Technology also is a market driver. "Projects are getting more complex," says William R. Johnson, president of The Carlson Group Inc. "You have to worry about connectivity, security and electrical and mechanical backups, and telephone rooms now look like the inside of a computer," he notes. "You can't just wrap a box around the equipment inside when the process is fully integrated into the facility," says Grant McCullagh, CEO of McClier. "You have to consider everything from equipment to systems to harmonics. There are no dumb boxes anymore."

A growing trend is the use of financial incentives by clients. "We are seeing more contracts that contain incentives where we share in whatever savings we generate for clients," says Bacon. Often, these clauses are tied as much to schedules and quality as to monetary savings and contain penalty clauses, as well, says Walsh. "This is because clients understand that time is money," Bacon says.

The pressure to "get it done" means that there is an increasing emphasis by clients on the experience not just of the contractor but the individuals who will be working on the project. "Every client we have looks at managers' prior experience in their kind of job," says Fee of Turner Construction. "You can't come in to an interview on a hospital job with someone whose last project was a shopping mall." So Turner is emphasizing diversity not just to avoid cyclical downturns but to ensure that its staff has a broad variety of experience, Fee says.

On the other hand, being a specialist can pay off, too. "We have \$403 million in contracts related to health care and have \$184 million in backlog," says John Darnall, executive vice president of Brasfield & Gorrie. The firm has regular work with 30 major clients, most of which is negotiated. He agrees that clients demand experienced people. "We have to have specially trained supers and other personnel" to keep working, he says.

The general building market powered the overall construction industry in 1997 and promises to continue its dominance over the next year or two (see p. 91). "The real estate market is well fed with capital," says Gray. "Let's hope it's not too well fed."

Contractors in the transportation

May 25, 1998

Engineering News Record

Page 56

**"Markets Are Mixed but Advancing Overall"**

By: Gary J. Tulacz

**THE HEAVY AND INDUSTRIAL CONSTRUCTION MARKETS**

market continue to await with excited anticipation the outcome of the congressional debate over the new Intermodal Surface Transportation Efficient Act (see pp. 11 and 95). "Whatever the outcome, it has to be a bunch of money," says Michael F. Gaffney, executive vice president of ICF Kaiser International. But contractors are enjoying a boom market in transportation beyond ISTEA II.

Airports are proving to be a huge market. "It is a big market for us," says Edward C. Collins, vice chairman, Morse Diesel International. The firm is at work on three projects totaling over \$1 billion at JFK International Airport, including the international arrivals building, terminal 1 and the British Airways terminal, he notes. Morse Diesel also is working at Cleveland-Hopkins International Airport and San Francisco International Airport, and it has a proposal in for the \$250 million expansion at the Jacksonville, Fla., airport. "We'll also be bidding on about \$500 million in expansion work at Miami International Airport," Collins says.

Heavy rail also is blossoming into a big market. "Railroads were losing money for 40 years, but a surge of work has given them five years of good profits," says Michael Cegelis, senior vice president of American Bridge. "But now they need additional rail to carry the traffic and more and heavier bridges. At this point, trains are forced to slow down every time they come to a bridge," he says.

**QUICK CHANGES**

The microelectronics market continues to be surprisingly sluggish. "It is a strong market, but it continues to be the most volatile," says Peter Nosler, president of DPR Construction. He notes that new technology and the limited shelf life of semiconductor products mean that turnarounds in the market, good or bad, can be rapid. "It's not unusual to see very abrupt changes in capital spending," he says.

Such a rapid turnaround is something that ICF Kaiser is banking on. It recently closed on the purchase of ICT Spectrum Constructors Inc., a contractor and construction management firm specializing in the microelectronics market that had been known as Micron Construction. "We were looking for ways of getting into cutting edge markets," says Gaffney. ICT's construction background coupled with Kaiser's engineering skills make the acquisition a perfect fit, he says.

The power market remains less than electric in anticipation of deregulation. But cogeneration can provide opportunities for well-positioned contractors. J.A. Jones sees the cogeneration market as an extension of its process work. "We have our energy and process work under one umbrella," says

Hambright. "Our energy work is mostly building powerplants at process plants that want to furnish their own steam." Deregulation has blurred the lines between process and energy, he says. "A lot of our process opportunities come from what used to be purely an energy client. Many of our energy opportunities come from clients who were once process companies."

Another opportunity in the power market that will only grow is nuclear decommissioning. "There are many nuclear plants that are nearing the end of their useful life and it won't be economical to revamp the old units," says Gaffney.

Contractors in hazardous waste are seeing a sluggish market, but are not sitting still. "There's not a lot of organic

growth potential, but there are areas where we can increase our participation," says Anthony DeLuca, CEO of International Technology Corp. IT's most dramatic move in that market has been its acquisition of OHM Corp., Findlay, Ohio, which could be completed on June 11 after a final shareholder vote on the merger.

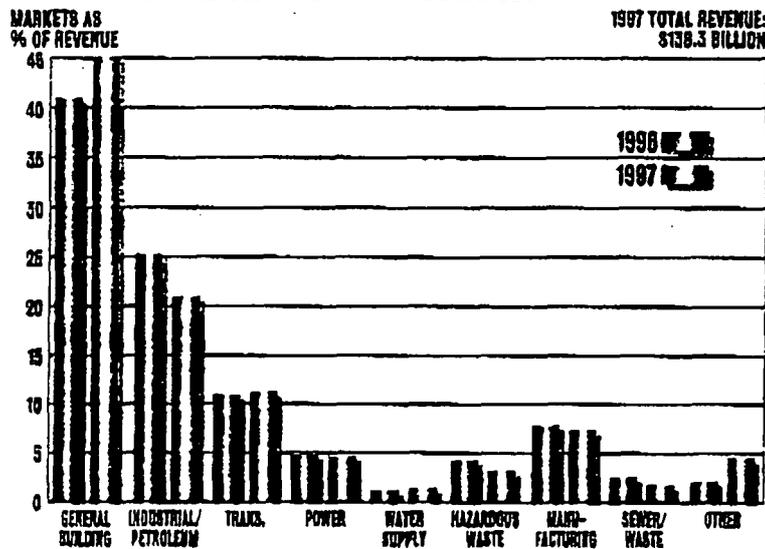
IT is not stopping there. "We are aggressively seeking an acquisition to provide

us with an international platform," says DeLuca. The most likely target would be an infrastructure engineering and construction firm "where we can bring our expertise to provide additional services," he says. IT is looking for a firm with wide international presence and good management, DeLuca says.

Another environmental firm working creatively is Earth Tech Inc. In the water and wastewater market, "we are seeing growth from design-build-operate packages domestically and internationally," says Diane Creel, Earth Tech's CEO. "We have \$250 million to \$300 million committed to financing. That is future backlog we wouldn't have if we couldn't have financed it," she says.

The public sector side is moving to a greater degree than ever toward remediation. "Markets are flat, declining on the front-end side, but making part of that up in remediation," says Creel. "There is a very large Dept. of Energy market," notes DeLuca. "DOE has been studying, analyzing and characterizing problems for a long time. But now they are getting into remediation," he says.

The private sector remediation market is uneven and highly competitive. "That market has been declining," says Gaffney of Kaiser. But DeLuca believes there will be an uptick in that market. "Corporate profits are up and companies are using some of these profits to attack problem areas like waste sites," he says. And Creel believes the new surge in California's economy, with the return of obsolete aerospace and military properties to commercial use, could increase the state's

**GENERAL BUILDING MARKET CONTINUES TO GROW**

May 25, 1998

Engineering News Record

Page 56

"Markets Are Mixed but Advancing Overall"

By: Gary J. Tulacz

Page 5 of 7

## TOP 100 CONTRACTORS BY NEW CONTRACTS\*

RANK	FIRM	1997 CONTRACTS*	RANK	FIRM	1997 CONTRACTS*
1	Bechtel Group Inc.	11,780.0	51	Webeor Builders	593.2
2	Fluor Daniel Inc.	8,800.0	52	The Kvaerner Group	593.0
3	Foster Wheeler Corp.	7,185.0	53	The Waltz Co. Inc.	587.2
4	Brown & Root Inc.	4,671.0	54	Suffolk Construction Co. Inc.	555.0
5	Morrison Knudsen Corp.	3,870.0	55	TIO Holdings Inc.	550.7
6	Kiewit Construction Group Inc.	3,737.0	56	The Pepper Cos.	549.5
7	The Turner Corp.	3,353.0	57	Fru-Con Construction Corp.	543.5
8	Canrex Corp.	3,151.7	58	Braefield & Garrie Gen. Contractor Inc.	538.4
9	Black & Veatch	2,937.0	59	Elfa-Don Construction Inc.	524.0
10	Skanska (USA) Inc.	2,906.5	60	Torcon Inc.	508.0
11	McDermott International Inc.	2,333.2	61	Kajima Construction Services Inc.	500.0
12	The M.W. Kellogg Co.	2,280.3	62	Kraus-Anderson Construction Co.	493.0
13	Raytheon Engineers & Constructors Int'l	2,199.0	63	The Beck Group	490.0
14	Bovis Inc.	2,166.7	64	Clck Corp.	487.0
15	ABB Lummus Global Inc.	2,131.5	65	Keating Building Corp.	460.0
16	Gilbane Building Co.	2,029.4	66	Manhattan Construction Co.	456.0
17	J.A. Jones Inc.	1,678.0	67	Day & Zimmerman International Inc.	445.7
18	PCL Enterprises Inc.	1,621.0	68	Faulkner Construction Co.	431.7
19	Structure Tone Inc.	1,609.0	69	JPI Construction Inc.	415.0
20	Tutor-Saliba Corp.	1,285.1	70	ARB Inc.	410.0
21	The Whiting-Turner Contracting Co.	1,285.0	71	M.B. Kahn Construction Co. Inc.	402.1
22	Barton Malow Co.	1,240.0	72	Carlson Design/Construct Corp.	392.5
23	DPR Construction Inc.	1,195.0	73	L.F. Orvisco Co.	391.5
24	Huber, Hunt and Nichols Inc.	1,194.0	74	The Austin Co.	391.0
25	McCarthy	1,190.0	75	Hardin Construction Group Inc.	380.8
26	Hensel Phelps Construction Co.	1,160.8	76	Brice Building Co. Inc.	390.0
27	Modern Continental Const. Co. Inc.	1,079.0	77	Sverdrup Corp.	385.8
28	Perini Corp.	1,068.0	78	Kokosing Construction Co. Inc.	383.5
29	IOF Kaiser International Inc.	1,054.8	79	H&H/McCluer	380.7
30	Rudolph & Slaten Inc.	1,042.0	80	Coupet DeMere Inc.	375.0
31	Austin Industries	1,040.0	81	The Haskell Co.	373.0
32	Marmol Correa Associates Inc.	1,012.0	82	Pathway Worldwide Construction Group	372.0
33	BE&K Inc.	988.0	83	Natchig Inc.	370.0
34	Swinerton Inc.	995.0	84	Alex J. Etkin Inc.	368.3
35	The Clark Construction Group Inc.	988.0	85	Pitt-Oss Meines Inc.	365.2
36	Dunn Construction Group	984.0	86	Bundt Corp.	365.1
37	Dillingham Construction Holdings Inc.	957.0	87	Holder Corp.	351.8
38	Granite Construction Inc.	910.0	88	CDI Contractors LLC	350.0
39	The Walsh Group	909.2	89	Earth Tech Inc.	348.0
40	Moraw Diesel International Inc.	903.0	90	Walton Construction Co. Inc.	341.8
41	Chicago Bridge & Iron Co.	881.0	91	The Finco Cos. Inc.	340.0
42	M.A. Mortenson Co.	837.3	92	Aker Maritime Inc.	339.0
43	Opus Group of Cos.	822.4	93	Berry, Botte & Led Duke Inc.	338.8
44	Stone & Webster	793.0	94	W.G. Yates & Sons Construction Co.	329.0
45	Baugh Enterprises Inc.	767.8	95	HBE Corp.	328.0
46	Walbridge Aldinger	735.5	96	Oltmans Construction Co. Inc.	324.0
47	J.S. Alberici Construction Co. Inc.	682.2	97	Layton Construction Co. Inc.	314.4
48	H.B. Zachry Co.	645.4	98	Graycor	307.0
49	Devcon Construction Inc.	600.0	99	W.E. O'Neil Construction Co.	301.2
50	International Technology Corp.	599.0	100	Walter & SCI Const. (USA) Inc.	298.0

\* Among Top 400 firms providing contracts in 1997

market for private work by up to 25%.

The process markets have also been uneven. For example, in the metals sector, there is a lot of concern about overcapacity. "We are worried about a softening in the price of copper, which also would affect the gold market," says Oliver. There are similar concerns about aluminum. "With the number of studies for new smelters being conducted, it looks like a bit of bluff poker is being played," says Gaffney. He says that, while there are at least six smelters under study in North America, he doubts that more than two actually will be built.

In steel, "we are seeing capacity enhancements and modernizations, and even new mills being built," says Gray. And while there have been concerns about the amount and quality of usable scrap and feedstock for mini-mills, Gray says he has not seen any significant constraints on the market.

In the petroleum field, depressed oil prices are causing worries. "I haven't seen [work] slow down in the upstream oil market despite depressed prices," says Oliver. "Oil companies are positioning for the long term, not for short-term swings. They know they need reserves for the next 15 to 20 years."

The market is demanding more sophisticated process technology. "One of the problems is that the feed stocks are getting heavier, with higher sulfur contents, just at the time when the market is moving away from high sulfur content for environmental reasons," says Daniel McCarthy, vice president and general manager of ABB Lummus Technology. "That is why Lummus has focused so heavily on developing or licensing process technology."

One firm that has been benefiting indirectly from the hot international petrochemical market is J.A. Jones. "As U.S. firms rushed to Asia, it opened an opportunity for us here in the U.S.," according to Hambright. "It helped us get stronger by giving us the opportunity to get closer to our clients here," while other firms were chasing jobs abroad.

Overall, ENR's Top 400 feel good about the industry and the future. "If you are a contractor and you are not busy, you are just not answering your telephone," says Gray. Matthew Walsh, of The Walsh Group, agrees. "We haven't had a market this vibrant in a long time," he says. "The only question is whether we, as an industry, can continue to deliver a quality product."

By Gary J. Tulacz, with interviews

23

"Markets Are Mixed but Advancing Overall"  
By: Gary J. Tulacz

1497

# THE TOP 400 CONTRACTORS



## HOW TO USE THE TABLES

**COMPANIES** are ranked according to construction revenue (\*\*) in 1997 in \$ millions. Those with subsidiaries included (†) are listed by company rank on pp. 67 & 68. Firms not ranked last year are designated \*\*. Some markets may not add up to 100% due to omission of "other" miscellaneous market category. NA=Not available.

**FIGURES** include prime construction contracts, shares of joint ventures, subcontracts, construction portion of design-construct contracts and construction management "at risk" contracts when the firm's risks are similar to those of a general contractor. Figures also include the value of installed equipment when a firm has prime responsibility for specifying and procuring it within the scope of its construction contract.

**GENERAL BUILDING**—commercial buildings, offices, stores, educational facilities, government buildings, hospitals, medical facilities, hotels, apartments, housing, etc.

**MANUFACTURING**—auto assembly, electronic assembly, textile plants, etc.

**POWER**—thermal and hydroelectric powerplants, waste-to-energy plants, transmission lines, substations, cogeneration plants, etc.

**WATER SUPPLY**—dams, reservoirs, transmission pipelines, distribution mains, irrigation canals, desalination and potability treatment plants, pumping stations, etc.

**SEWERAGE/SOLID WASTE**—sanitary and storm sewers, treatment plants, pumping plants, incinerators, industrial waste facilities, etc.

**INDUSTRIAL PROCESS**—pulp and paper mills, steel mills, nonferrous metal refineries, pharmaceutical plants, chemical plants, food and other processing plants, etc.

**PETROLEUM**—refineries, petrochemical plants, offshore facilities, pipelines, etc.

**TRANSPORTATION**—airports, bridges, roads, canals, locks, dredging, marine facilities, piers, railroads, tunnels, etc.

**HAZARDOUS WASTE**—chemical and nuclear waste treatment, asbestos and lead abatement, etc.

RANK FIRM	1997 REVENUE*			MARKETS (% REVENUE)									
	TOTAL	INTERNATIONAL	NEW CONTRACTS	GEN. BLDG.	MFG.	POWER	WTR./SWR. WASTE	INDUS./PETRO.	TRANSP.	HAZ. WASTE	CON. AT RISK % OF REV.	1997 RANK	
1 Fluor Daniel Inc., Irvine, Calif.†	10,788.0	4,940.0	8,800.0	3	12	11	0	41	3	10	19	1	
2 Bechtel Group Inc., San Francisco, Calif.†	9,682.0	6,347.0	11,780.0	2	0	14	4	54	11	11	0	2	
3 Brown & Root Inc., Houston, Texas†	3,916.0	1,840.0	4,671.0	14	0	0	1	57	6	0	34	5	
4 Centex Corp., Dallas, Texas†	3,262.6	.3	3,151.7	88	2	0	0	0	0	0	16	4	
5 The Turner Corp., New York, N.Y.†	3,150.7	69.5	3,353.0	100	0	0	0	0	0	0	80	6	
6 Foster Wheeler Corp., Clinton, N.J.†	2,632.0	1,850.9	7,185.0	0	0	19	0	63	0	10	20	7	
7 Kiewit Construction Group Inc., Omaha, Neb.†	2,457.0	212.0	3,737.0	17	2	5	5	3	54	0	0	9	
8 Baytheon Engineers & Constructors Int'l, Lexington, Mass.†	2,125.0	789.0	2,199.0	0	0	28	0	51	13	7	0	8	
9 Skanska (USA) Inc., Greenwich, Conn.†	2,009.8	.0	2,808.5	78	0	0	10	5	7	0	58	15	
10 O'Hare Building Co., Providence, R.I.†	1,922.7	.0	2,029.4	68	8	0	0	20	3	0	49	12	
11 McDermott International Inc., New Orleans, La.†	1,820.7	925.8	2,333.2	0	0	8	0	92	0	0	0	10	
12 ABB Lummus Global Inc., Bloomfield, N.J.†	1,593.6	1,169.6	2,131.5	0	0	3	0	97	0	0	20	15	
13 The M.W. Kellogg Co., Houston, Texas†	1,581.6	1,271.3	2,260.3	0	0	0	0	100	0	0	17	11	
14 Morrison Knudsen Corp., Boise, Idaho†	1,481.0	191.0	3,670.0	1	8	14	3	25	22	27	34	13	
15 Bovis Inc., New York, N.Y.†	1,464.2	.0	2,168.7	93	0	0	0	0	1	0	77	14	
16 J.A. Jones Inc., Charlotte, N.C.†	1,399.0	93.0	1,678.0	68	0	9	3	4	15	4	18	19	
17 The Clark Construction Group Inc., Bethesda, Md.†	1,325.0	.0	986.0	71	3	0	1	0	7	0	41	17	
18 Perini Corp., Framingham, Mass.†	1,276.0	19.0	1,088.0	69	0	1	3	0	27	0	41	20	
19 PCL Enterprises Inc., Denver, Colo.†	1,273.0	558.0	1,621.0	89	2	0	8	11	8	0	0	18	
20 Structure Tone Inc., New York, N.Y.†	1,272.8	164.8	1,809.0	100	0	0	0	0	0	0	100	28	
21 Black & Veatch, Kansas City, Mo.†	1,228.0	798.0	2,937.0	1	1	67	10	9	0	0	6	30	
22 McCarthy, St. Louis, Mo.	1,053.0	.0	1,160.0	72	11	0	4	4	9	0	0	33	
23 The Whiting-Turner Contracting Co., Baltimore, Md.	1,035.0	.0	1,265.0	63	10	0	0	9	3	0	48	28	
24 Granite Construction Inc., Watsonville, Calif.†	1,028.2	.0	910.0	0	0	0	4	0	75	0	0	27	
25 Dillingham Construction Holdings Inc., Pleasanton, Calif.†	1,023.0	88.0	957.0	40	0	3	11	14	17	0	18	21	
26 Huber, Hunt and Nichols Inc., Indianapolis, Ind.	1,012.0	.0	1,194.0	50	15	0	0	0	9	0	71	25	
27 Morse Diesel International Inc., New York, N.Y.	1,000.0	.0	803.0	84	0	0	0	0	18	0	82	36	
28 The Walsh Group, Chicago, Ill.†	993.0	.0	905.2	39	14	0	24	0	23	0	14	38	
29 Parsons Corp., Pasadena, Calif.†	871.4	351.4	NA	53	3	6	1	11	25	0	78	22	
30 Hensel Phelps Construction Co., Greeley, Colo.	935.5	.0	1,160.8	76	3	0	0	0	20	1	41	31	

24

May 25, 1998  
 Engineering News Record  
 Page 56  
 "Markets Are Mixed but Advancing Overall"  
 By: Gary J. Tulacz

## THE TOP 400 CONTRACTORS SUBSIDIARIES LISTED BY RANK

RANK	FIRM	RANK	FIRM	RANK	FIRM	RANK	FIRM
1	Fluor Constructors International Inc.	1	ABB Lummus Global BV ABB Lummus Global GmbH ABB Lummus Global Ltd. ABB Lummus Global s.r.o. ABB Lummus Heat Transfer BV ABB Lutach Resources Ltd. ABB Randall Corp. Lummus Altrazza Ltd. Co.	31	Parsons Europe, Middle East, Africa and South Asia Parsons Infrastructure & Technology Group Parsons Latin America Parsons Transportation Inc.	53	Kraemer Process Formerly: HCB Contractors Bent International de Mexico Bank Program Management HCBank
2	Bachtel Construction Co. Bachtel Corp. Bachtel National Inc. Bachtel Power Corp. Bacon Construction Co. Inc.	13	Granberry Ltd. M.W. Kellogg Ltd. Paragon Engineering	32	Arabian Tank Mfg. CBI Co. Ltd. CBI Constructors Inc. CBI Constructors Ltd. CBI Constructors Pty. Ltd. CBI Eastern Austral CBI Overseas CBI Services Inc. CBI Venezuela Norton CBI	54	Harmory Corp. International Maintenance Corp. International Piping Systems
3	Brown & Root Services Brown & Root U.K. Ltd.	14	Industrial Constructors MK Centennial MK Deutschland GmbH MK International Inc. Pomeroy Corp.	33	Stone & Webster Canada Ltd. Stone & Webster Engineering Ltd. Stone & Webster Management Consultants Inc.	57	Pepper Construction Co. Pacific Pepper Construction Co. of Indiana Pepper Construction Co. Pepper Environmental Technologies Inc. Pepper-Lawson Construction Inc.
4	Centax Construction Group Centax Construction Co. Inc. Centax Farouk Lamson Inc. Centax Landis Construction Co. Inc. Centax-Rodgers Construction Co. Centax-Rooney Construction Co. Inc.	18	Bovis Construction Corp. Bovis Management Systems Inc. Bovis de Mexico S.A. de C.V. Lahrer McGovern Bovis Inc. McDevitt Street Bovis Inc. Bahai Bovis Inc.	34	AW&S All States F.N. Thompson Saitz Construction Viasach Services	58	Edis-Don (West Indies) Ltd. Edis-Don Construction Ltd. Edis-Don Malaysia (M) SDN BHD Edis-Don Michigan Inc.
5	DAJ Construction Co. Ltd. EY Environmental Corp. The Lathrop Co. Inc. Turner Caribe Turner Construction Co. Turner South America Turner/On-Bite Universal Construction Co. Inc.	19	CrowJames Construction Co. J.A. Jones Construction Co. J.A. Jones Management Services Metria Constructors Inc. Rea Construction Co. Tensolma Builders	35	Hoffman Construction Co. of Alaska Hoffman Construction Co. of Calif. Hoffman Construction Co. of New Mexico Hoffman Construction Co. of Oregon Hoffman Construction Co. of Wash.	59	Ragnar Swanson Inc. The Austin Co. Ltd. The Austin Co. of U.K. Ltd.
6	Foster Wheeler (Thailand) Ltd. Foster Wheeler Andina Foster Wheeler Birmas Foster Wheeler Cariba Foster Wheeler China Foster Wheeler Eastern Private Ltd. Foster Wheeler Environmental Corp. Foster Wheeler France SA Foster Wheeler Harita SA Foster Wheeler Italiana SpA Foster Wheeler Ltd. Foster Wheeler Petroleum Dev. Ltd. Foster Wheeler USA Corp.	17	Shirley Contracting Corp.	37	Bud Bailey Construction Inc. Conroy Swinerton Construction Inc. Swinerton & Wulberg Co. Swinerton Industrial Inc. Swinerton Management & Consulting Inc. Westwood Swinerton Construction Inc. William P. Young Construction Inc.	60	TIC—International TIC—The Industrial Co. TIC—The Industrial Co. Wyoming Western Summit Constructors
7	Berkson Construction Co. Gilbert Central Corp. Gilbert Industrial Corp. Gilbert Southern Corp. Gilbert Texas Construction Corp. Gilbert Western Corp. Grow Tunneling Corp. Guernsey Stone & Construction Co. Kiewit Construction Co. Kiewit Industrial Co. Kiewit Pacific Co. Kiewit Western Co. Les Entreprises Kiewit Ltee. Mass Electric Construction Co. Peter Kiewit Sons Ltd. Turner Construction Co. Twin Mountain Construction Co. V.K. Mason Construction Ltd.	20	PCL Civil Constructors Inc. PCL Construction Management Inc. PCL Construction Services Inc. PCL Constructors Canada Inc. PCL Industrial Constructors Inc.	38	Barton Balow Rigging Co. The Argos Group	61	Hy-Yee Weltz Construction LLC
8	Bechtel Construction Co. Bechtel National Inc. Bechtel Power Corp. Bacon Construction Co. Inc.	21	Beck & Veatch Pritchard Inc.	39	Drake Construction Co. Duan Industrial Group LTS Constructors Inc. Witsher Construction Co.	62	Maphetan Environmental
9	Bechtel Construction Co. Bechtel National Inc. Bechtel Power Corp. Bacon Construction Co. Inc.	24	Bear River Constructors Desert Aggregates Inc. Intermountain Shury Seal Inc.	40	H.S. Zatory Co. (International)	63	D&Z Utility Services Inc. OZII Process & Industrial Div. Day & Zimmermann Construction Inc. Day & Zimmermann Infrastructure Inc. NPS Energy Services Inc.
10	Berkson Construction Co. Gilbert Central Corp. Gilbert Industrial Corp. Gilbert Southern Corp. Gilbert Texas Construction Corp. Gilbert Western Corp. Grow Tunneling Corp. Guernsey Stone & Construction Co. Kiewit Construction Co. Kiewit Industrial Co. Kiewit Pacific Co. Kiewit Western Co. Les Entreprises Kiewit Ltee. Mass Electric Construction Co. Peter Kiewit Sons Ltd. Turner Construction Co. Twin Mountain Construction Co. V.K. Mason Construction Ltd.	22	Construction Design Inc. Dillingham Construction Int'l Inc. Dillingham Construction NA Inc. Dillingham Construction Pacific Basin Ltd. Dillingham Construction Pacific Ltd. Hawallen Stimulus Paving & Precast Co. Hawallen Dredging Construction Co. Inland Industrial Constructors Inc. Wetson Dillingham Builders Inc. Wetson Engineers & Constructors Inc.	41	Ryan-Albertal Ltd.	64	Fru-Con Engineering Inc. Fru-Con Technical Services Inc. H.E. Sargent Inc.
11	Babcock & Wilcox J. Ray McDermott SA	23	Archer-Western Contractors Fort Calumet Walsh Construction Co. of Ill. Walsh Northeast Walsh Pacific	42	Belding Walbridge Walbridge Brown & Root Int'l	65	TIC—International TIC—The Industrial Co. TIC—The Industrial Co. Wyoming Western Summit Constructors
12	ABB Lummus Global	25	Formerly: The Parsons Corp. Parsons Asia Pacific Parsons Development Group Parsons Energy & Chemicals Group Inc.	43	Austin Bridge & Road Inc. Austin Commercial Inc. Austin Industrial Inc.	66	Ny-Yee Weltz Construction LLC
		26	Archer-Western Contractors Fort Calumet Walsh Construction Co. of Ill. Walsh Northeast Walsh Pacific	44	Olek Corp. of Puerto Rico Olek Industrial	67	Maphetan Environmental
		27	Formerly: The Parsons Corp. Parsons Asia Pacific Parsons Development Group Parsons Energy & Chemicals Group Inc.	45	Opus Corp. Opus East LLC Opus North Corp. Opus Northwest LLC Opus South Corp. Opus West Corp.	68	D&Z Utility Services Inc. OZII Process & Industrial Div. Day & Zimmermann Construction Inc. Day & Zimmermann Infrastructure Inc. NPS Energy Services Inc.
		28	Archer-Western Contractors Fort Calumet Walsh Construction Co. of Ill. Walsh Northeast Walsh Pacific	46	Black Construction Co. Black Witro E.E. Black Ltd. G.W. Murphy	69	G.R. Fedrick Inc. GRF Integrated Solutions Inc. Earl Construction Co. Inc. Wintaman Construction Co. Inc.
		29	Construction Design Inc. Dillingham Construction Int'l Inc. Dillingham Construction NA Inc. Dillingham Construction Pacific Basin Ltd. Dillingham Construction Pacific Ltd. Hawallen Stimulus Paving & Precast Co. Hawallen Dredging Construction Co. Inland Industrial Constructors Inc. Wetson Dillingham Builders Inc. Wetson Engineers & Constructors Inc.	47	Black Construction Co. Black Witro E.E. Black Ltd. G.W. Murphy	70	Kaiser Engineers Inc. Kaiser Engineers Pty. Ltd. Kaiser-Hill LLC
		30	Opus Corp. Opus East LLC Opus North Corp. Opus Northwest LLC Opus South Corp. Opus West Corp.	48	Black Construction Co. Black Witro E.E. Black Ltd. G.W. Murphy	71	Sverdrup Civil Inc. Sverdrup Environmental Inc. Sverdrup Facilities Inc. Sverdrup Technology Inc.
		31	Parsons Europe, Middle East, Africa and South Asia Parsons Infrastructure & Technology Group Parsons Latin America Parsons Transportation Inc.	49	Black Construction Co. Black Witro E.E. Black Ltd. G.W. Murphy	72	Chotow/Yates Superior Asphalt Inc. Yates Engineering Corp.
		32	Arabian Tank Mfg. CBI Co. Ltd. CBI Constructors Inc. CBI Constructors Ltd. CBI Constructors Pty. Ltd. CBI Eastern Austral CBI Overseas CBI Services Inc. CBI Venezuela Norton CBI	50	Opus Corp. Opus East LLC Opus North Corp. Opus Northwest LLC Opus South Corp. Opus West Corp.	73	Cartson Associates
		33	Stone & Webster Canada Ltd. Stone & Webster Engineering Ltd. Stone & Webster Management Consultants Inc.	51	Baugh Construction Co. Baugh Construction Oregon Baugh Industrial Constructors	74	Environmental Care Inc. Environmental Gulf Velux Great Velux Great Free Co.
		34	AW&S All States F.N. Thompson Saitz Construction Viasach Services	52	Kraemer Process Formerly: HCB Contractors Bent International de Mexico Bank Program Management HCBank	75	H&M Services Inc. Holmes & Narver Inc. RSAL
		35	Hoffman Construction Co. of Alaska Hoffman Construction Co. of Calif. Hoffman Construction Co. of New Mexico Hoffman Construction Co. of Oregon Hoffman Construction Co. of Wash.			76	Corma/Kobusing Kobusing Materials Inc. McGraw/Kobusing

25

May 25, 1998

Engineering News Record

Page 91

**"General Builders on Top Floor as Markets Keep Growing"**

By: Tim Grogan with Stephen H. Daniels, Paul B. Rosta and Gary Tulacz

Page 1 of 2

1497

# General Builders on Top Floor as Markets Keep Growing

Revenue in 1997 increased an average of 15%

**E**ight years of economic expansion has lifted construction to new heights and general builders appear to be scaling the recovery's highest peaks. In 1997, general builders on ENR's Top 400 saw revenue grow 15%, to \$63 billion. This follows a 16% growth in revenue during 1996. Virtually all this growth was generated in the domestic market, where the Top 400 builders earned over 97% of their revenue.

The back-to-back double-digit growth allowed general builders to grab 45% of all Top 400 revenue, up from 40% the previous year. Contractors in other markets saw their share of Top 400 either shrink or make nominal gains (see chart p. 60).

Leading the general builders is an elite group of 50 contractors that account for 59% of all Top 400 building revenue. This group includes seven contractors with over \$1 billion in building revenues each. "Every market we are in is going very strong," says Bruce Hill, president of the Centex Construction Group, the commercial building arm of number-one ranked Centex Corp. Commercial construction accounts for \$1.1 billion, or about one-third, of Centex's total building revenue. Residential construction makes up the rest.

The broad-based recovery offers builders more stability and success. "If you can be diversified in both product mix and geography your chances for success increase dramatically, and this is

what we are trying to do," says Hill. For example, while Dallas-based Centex Construction Group focuses on commercial work, Nashville-based Centex/Rogers specializes in the medical market and Dyersburg, Tenn.-based Centex Forum Lannom goes after design-build industrial projects. Hill expects the strong growth experienced by all three markets to continue strong at least through 2000.

The general building boom is paying big dividends for The Turner Corp., ranked number two on this year's general builders list. "F.W. Dodge [Forecasting Group] projected a 3% increase in the total construction, but we see our markets up 8% this year and as much as 15% in 1999," according to Robert E. Fee,

## TOP 50 IN DOMESTIC GENERAL BUILDING REVENUE

RANK	FIRM	TOTAL*	RANK	FIRM	TOTAL*
1	Centex Corp., Dallas, Texas	3,245.5	26	Opus Group of Cos., Minnetonka, Minn.	542.6
2	The Turner Corp., New York, N.Y.	3,081.2	27	Kajima Construction Services Inc., Englewood Cliffs, N.J.	530.0
3	Skanaka (USA) Inc., Greenwich, Conn.	1,559.0	28	The Walsh Group, Chicago, Ill.	526.0
4	Fluor Daniel Inc., Irvine, Calif.	1,492.0	29	Webcor Builders, San Mateo, Calif.	521.5
5	O'Leary Building Co., Providence, R.I.	1,481.3	30	PCL Enterprises Inc., Denver, Colo.	503.9
6	Bovis Inc., New York, N.Y.	1,448.8	31	The Pepper Cos., Chicago, Ill.	493.6
7	Structure Tone Inc., New York, N.Y.	1,106.0	32	The Beck Group, Dallas, Texas	478.2
8	The Clark Construction Group Inc., Bethesda, Md.	980.5	33	Baugh Enterprises Inc., Seattle, Wash.	465.0
9	McCarthy, St. Louis, Mo.	874.0	34	Kiewit Construction Group Inc., Omaha, Neb.	455.7
10	Perini Corp., Framingham, Mass.	872.0	35	Hathaway Dinwiddie Const. Group, Santa Clara, Calif.	448.0
11	J.A. Jones Inc., Charlotte, N.C.	848.0	36	Suffolk Construction Co. Inc., Boston, Mass.	435.0
12	DPR Construction Inc., Redwood City, Calif.	842.0	37	Parsons Corp., Pasadena, Calif.	434.0
13	Morse Diesel International Inc., New York, N.Y.	840.0	38	Brasfield & Gorrie Gen. Cont. Inc., Birmingham, Ala.	421.4
14	The Whiting-Turner Contracting Co., Baltimore, Md.	754.5	39	Manhattan Construction Co., Dallas, Texas	412.0
15	Hensel Phelps Construction Co., Greeley, Colo.	751.7	40	The Waltz Co. Inc., Des Moines, Iowa	410.8
16	Barton Malow Co., Southfield, Mich.	734.0	41	Rudolph & Sletten Inc., Foster City, Calif.	409.5
17	Dunn Construction Group, Kansas City, Mo.	672.3	42	Dillingham Construction Holdings Inc., Pleasanton, Calif.	406.0
18	Huber, Hunt and Nichols Inc., Indianapolis, Ind.	664.0	43	L.F. Driscoll Co., Bala Cynwyd, Pa.	381.7
19	Marnell Corrao Associates Inc., Las Vegas, Nev.	630.0	44	J.S. Alberici Construction Co. Inc., St. Louis, Mo.	391.4
20	M.A. Mortenson Co., Minneapolis, Minn.	620.6	45	B&K Inc., Birmingham, Ala.	368.0
21	Swinerton Inc., San Francisco, Calif.	616.1	46	OC America Construction Inc., Los Angeles, Calif.	357.3
22	Kraus-Anderson Construction Co., Minneapolis, Minn.	580.0	47	Brown & Root Inc., Houston, Texas	351.1
23	Walbridge Aldinger, Detroit, Mich.	584.0	48	Carlson Design/Construct Corp., Atlanta, Ga.	348.2
24	Hoffman Corp., Portland, Ore.	564.0	49	Austin Industries, Dallas, Texas	343.5
25	Devoon Construction Inc., Milpitas, Calif.	560.0	50	The Austin Co., Cleveland, Ohio	323.6

\*1997 revenue in \$ mil. Ranked by domestic revenue, including construction management at-risk contracts for general building and manufacturing plants. Excludes process plants.

May 25, 1998

Engineering News Record

Page 91

**"General Builders on Top Floor as Markets Keep Growing"**

By: Tim Grogan with Stephen H. Daniels, Paul B. Rosta and Gury Tulacz

Page 2 of 2

president of Turner Construction Co.

Turner is active in a broad range of good markets, including aviation, pharmaceuticals and biotech, office projects and sports facilities. The firm has completed, or is working on, new or upgraded stadium and arena projects for the Denver Broncos, the California Angels, the Pittsburgh Penguins and the Princeton Tigers, among other teams. "But the K-12 school market is probably the fastest growing market, especially in the Sunbelt states," says Fee.

**REVENUE ROCKETS**

Fifth-ranked Gilbane Building Co. had its best year in its 125-year history during 1997, says Alfred K. Potter, Gilbane's senior vice president for sales and marketing. The firm reported a 9% increase in revenue last year. And with backlog growing at an even faster pace, Potter expects strong revenue growth to continue this year.

Gilbane's two hottest markets are prisons and educational buildings, which together accounted for about 40% of its new work in 1997. Both markets continue to "demonstrate their strength" in 1998, says Potter.

In the booming K-12 school market, Gilbane is seeing a growing number of program management contracts where school districts are encompassing multiple projects into one program. In addition, school districts are looking at new and innovative project delivery systems that are opening up new opportunities for firms like Gilbane, says Potter.

For example, the Houston Independent School District selected Gilbane to build two high schools using a construct, lease-back approach. "That was our first opportunity to provide our financing development capability in the K-12 market and we think that will prepare us well to serve other districts," says Potter. Getting involved in lease-back arrangements is good business because it adds greater value for its customers and allows Gilbane to target projects at an earlier stage, he says.

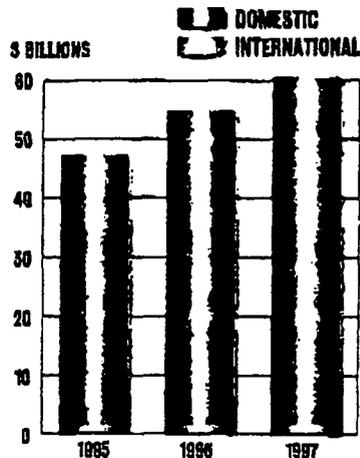
Along with a strong K-12 market, Gilbane is finding a growing amount of university work. The baby boom echo that is driving the K-12 market already is being anticipated by universities that have begun a number of substantial programs to ensure that they can attract the best students. In particular, Gilbane is finding a lot of work for athletic, recreational and technical facilities as well as new dormitories at the university level.

Many builders believe that the boom in Real Estate Investment Trusts (ENR 5/4 p. 22) is having a positive impact on

today's markets. "REITs add a level of balance and stability to an otherwise cyclical market," says Fee.

The hotel and hospitality market has particularly benefited from REITs. "It's our hottest market," says Jack J. Woolf, vice president, J.A. Jones Construction Co. Jones is building hotels in every range, from 300-room limited service hotels to 800-room destination resorts and convention center hotels. "The special REITs and pent-up demand, plus consolidation in the hotel market is driving the success," says Woolf.

Swinerton Inc. was the fastest growing

**GENERAL BUILDING MARKET CONTINUES DOMESTIC SURGE**

firm on ENR's list of Top 50 general builders. Swinerton grew its revenue by 56% in 1997. Sixteen other Top 50 firms had revenue growth greater than 20%.

Structure Tone was part of this fast-paced group, reporting a 32% increase in revenues last year. The firm specializes in interior work and says its growth is being driven by the boom on Wall Street that has financial firms expanding their operations.

Swinerton is enjoying tremendous growth because the firm responded to the last economic downturn by diversifying into new geographic areas, says Gordon W. Marks, Swinerton's executive vice president. During the mid-80s building boom, Swinerton had most of its work in San Francisco and Los Angeles, particularly in high-rise office space and hotels. "When the economic downturn hit California, we had all of our eggs in that basket and we suffered." Now, "we have a presence in almost every major metropolitan area in the West," says Marks. Swinerton also has diversified its operations, with commercial, industrial, con-

struction management and even a civil engineering group.

Rising markets to keep an eye on during the next several years are medical facilities, assisted living and high-rise hotels in urban areas, says Jeff Hoopes, senior vice president of Swinerton.

"Hotels are very big right now," says Hoopes. The company is building about 25 hotels, mostly in the \$6-million to \$12-million, 150-room range, and mostly in suburban areas near office buildings. Over the next 18 months, hotel work will shift to the cities and become more high-rise, he says.

In the Pacific Northwest, the sizzling semiconductor market that left Portland-area contractors nearly breathless in 1996, has slowed to a crawl. However, a couple hours up Interstate-5, Seattle "is hotter than a stolen pistol," says Hoffman Construction Co. Vice President Barton Eherwein.

Hoffman dominates the Portland market, but traditionally has done little work in Seattle and as a result suffered a setback in revenue in 1997. During the same period, local market rival Baugh Enterprises rode the Seattle boom to a 42% increase in revenues the second-fastest growth rate among the Top 50 builders.

"There is not a general contractor in town who is not busy. The volumes of every company are going to go up," says Baugh Vice President John Havduk. Ironically, the only downside to the heated Northwest market is that cities are finding infrastructure stressed and have begun to tighten the permitting process. A slowdown in permitting may create a bottleneck that could dampen the market, some builders fear.

But despite the boom, contractors can not afford to get too picky. "Clients are demanding increased preconstruction services of general contractors. That is an area of our business we have had to turn up a notch," says Havduk. "We are now bringing electrical and mechanical service people to the table with us for the first time," he says. Five years ago, you didn't have those people at a general contracting firm. They are now required to meet clients' demands."

In addition, significant changes in market procurement are "forcing contractors to take on more risk," says Eherwein. "Owners who typically have worked with contractors on a cost-plus basis now are asking for guaranteed prices," he says. "That is a significant shift of risk and responsibility, and it makes a big difference."

By Tim Grogan with Stephen H. Daniels,

Paul B. Rosta and Gury Tulacz

27

May 30, 1991

Cincinnati Enquirer

Page B9

"Fernald neighbors seek more money"

By: Lisa Cornwell

# Fernald neighbors seek more money

## Funds may cover emotional distress

BY LISA CORNWELL

The Associated Press

An additional \$10.5 million may be available to neighbors of a former uranium processing plant northwest of Cincinnati who suffered emotional distress from fear of radioactive pollution.

The money is part of a \$78 million settlement of a class-action lawsuit residents filed in 1985 against the U.S. Energy Department.

Under that deal, people who lived within 5 miles of the Fernald plant — more than 18,000 residents — received compensation for lost property values, emotional distress and medical monitoring.

A hearing is scheduled June 10 before U.S. District Judge Arthur Spiegel on residents' request that \$10.5 million unspent from the settlement fund be used for additional benefits.

"The emotional distress payments were capped originally because the settlement trustees wanted to be sure enough money was available for other settlement costs," Louise Roselle, attorney for the residents, said Friday. "Since those costs weren't as high as expected and class members weren't fully compensated for emotional distress, we think remaining money should be used for that."

Ms. Roselle said the request was made after discussions with settlement trustees. Messages seeking comment were left at the trustees' office on Friday.

Gary Stegner, a spokesman for the Energy Department, said the department was reviewing the residents' proposal to the court.

The plant 18 miles northwest of Cincinnati processed uranium metal for nuclear weapons from 1951 to 1989.

Radioactive wastes at the site now are being cleaned up.

The lawsuit claimed that the plant caused radioactive pollution and potential health hazards.

People who lived near the plant while it was operating have an increased risk of developing cancer, according to a 1996 government report.

More than 18,000 people have received some kind of benefits from the 1989 settlement, whether for emotional distress, medical monitor-

ing, real estate payments or a combination.

The payments for emotional distress were capped at \$18 million and ranged from \$550 to \$16,000 per person.

About 9,000 people could receive additional payments under the proposal, Ms. Roselle said.

Fernald neighbor Kenneth Crawford has applied with the court for an additional payment.

Mr. Crawford said he believes the cap was unfair.

"It has been clearly documented we differ from the other 18,000 class members because we were secretly allowed to drink from a well known

for five years to be contaminated with uranium 190 times normal background levels," he wrote on behalf of his family.

May 30, 1998  
Journal-News  
Page A3  
"Fernald neighbors seek more money"  
By: Lisa Cornwell

# Fernald neighbors seek more money

## Emotional distress, fear of radioactivity may lead to an additional \$10.5 million

By Lisa Cornwell  
The Associated Press

CINCINNATI

An additional \$10.5 million may be available to neighbors of the former Fernald uranium processing plant who suffered emotional distress from fear of radioactive pollution.

The money is part of a \$78 million settlement of a class-action lawsuit residents filed in 1985 against the U.S. Department of Energy.

Under that deal, people who lived within five miles of the Fernald plant — more than 18,000 residents — received compensation for lost property values, emotional distress and medical monitoring.

A hearing is scheduled June

seeking comment were left at the trustees' office on Friday.

Gary Stegner, a spokesman for the Department of Energy, said the department was reviewing the residents' proposal to the court.

The plant processed uranium metal for nuclear weapons from 1951 to 1989. Radioactive wastes at the site now are being cleaned up.

The lawsuit claimed that the plant caused radioactive pollution and potential health hazards.

People who lived near the plant while it was operating have an increased risk of developing cancer, according to a 1996 government report.

More than 18,000 people have received some kind of benefits from the 1989 settlement, whether for emotional distress, medical monitoring, real-estate payments or a combination.

The payments for emotional distress were capped at \$18 million and ranged from \$550 to \$16,000 per person. About 9,000 people could receive additional payments under the proposal, Roselle said.

Fernald neighbor Kenneth Crawford has applied with the court for an additional payment. Crawford said he believes the cap was unfair.

"It has been clearly documented we differ from the other 18,000 class members because we were secretly allowed to drink from a well known for five years to be contaminated with uranium 190 times normal background levels," he wrote on behalf of his family.

Crawford's wife, Lisa, is president of the citizens group Fernald Residents for Environmental Safety and Health. A message was left Friday at her home.

May 30, 1998

Cincinnati Post

Page 11A

"Fernald neighbors seek more money"

## Fernald neighbors seek more money

Associated Press

An additional \$10.5 million may be available to neighbors of the former Fernald uranium processing plant who suffered emotional distress from fear of radioactive pollution.

The money is part of a \$78 million settlement of a class-action lawsuit filed in 1985 against the U.S. Energy Department.

Under that deal, people who lived within five miles of the Fernald plant — more than 18,000 residents — received compensation for lost property values, emotional distress and medical monitoring.

A hearing is scheduled June

10 before U.S. District Judge Arthur Spiegel on residents' request that \$10.5 million unspent from the fund be used for additional benefits.

"The emotional distress payments were capped originally because the settlement trustees wanted to be sure enough money was available for other settlement costs," Louise Roselle, attorney for the residents, said Friday. "Since those costs weren't as high as expected and class members weren't fully compensated for emotional distress, we think remaining money should be used for that."

The Energy Department is reviewing the proposal.

May 31, 1998  
Cincinnati Enquirer  
Front Page  
"Fernald waste to ride the rails"  
By: Rachel Melcer

# Fernald waste to ride the rails

## Plan under way to empty pits

BY RACHEL MELCER  
The Cincinnati Enquirer

When Department of Energy (DOE) officials say they will ship 1 million tons of low-level radioactive waste from the former Fernald uranium processing plant site beginning in March, it's hard to understand just what that means.

*'It's not going to go boom... But it is harmful to the environment where it sits right now... We can't just let it stay there.'*

Think of 166,666 full-grown, 6-ton African elephants. Or picture 5,659 empty Boeing 747 aircraft, which weigh 353,398 pounds apiece.

Or, in this case, imagine a locomotive pulling 45 rail cars filled with the toxic stuff, leaving the Fernald site in northwestern Hamilton County once every two weeks for nearly six years.

Because that's exactly what is going to happen.

With the recent dismissal of a lawsuit that had threatened to jam up the works, the DOE and site manager Fluor Daniel Fernald say they are ready to proceed with plans to empty seven underground waste pits. In July, construction begins on a massive, on-site dryer plant where the waste material will be pre-

(Please see FERNALD, Page A7)

May 31, 1998  
Cincinnati Enquirer  
Front Page  
"Fernald waste to rattle the rails"  
By: Rachel Melker

# Fernald: Waste to travel

CONTINUED FROM PAGE A1

pared for shipping. Covering about 40 acres and measuring an average of 40 feet deep, the pits are filled with uranium- and thorium-contaminated wastes that stacked up over the 38 years that Fernald was in operation. According to Dave Lojek, DOE's Operable Unit 1 (waste pit) team leader, there are sludge byproducts, wooden pallettes, concrete chunks and other building debris.

"We have a pretty good idea of what's in there, but not 100 percent," said Dennis Carr, vice president of soil and water projects for Fluor Daniel Fernald. "We expect the unexpected."

The first pit was constructed when the plant opened in 1953. As it filled up, another was built, and so on. The oldest four pits have one-foot clay bottoms; the newer ones also contain an impervious rubber membrane.

## Worry about liners

Officials worry that the liners of the oldest pits have cracked over the years.

"There is concern that these waste pits are 40 years old and the integrity of these liners is unknown," Mr. Lojek said. "We believe there is some leakage into the (Great Miami) aquifer already, but it's contained on-site."

Plastic liners on top of the pits prevent rain water from

flowing through them, and any runoff that does occur naturally heads further onto the Fernald site. And the uranium and thorium material inside is in a chemical form that is not easily transported by water.

Still, it's one reason that DOE personnel and community members are eager to have the waste removed posthaste.

"We don't particularly like shipping our stuff somewhere else, but it can't stay here. It just can't," said Lisa Crawford, president of Fernald Residents for Environmental Health and Safety (FRESH).

Although FRESH initially wanted all radioactive material shipped away from Fernald, Ms. Crawford said her group has accepted the DOE's "balanced approach": Large amounts of very low-level waste will be stored indefinitely in new on-site underground cells, so long as the more radioactive waste is removed.

"It doesn't make much sense to ship slightly contaminated waste because then you risk the (increased) possibility of a transportation accident," explained DOE environmental engineer David Rast.

DOE officials and community members have set a standard that anything with a uranium content of more than 1,030 parts per million must be moved off site. According to Mr. Rast, that is the equivalent of two teaspoonsful of liquid in an Olympic-size swimming pool.

"It's not going to go boom. If you get a drop of it on you, it's not going to kill you. It's not dangerous in that sense," Mr. Rast said of the waste pit material. "But it is harmful to the environment where it sits right now because of its proximity to the aquifer. We can't just let it stay there."

Mr. Lojek said there are also administrative concerns. Earthen berms that support one of the pits are beginning to erode and would be costly to repair. And before the site can be put to another use, the aquifer must be decontaminated — so it doesn't make much sense to allow the contamination to spread, he said.

## Deadline to begin

The waste must begin leaving Fernald no later than March 1, according to performance deadlines imposed on DOE by the U.S. Environmental Protection Agency after cost overruns and inefficiencies were reported in the *Enquirer* in 1996.

But before that can happen, officials must award a \$100 million-plus contract to a commercial dump site — most likely Clive, Utah-based Envirocare, which receives more than 95 percent of the government's low-level nuclear waste — and negotiate a \$100 million transportation deal with the CSX and Union Pacific railroads.

Over the summer, International Technologies Corp.,

based in Pittsburgh, will build a dryer plant at Fernald to remove the moisture from the waste, reducing its overall weight and making it easier to transport. The company, which will also excavate the pits and crush large chunks of material, was awarded a \$122 million contract in October.

Although the contracts are awarded on a competitive basis, Pasadena, Texas-based Waste Control Specialists (WCS) said the dumping business is loaded in favor of Envirocare, virtually the only commercial site in the nation that holds the proper permits to receive DOE waste.

WCS, which wanted to bid on the contract, challenged the DOE in court.

"While they profess to have an open bidding system, the system is set up to ensure a monopoly," WCS attorney John Kyte said.

Federal court Judge Joe Kendall imposed an injunction on the DOE, preventing it from awarding the Fernald contract.

But the U.S. Court of Appeals for the 5th Circuit dismissed the suit and ordered the injunction lifted.

## Slow alternative

Fluor Daniel Fernald and DOE officials say they are glad the lawsuit is near an end. They had worried that it could lead to time and cost overruns.

If they had not turned to a commercial dump, Energy officials say they would have been

## Fernald cleanup

As part of the cleanup of the former Fernald uranium processing plant, the Energy Department must dispose of about 1 million tons of low-level radioactive materials. Here are some facts about the job:



Under federally imposed deadlines, the material must begin moving off-site on March 1, 1998. If everything runs according to schedule, the shipments will be completed in 2005.

From March 1, 1999, to Sept. 30, 1999, about 100,000 tons of material will be excavated. After drying reduces it to about 80,000 tons, it will be loaded and moved.

In each following fiscal year (Oct. 1 to Sept. 30), an additional 112,000 tons of dried material will go.

Every two weeks for about six years, a train with some 45 rail cars filled with the materials will leave the Fernald site.

The total cost of the project — including oversight by Fluor Daniel Fernald, along with processing, shipping and dumping — is estimated at more than \$400 million.

Source: Department of Energy

The Cincinnati Enquirer

forced to use the government-owned Nevada Test Site — which can handle only 25 percent of the annual waste load. So the project, which is slated for completion in 2005, would have taken four times as long and become much more expensive, Mr. Lojek said.

June 1, 1998  
Journal-News

A10  
"Plans to ship radioactive waste move forward at Fernald"

By: Associated Press

# Plans to ship radioactive waste move forward at Fernald

The Associated Press  
CINCINNATI

STATE

Plans to prepare and ship a million tons of radioactive waste stored at the Fernald plant are moving ahead now that a lawsuit is out of the way.

In the next two months, a contractor is expected to start building a dryer plant to remove water

from the waste so it can be shipped more easily to a site for permanent storage.

The 5th U.S. Circuit Court of Appeals recently dismissed a lawsuit by a waste control company that challenged the government's bid process and threatened to hold up the cleanup.

The biggest question now is what surprises await crews when

they empty seven underground waste pits. There are no records for what has been stored in the pits over the last 38 years.

"We have a pretty good idea of what's in there, but not 100 percent," said Dennis Carr, a vice president for Flour

Daniel Fernald. "We expect the unexpected."

Flour Daniel Fernald is managing the cleanup under a contract with the federal government. The plant, 18 miles northwest of Cincinnati, used to process uranium for nuclear weapons.

The storage pits cover about 40 acres and are an average of about 40 feet deep. They con-

tain waste contaminated with uranium and thorium.

The oldest four pits have clay bottoms that are 1 foot thick. The newer ones also have rubber containment seals.

The fear is that the liners on some pits have cracked, allowing waste to get into the Great Miami Aquifer below the plant.

"There is concern that these

waste pits are 40 years old and the integrity of these liners is unknown," said Dave Lojek, a U.S. Department of Energy official. "We believe there is some leakage into the aquifer already, but it's contained on-site."

The Energy Department, which owns the plant, and neighbors are eager to get the waste moved to a more secure storage site.