PADUCAH GASEOUS DIFFUSION PLANT
SITE SPECIFIC ADVISORY BOARD

padssab@apex.net *www.oro.doe.gov/pgdpssab*

2000 McCracken Boulevard • Paducah, Kentucky 42001 • (270) 744-9010

Chair

Craig Rhodes

Board Members

Kit Atkinson
Nola Courtney
Mark Donham
Edward Duff
Angela Farmer
David Fuller
Judy Ingram
Vicki Jones
Merryman Kemp
Ronald Lamb
Linda Long
Douglas Raper
Craig Rhodes
Rosa Scott
Jim Smart, Ph.D.
Pat Stephenson
Bill Tanner
Rev. Gregory Waldrop

***Ex Officio* Members**

Carl Froede, Jr.
Environmental Protection Agency

Wayne L. Davis
Fish and Wildlife Resources
(Kentucky)

Tuss Taylor
Division of Waste Management
(Kentucky)

John A. Volpe, Ph.D.
Radiation Control Branch
(Kentucky)

Dale Jackson
Department of Energy

DOE Federal Coordinator
John D. Sheppard

Additional information about contacting board members directly can be obtained from the SSAB web site or by contacting Shirley Speer at (270) 744-9010.

Agenda for the January 20, 2000, meeting:

- Call to order
- Minutes from November 18 meeting
- Public Comments and Questions
- Update on DOE ES&H issues
- Information Handouts
- Program Status Updates
  EM&EF Projects
  Depleted UF_6
  Scrap Metal/Drum Mountain
- Sitewide Cumulative Effects
- Programmatic Presentations
  Five-Year Groundwater Operable Unit Review
  Lasagna
  Land Use Control Assurance Plan
  ITRD
  WAG 6—Gregory Waldrop
- SSAB Subcommittee Reports
  Community Relations—Judy Ingram
  Consultant—Bill Tanner
  Membership—Nola Courtney
- SSAB Recommendations Status
- Administrative Issues for the Board
  Review of the SSAB Draft Workplan
  Financial Update

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DRAFT Meeting Minutes
Paducah Site Specific Advisory Board
January 20, 2000

The January 20, 2000, Paducah Site Specific Advisory Board (SSAB) Meeting took place at the Paducah Information Age Park Resource Center in Paducah at 5:30 p.m.

Board members present included Mark Donham, Vicki Jones, Merryman Kemp, Ronnie Lamb, Linda Long, Doug Raper, Craig Rhodes, Jim Smart, and Greg Waldrop. *Ex officio* members present were Dale Jackson and Tuss Taylor. The facilitator present was Steve Kay. The United States Department of Energy (DOE) federal coordinator present was John D. Sheppard. Mike Guffey of the Kentucky Division of Waste Management (KDWM) was present. DOE employees, contractors, subcontractors, and public individuals included Gaye Brewer, J. Raul Castaneda, B.J. Clayton, K.R. Davis, Dan Feehan, Bruce Gardner, Kristi Hanson, Norm Jetta, Fraser Johnstone, Al Puckett, Myrna Redfield, G.L. Shaia, Shirley Speer, M'Balia Tagoe, John Tilson, and Pamela K. Tumler. Others present did not sign in.

Call to Order

Rhodes called the meeting to order at 6:00 p.m. and explained that decisions could not be made due to the lack of a quorum.

Minutes

The minutes from the November 18, 1999, meeting could not be amended or approved and will be held until the February meeting.

Public Comments and Questions

Al Puckett asked why truckloads of rock have been going into the plant. Gordon Dover of Bechtel Jacobs Company LLC (BJC) said that they had been hauling in rock to build roads in support of the Department of Justice (DOJ) investigation.

Daniel Feehan, General Accounting Office, introduced himself and his team, who were in Paducah to meet with DOE and BJC. They also scheduled time to meet with SSAB representatives to gain the Board's perspective. He said that the team's reports will be available on the World Wide Web at www.ga.gov.

Lamb asked about waste from Hanford possibly being stored at the Paducah site. Jackson said that because the Hanford site is being closed down, the material will be sent elsewhere. Portsmouth is the preferred destination, but it is possible that the material will be stored in Paducah.

Update on DOE ES&H Issues

Jackson reported that the Phase 1 report is out and that the Phase 2 report is in the final stages. He said that the big picture looks good and that significant step increases in funding are likely. He added that it would be a challenge to have not only plans but also accomplishments during the next eighteen months. Donham asked if there is a final corrective action plan. Jackson said that he would make the plan available to the board.

Information Handouts

Donham asked several questions about the Waste Treatment Storage and Disposal section of the December 1999 Update. He asked if the communities along the route that the trucks travel with the waste have been notified about what is being sent through their communities, and if the destination community also had been notified of what was coming. Sheppard said that all shipments are done in accordance with regulatory requirements. Donham also wanted to see sampling data and to obtain other information about the shipments. Dover said that this is a huge amount of data. Donham said that he would go wherever he needed to go to view the documents. Sheppard said that it would work better to have the information available at the next board meeting. Donham said that he was looking for information on the wastes so that he can notify other communities and get public consent. He also questioned if there had been an opportunity for public comment before the waste was shipped out and suggested that there be a public comment period on each waste shipment. Jackson said that there would be a presentation at the next SSAB meeting on waste shipments and how regulatory compliance is ensured. Waldrop said that in the present environment it was important for DOE to put everything on the

table. Donham said he did not think it was ethical to send this waste to other communities and that the public was being cut out of the decision-making process. Jackson said DOE is doing a lot to solicit public comment.

Donham also had questions about where the waste that was shipped to Texas was going. He was told that the waste shipment was sent to a waste control facility on the Mexican border. He also had questions about the compressor sump pit in WAG 27. Chris Marshall of BJC responded that a report would be available to the board. Donham also suggested that the board and the public be notified when there are disputes among the regulatory agencies, such as on WAG 23. Jackson said that DOE could provide the board that information.

Depleted UF_6

Jackson said that this is still in the decision-making stage. Taylor said that the Oak Ridger had an article about this on January 18, 2000. Donham said that the cost of the DUF6 conversion would be huge. Jackson agreed and said that it is a difficult question without a clear answer.

Scrap Metal/Drum Mountain

Greg Shaia of BJC passed out handouts. He said the public review period had been extended to February 1, 2000. After the comments were resolved, a contract for removing Drum Mountain will be awarded. The schedule for the award is March 2000. Smart asked if the plan was to remove Drum Mountain in three months. Shaia said yes. He said there would be more characterization of the drums done by the subcontractor who was awarded the contract. Donham asked if the cost difference between moving the drums and building a permanent disposal facility in Paducah had been considered. He asked if DOE's long-term goal is to ship everything out, or is it considering other alternatives. Jackson said that it is getting more difficult to ship out of state. Myrna Redfield of DOE said that other sites were being asked what their storage/disposal plans are and said the board could receive a copy of the results of this survey, possibly as early as February. Sheppard suggested a board subcommittee be named to help make recommendations on that subject. Kemp said she liked the idea of focusing on long-range goals. Rhodes asked if the state had any ideas on the disposal issue, and Taylor responded that Kentucky prefers offsite disposal at this point. Redfield said that there was a meeting on the subject in Lexington in February and suggested the Board look at this again after that meeting.

Al Puckett asked if there would be air monitoring performed during the removal of Drum Mountain. Shaia said yes. Jones asked about displaced wildlife. Taylor said he did not recall seeing wildlife addressed in the EE/CA. Shaia said that it was considered as part of the NEPA Values consideration. Donham said that NEPA requires Cumulative Effects Analysis. Waldrop asked if the wildlife issue could be addressed. Jackson said that DOE would mail the board information on this promptly.

Five-Year Groundwater Operable Unit Review

Bryan Clayton introduced Ken Davis and Deborah Jolly and said that they were here to answer questions. Greg Cook explained that a handout was included in the December mailing. The cost effectiveness of the Northwest Plume and Northeast Plume Pump and Treat facilities was discussed. Davis said that they were intended as interim measures and that they were cutting down on high-concentration zones of TCE. Jackson said that DOE is looking for alternatives. Taylor said that the Pump and Treat facilities mean there is something in place until we have something better. Donham asked what the schedule was for getting something done. Clayton said that the Record of Decision is scheduled for the end of 2001.

Donham asked if the Board could get reports from the bench scale tests that Jolly said were starting next week. Jolly said that the Board could get updates, then results. Donham also asked for the cost-to-date of the facilities..

Donham asked if there had been comments on the UK report. The advantages and disadvantages of the barrier wall were discussed as a potential for handling several problems. Clayton explained that it is not a barrier wall; that water will penetrate it and contaminants will be left behind. He also stated that regulators have to approve all of this. Donham asked if the public would be provided something for public comment. Long asked if they had considered asking the neighbors about the springs.

Lasagna

Fraser Johnstone discussed how Lasagna is remediating an area where the soil has been contaminated by TCE. The facility began operations in late December and will run for about two years. Donham asked for the cost of developing and deploying Lasagna.

ITRD

John Sheppard asked if the board had suggestions regarding the ITRD.DOE is evaluating the value of ITRD for soils and would welcome the Board's input.

Waste Area Group 6

Waldrop asked to refer back to WAG 27. He asked why the state had signed off on backfilling the compressor sump pit. Chris Marshall said that 700 gallons of wastewater had accumulated and pipes had become clogged. They removed Resource Conservation Recovery Act (RCRA) hazardous materials and unclogged the pipes. Taylor said that this is not a closed issue and that when the 720 Building is no longer in use they will go back in. After discussion, Jackson said that he would find out about why the sump is to be filled with concrete.

Land Use Control Assurance Plan

Redfield said that DOE would like to move forward and obtain the Board's recommendation.

Community Relations

No comment.

Consultant

No comment.

Membership

Angela Farmer is resigning from the Board for personal reasons.

Financial Update

Provided in handouts, no comments.

Chairs Meeting

John Sheppard suggested that someone attend the February Chairs Meeting, February 17-20, 2000, in Idaho Falls, Idaho. He also noted that the next chairs meeting will be in September, in Texas (at Pantex).

Adjournment

The next meeting will be February 17, 2000, at the Information Age Park Resource Center at 5:30 p.m.

January 20, 2000
SSAB Attendees

[illegible]
B.J. CLAYTON
[illegible]
J. RAUL CASTAÑEDA
K.R. Davis
Ronald Lamb
Mark Donham
Doug Raper
Norm Jetta Vortec Corp
Jim Smart
JOHN SHEPPARD DOE
Vicki Jones
Linda Long
Mike Guttey KY-DWM
FRASER JOHNSTONE SAIC
JOHN TILSON
PAMELA K. TUMLER - GAO/DENVER
Kristi Hanson
Dan Feehan - GAO/Denver
J. DAK JACKSON - DOE Ex-Officio
G. L. Shaia - BJC - EHS
Myrna Espinosa Redfield - Dept. of Energy
M'balia Tagoe BJC
Shirley Spear
Brna Dartner

Status: Waste Area Groups 3, 8, 28 and Data Gaps

- Remedial Investigation field work for WAG 28 Remedial Investigation, WAG 8 Site Evaluation and Data Gaps have been completed. Field work on WAG 3 continues and is expected to be complete by the end of January 2000.
- **Upcoming regulatory documents will be: the Draft (D1) Remedial Investigation Report for WAG 28, scheduled to be issued to regulatory agencies on Jan. 26, 2000; the D1 Site Evaluation Report for WAG 8, June 2000; and D1 Remedial Investigation Report for WAG 3, August 2000.**

January 2000

Status: Northwest/Northeast Plume Groundwater Systems

- **8.2 million gallons of groundwater were treated at the Northwest System during December, with the facility operational 96.7 percent of the time. This brings the total treated to 439.64 million gallons.**
- **5.5 million gallons of groundwater were treated at the Northeast System during December, with the facility operational 85.6 percent of the time. This brings the total to 229.6 million gallons of water treated since the facility opened.**

January 2000

Status: Lasagna™ Soil Remediation at SWMU

- Bechtel Jacobs Company awarded a subcontract February 12, 1999, to CDM Federal for the design, construction, and operation of the Lasagna™ treatment system at SWMU 91. D1 Remedial Design Report, Remedial Action Work Plan, and Construction/Quality Control Plan were issued to regulators on May 18, 1999. The state and EPA have approved these documents.
- The system is expected to operate for approximately 2 years in order to achieve targeted clean-up levels. A third year of operation is possible if target levels are not achieved in two years.
- Construction of the treatment system began the first of August and was completed in November.
- **Operations began December 29.**

January 2000

Status: Groundwater Operable Unit/WAG 6

- The D2 WAG 6 Remedial Investigation Report was submitted to the U. S. Environmental Protection Agency Region 4, state of Kentucky and stakeholders on May 7, 1999. Comments from the state of Kentucky were received on the D2 WAG 6 Remedial Investigation Report on August 13, 1999. A comment response summary for the comments received was submitted on September 30, 1999.
- Comments from the state of Kentucky were received from their review of the Feasibility Study Workplan for the Groundwater Operable Unit at the Paducah Gaseous Diffusion Plant. Comments were resolved and incorporated into a D2 version of the document and resubmitted on October 13, 1999. Comments on the D2 scoping document were received on Nov. 12, 1999 from the Cabinet for Health Services. The comments contained recommendations for data evaluation for use in the Groundwater Operable Unit Feasibility Study.
- A Deployment Assistance Team was assigned to Paducah by the Department of Energy Headquarters Office to evaluate the Groundwater Operable Unit. The team submitted a draft report to the Department of Energy in early December 1999.
- **The D0 draft of the Paducah Deep Reactive Zone for Groundwater Treatability Study was completed Jan. 20, 2000. The treatability study will install a 100-foot long test section of a deep reactive zone to determine its effectiveness at removing migrating contaminants from Regional Gravel Aquifer water.**
- **Development of the D0 feasibility study for the Groundwater Operable Unit is continuing. The D1 version of the document is scheduled for June 2000.**
- **Comments have been received from the state on the D1 Groundwater Operable Unit Five-Year Review (Type 1A). Comments from USEPA are pending.**
- **A kick-off meeting was held Dec. 17, 1999 for the permeable treatment zone treatability study. Representatives from DOE, Bechtel Jacobs Company LLC and SAIC attended. The treatability study is expected to begin this summer.**

Status: Waste Area Group 27

- Issued D1 WAG 27 Remedial Investigation Report December 23, 1998.
- EPA comments were received March 31, 1999.
- State comments were received on April 5, 1999.
- The D2 Remedial Investigation Report was issued to regulators June 3. The state approved the report on September 27, 1999 after changes were made to the original document. Remedial Investigation data have been incorporated into the Groundwater Operable Unit.
- On September 29, 1999, USEC personnel completed the removal of all sediments and liquids from the abandoned C-720 maintenance facility compressor pit sump. More than 700 gallons of liquid and five drums of sediments were placed in storage pending characterization. After characterization and review, the empty sump will be filled with concrete.
- On October 29, samples of the final rinseate were sent for laboratory analysis to confirm contamination is below TCLP (Toxicity Characteristic Leaching Procedure) standards for volatiles, semi-volatiles and metals.
- Lab results reported back December 1 showed the rinseate was below TCLP levels. A letter was sent to the state on December 10 requesting concurrence with this interpretation. The sump will be filled after the Kentucky Division of Waste Management grants approval.
- **The state on Jan. 4, 2000 granted approval to backfill the sump.**

January 2000

Status: Surface Water Operable Unit

- Issued the D1 Scoping Document March 29, 1999.
- Data Quality Objective meetings were conducted April 14-15, 1999, with regulators and representatives of the Kentucky Fish and Wildlife Resources Department, and U.S. Fish and Wildlife Services.
- The Risk Assessment for the SWOU is scheduled to include baseline risk assessments for human health and the environment.
- The D0 Remedial Investigation Work Plan was sent to SWOU team members for comment on July 16, 1999.
- The D1 plan was transmitted to regulators September 29, 1999. Responses from regulators are due by January 3, 2000.
- **Limited characterization of the old North-South Diversion Ditch near the landfills began Jan. 7, 2000. The characterization is at the request of the U.S. Department of Justice. Two trenches were dug before the DOJ put a hold on the project.**
- **The state has approved minor modifications for the C-746-S and C-746-T landfills. The modifications were needed to allow the North-South Diversion Ditch characterization project to begin.**

January 2000

Status: Waste Treatment, Storage and Disposal

- In July, a Request for Proposals was issued by Bechtel Jacobs Company LLC to for a multi-year Waste Operations subcontract. The contract includes waste storage operations, waste characterization, compliance, data tracking and related tasks.
- The Kentucky Division of Waste Management conducted its annual inspection of the C-404 Hazardous Waste Landfill on July 21. The three representatives did not note any findings, but commented the landfill activities were performed well and within compliance of the permit and procedures. A final report will be submitted to DOE within the next few months.
- The contract for waste treatment operations was conditionally awarded in September to Weskem LLC. Weskem is expected to be mobilized for work in March.
- On October 29, a test demonstration of the photocatalytic chemical reactor system for waste water treatment was conducted in Paducah. The system destroys organic contaminants and may potentially remove some Tc-99 by adsorption. Test results will be evaluated for future use.
- A D1 Engineering Evaluation/Cost Analysis for the removal of Drum Mountain in the year 2000 was delivered to regulators November 9, 1999.
- **Public comment on the Drum Mountain EE/CA began December 21 and continues through Feb. 1, 2000.**
- **The Vortec Vitrification Demonstration Environmental Assessment is under review and a decision is expected soon.**
- **Sixty-seven drums of waste were shipped to the Idaho National Engineering and Environmental Laboratory in early January.**
- **A new secondary containment dike for fissionable materials has been constructed in the C-746-Q building. The secondary containment will hold two batches of liquid/sludge fissionable waste in accordance with standards for storage of fissionable materials.**

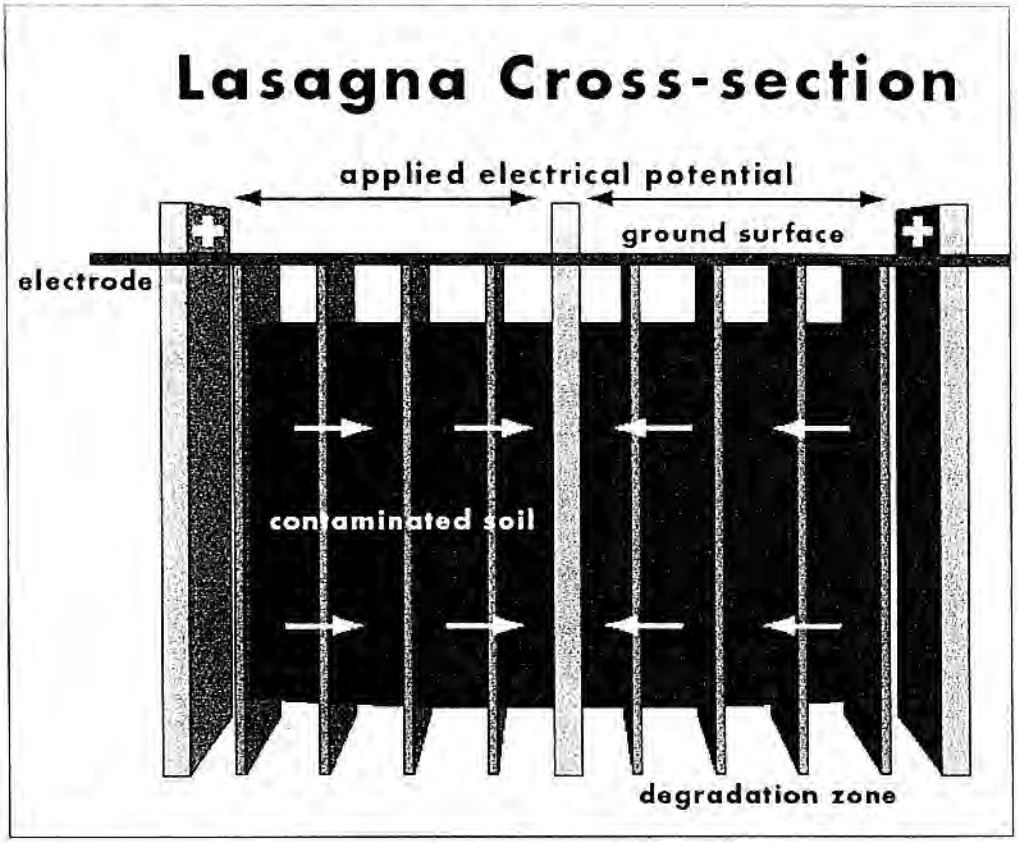
Lasagna™ Process Fact Sheet

Prepared for PGDP
Citizens Advisory Board
January 20, 2000

BACKGROUND — In the 1970's at the Paducah Gaseous Diffusion Plant, tests were conducted to determine if cylinders such as those used to contain depleted uranium could crack under extreme temperatures. The degreaser trichloroethylene was used in these experiments. Although most was reclaimed, some TCE migrated into the ground.

This site (designated as Solid Waste Management Unit [SWMU] 91) is the location of the first full-scale remediation using the Lasagna™ soil remediation technology. In demonstrations of this technology, TCE reduced concentrations of 100-500 ppm to less than 2 ppm.

Lasagna™ was developed in partnership with DOE by a consortium including Monsanto, DuPont and General Electric.



The process works by using buried electrodes to move water through the soil. Applied current drives the water an inch a day from a positive to a negative electrode. Along the way, the water picks up contaminants from the soil. The contaminated water passes through buried treatment zones which trap or degrade the contaminants.

KEY FACTS

- Lasagna is named for its layered treatment zones.
- The facility began operation on Dec. 30, 1999.
- The facility is scheduled to run for two years, with the option for a third year if needed to achieve cleanup goals (an average value of 5.6 milligrams/kilogram).
- CDM Federal Programs built and operates facility.
- Construction and the first two years of operations will cost about $2 million.
- Construction began in August 1999.
- Technology developed for use at Paducah plant.

DRAFT

Paducah Site-Specific Advisory Board
FY 2000 Costs

Item	Budget	Oct.	Nov.	Dec.	YTD	Remaining
General Support to SSAB						
Office Rental	5,000.00	776.00			776.00	4,224.00
Member Travel	33,000.00				0	33,000.00
Admin. Support	72,331.00	3,438.00	4,988.00	3,330.00	11,756.00	60,575.00
Information & Communication	45,090.00	480.00	480.00	480.00	1,440.00	43,650.00
Support to Subcommittees						
Community Outreach						
Travelling Exhibit	9,000.00				0	9,000.00
Exhibit Revisions	900.00				0	900.00
Media Announcements	3,630.00		484.00		484.00	3,146.00
Newsletter	6,658.00				0	6,658.00
Fact Sheets	1,440.00				0	1,440.00
Mailing List Maintenance	1,824.00	152.00	152.00	152.00	456.00	1,368.00
Web Page Maintenance	1,500.00				0	1,500.00
Policy & Personnel						
Technical Advisor	25,000.00				0	25,000.00
Total	205,373.00	4,846.00	6,104.00	3,962.00	14,912.00	190,461.00

Notes: (1) December costs do not include $3,394.81 for office space and facilitator services that will be reflected in the January costs. These costs were accrued too late to be included in the December cost report.

Citizens Advisory Board

Idaho National Engineering and Environmental Laboratory

Chair:
Charles M. Rice

Vice Chair:
Stanley Hobson

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James Bondurant
Wynona Boyer
Ben F. Collins
Bill Davidson
Jan M. Edelstein
Dieter A. Knecht
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R.D. Maynard
Linda Milam
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Wayne Pierre
Gerald C. Bowman

Jason Staff:
Carol Cole
Amanda Jo Edelmayer
Kathy Grebstad
Kevin Harris
Wendy Green Lowe

00-CAB-001

January 12, 2000

Dear Fellow Chair:

It is with great pleasure that I invite you to attend the February 2000 Site Specific Advisory Board Chairs Meeting on behalf of the Idaho National Engineering and Environmental Laboratory (INEEL) Citizens Advisory Board. As I think you know by now, the meeting itself will be held on Friday and Saturday, February 18 and 19. An optional tour of the INEEL will be held on Thursday, February 17 and we are planning an optional day of wintertime beauty and sport in the Rocky Mountains for Sunday, February 20. All activities are described in more detail in this packet.

The next SSAB Chairs conference call will be held on January 27th. The agenda for that call will include discussion of the agenda for the SSAB Chairs meeting. Martha Crosland and Fred Butterfield already have ideas for topics that might be appropriate, and I am sure you will have suggestions as well. Pending that discussion later this month, we have taken the liberty of making specific plans for one topic suggested at our last meeting in Richland, Washington. Upon hearing that various State governors had convened to develop a joint "statement of principals," Merilyn Reeves challenged the SSAB Chairs to undertake a similar effort. Accordingly, we have expanded the time slot normally allotted for the separate breakout discussions (DOE Coordinators, SSAB Administrators, and the SSAB Chairs) from one hour at the end of the first day to an entire afternoon on the second day of the meeting. While we may be unable to complete such an undertaking in such short order, I did want to make sure time was planned for that process. We can discuss the concept at greater length on the conference call. If you cannot participate in the conference call or you have other concerns regarding the agenda, please feel free to call our facilitator, Wendy Green Lowe, at (208) 522-1662.

Enclosed are registration packets for letting us know to expect you. We will need to know how many people to expect for each of the special activities we are planning, so please encourage those who will be attending to return the materials by February 2, if at all possible. The block of rooms being held at the federal per diem rate will also be released that day, so you will need to book your room reservations by then as well. If you have any questions regarding the logistics for the meeting, don't hesitate to call Amanda Jo Edelmayer or Kathy Grebstad on Wendy's staff. They have all the details worked out and can help ensure your stay is pleasant.

Jason Associates Corporation • 477 Shoup Avenue, Suite 201 • Idaho Falls, Idaho 83402
Phone • (208) 522-1662 Fax • (208) 522-2531
http://www.ida.net/users/cab

U.S. Department of Energy Site Specific Advisory Board Chairs Meeting
February 17-20, 2000
Idaho Falls, Idaho

Logistical Information

Lodging for Meeting Participants: Cavanaugh's on the Falls
475 River Parkway
Idaho Falls, ID 83402
(208) 523-8000
Reservations: (800) 325-4000

A block of rooms is being held under the name of "SSAB Chairs Meeting" for the nights of February 16 through February 20, 2000. A rate of $55 per night (within the allowable federal reimbursement rate) will apply for reservations made by February 2, 2000. Cavanaugh's offers free shuttle bus service for hotel guests to and from the airport (located just minutes away).

Other lodging properties near Cavanaugh's include: AmeriTel Inn (800-600-6001), CottonTree Inn (800-662-6886), Driftwood Inn (800-939-2242) Shilo Inn (800-222-2244), and Stardust Motor Lodge (800-527-0274).

SSAB Chairs Meeting Location: Cavanaugh's on the Falls

Travel: Sky West, a Delta Airlines partner, provides air service into Idaho Falls from Salt Lake City. Horizon Air, an Alaska Airlines partner, provides air service into Idaho Falls from Boise, Idaho. Both Boise and Salt Lake City offer alternatives in addition to Delta and Alaska. Idaho Falls is 210 miles north of Salt Lake City via Interstate 15 and 270 miles west of Boise via Interstates 84 and 15.

SSAB Chairs Meeting Agenda: Not yet determined. It is expected that the meeting will run from 8:30 a.m. until 5:00 p.m. on Friday, February 18 and 8:30 a.m. until 12:00 p.m. on Saturday, February 19. Separate meetings (for the SSAB Chairs, DOE Coordinators, and Administrators) will be held during the afternoon on Saturday.

Optional Activities

The various optional activities planned for the SSAB Chairs Meeting in Idaho Falls, Idaho are described below. Each person planning to attend the SSAB Chairs Meeting should complete the attached registration form and return it with a check made payable to "Jason Associates Corporation" for all associated fees by February 2, 2000. Questions about any of the logistics and optional activities may be directed to Amanda Jo Edelmayer or Kathy Grebstad at (208) 522-1662.

Thursday, February 17, 2000, *Idaho National Engineering and Environmental Laboratory Site Tour*, 7:45 a.m. to 5:00 p.m.
Participants will board the bus outside the hotel. The tour will provide an overall orientation to the Idaho National Engineering and Environmental Laboratory, with stops at the Idaho Nuclear Technology and Engineering Center, Radioactive Waste Management Complex (where Pit 9 is located), Experimental Breeder Reactor – 1 Visitors Center, Argonne National Laboratory - West, and Naval Reactors Facility. Lunch will be served at an on-site cafeteria at a cost of around $6.00 per person.

Cost: None for tour. (Tour participants will pay for their own lunches).

U.S. Department of Energy Site Specific Advisory Board Chairs Meeting
February 17 - 20, 2000
Idaho Falls, Idaho

Special Activities Registration Form

Name: _____

SSAB: _____

Check One: SSAB Chair/Member ____, DOE-Coordinator ____, SSAB Administrator ____,SSAB Facilitator ____,

or other ___ (Specify)_____

Mailing Address: _____

_____

Phone: _____ Fax: _____ E-Mail Address: _____

Emergency contact name: _____ Phone: _____ Relationship: _____

For tour participants only: Social Security Number: _____ Date of Birth: _____

Place of Birth: _____ Country of Citizenship: _____

Check those You Plan to Participate In	Special Activities	Cost	Amount Enclosed
	Idaho National Engineering and Environmental Laboratory Tour Thursday, February 17 7:45 a.m. to 5:00 p.m.	No Charge	
	Mountain River Ranch Sleigh Ride, Dinner, and Meadow Muffin Theater Thursday, February 17 6:00 to 10:00 p.m.	Prime Rib Dinner $40.00	
		Cornish Game Hen Dinner $35.00	
	Working Lunch - Make Your Own Idaho Spuds Bar Friday, February 18 lunchtime	$11.00	
	Optional Fun Day Sunday, February 20 7:00 a.m. to 9:30 p.m.	Jackson Hole Skiing $81.50	
		Sightseeing & Shopping $42.50	
		Total	

Please complete and return this form by February 2, 2000
with a check, payable to "Jason Associates" to cover the cost of planned activities.

Send completed registration forms to:
INEEL CAB
c/o Jason Associates
477 Shoup Avenue, Suite 201
Idaho Falls, ID 83401

Questions? Call Amanda Jo Edelmayer or Kathy Grebstad at (208) 522-1662

DAYS INN of Jackson Hole
3 SUNBURSTS - TOP RATED FOR QUALITY BY DAYS INN OF AMERICA!

JACKSON HOLE

SEARCH SITEMAP EMAIL

Ski & Snowboard:

Activities
Snow Report, Maps & Cam
On-Mountain Services
Shopping & Merchandise
Lodging
Dining
Real Estate
Local Services
News & Events
Transportation
Employment

16 inches of snow

Today will be a phenomenal, powder day on the mountain! We have received 22 inches of snow in the past 2 days. Enjoy the fresh.
For daily weather information, see our collection of Jackson Hole weather links.

Photo of the Day

Dave Villemure finds a sweet line.

Alpine Ski and Snowboard Guides

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JACKSON HOLE

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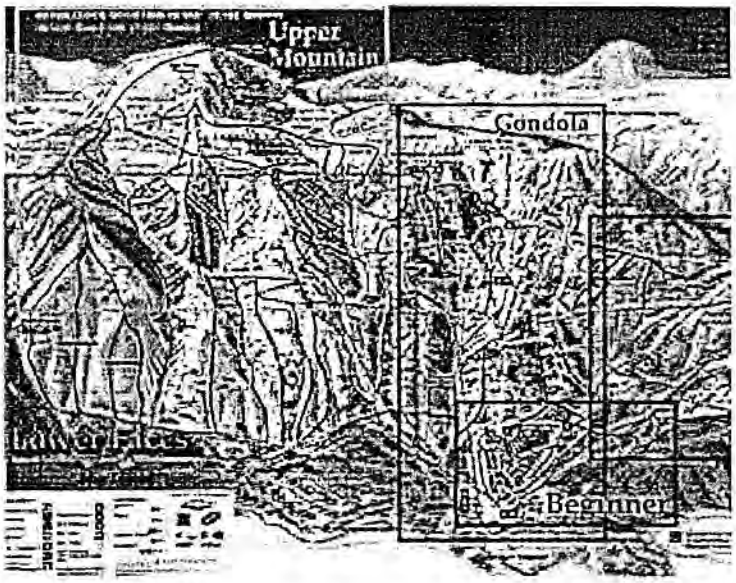

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The National Elk Refuge

In the early 1900s, settlers had moved into Jackson Hole, and the small community of Jackson was beginning to grow. Both settlers and elk were coexisting in the sheltered valley during the winters, but the elk had trouble finding sufficient forage as a result of human activity and cattle.

During the winters of 1909–1911, thousands of elk died because they were unable to find enough forage to sustain them through unusually cold and snowy winters. Local citizens, concerned about the fate of the elk and unable to provide sufficient hay for both livestock and elk, requested help from the state and federal governments. Funds were provided for purchase and feeding of hay to the starving elk.

In 1912, the National Elk Refuge was established to protect elk winter range. Additional lands have been acquired since then, and today the refuge protects nearly 25,000 acres of prime winter habitat between the towns of Jackson and Kelly. The refuge is fenced only on the south end and on the west side along Highway 89 to keep elk off roadways and out of town.

The refuge operates a supplemental feeding program for the elk for two or three months most winters. When the snow develops a hard crust or becomes exceptionally deep, or when forage is scarce, daily feeding begins and continues until the snow melts.

Photo © R. H. Ruschill

Photo © Garth Dowling

The National Museum of Wildlife Art is home to the nation's premier collection of fine art devoted to wildlife. Located north of Jackson, the museum overlooks the National Elk Refuge and serves as the departure point for the winter sleigh rides on the refuge. The museum houses 12 galleries featuring both the permanent collection and traveling exhibits, a museum shop and cafe.

Museum Hours: 9:00–5:00 daily. Closed Christmas.
Call (307) 733-5771 for more information.

National Elk Refuge Sleigh Rides
are located 3 miles north of Jackson
on Highway 26/89 at the
National Museum of Wildlife Art.

Hours: 10:00–4:00 daily,
Mid December–early April. Closed Christmas.

Sleigh rides are available on a first-come, first-served basis. No reservations are taken. Visitors must purchase tickets at the museum and take a shuttle bus to the boarding area.

To make arrangements for large groups, call (307) 733-5386

A slide show about the refuge and interpretive displays are located in the museum.

National Elk Refuge, U.S. Fish and Widlife Service
P.O. Box C, Jackson, WY 83001 307-733-9212

Cover photo © R.H. Ruschill

SLEIGH RIDES

ON THE NATIONAL ELK REFUGE

DOE News Release

NEWS MEDIA CONTACT:
John Sheppard, DOE, (270) 441-6804

FOR IMMEDIATE RELEASE
January 20, 1999

DOE extends public comment on Drum Mountain removal project

PADUCAH, KY -- The U.S. Department of Energy (DOE) has extended the public comment period on a draft Engineering Evaluation/Cost Analysis (EE/CA) concerning the disposition of a large pile of crushed drums from the Paducah Gaseous Diffusion Plant (PGDP).

Dale Jackson, interim manager of the Paducah DOE Site Office, extended the public comment period to February 1 in response to a request for additional time. The comment period originally was scheduled to end January 20.

Drum Mountain is a distinctive part of the scrap yards at the PGDP and encompasses about 10 percent of the estimated 65,000 tons of scrap metal stored at the uranium enrichment plant. The drums once contained depleted uranium and were crushed after being emptied. The EE/CA looks at alternatives for handling the drums. The preferred alternative envisions packaging the drums for disposal by October 2000, with final disposal to be accomplished by December 2000.

Should the EE/CA's recommendation be selected, a subcontractor to handle removal of the drums will be selected by March. Work on removing the drums is scheduled to begin about May 2000. Bechtel Jacobs Company LLC, DOE's managing and integrating contractor for environmental projects in Paducah, has begun the process of selecting a subcontractor to dispose of the drums.

Drum Mountain's removal is considered a priority because there is concern that the drums could be a source of surface water contamination and because the drums sit on an old burial ground.

The draft EE/CA is available at the DOE Environmental Information Center in the West Kentucky Technology Park on U.S. 60 in Kevil, and at the Paducah Public Library. It also is available on the World Wide Web at: *http://www. bechteljacobs.com/pad/report.htm*

Public comment should be addressed to Myrna Redfield, U.S. Department of Energy, Paducah Site Office, P.O. Box 1410, Paducah, KY 42001, or fax comments to (270) 441-6801.

-30-

The Courier-Journal
Saturday, January 8, 2000
LOCAL NEWS

Need Insurance?

Investigators dig up landfill near Paducah uranium plant

Results may lead Justice Department to join lawsuit

By JAMES MALONE, The Courier-Journal

PADUCAH, Ky. -- Vowing to dig for the truth, U.S. Attorney Steve Reed donned a hard hat as workers began an extraordinary excavation at an old landfill outside the Paducah Gaseous Diffusion Plant near the city.

The Justice Department has ordered five large trenches to be dug up as part of its investigation into a whistle-blower lawsuit that alleges that past operators of the government-owned uranium-enrichment plant lied about pollution and contamination to get millions of dollars in performance incentives.

The Justice Department's investigation is aimed at determining whether it should join the lawsuit.

In a pattern that will last up to three weeks, scoops of dirt brought up from the trench were scanned for radiation and hazardous chemicals. Technicians for the U.S. Justice Department, the Environmental Protection Agency, the U.S. Energy Department and the Kentucky Natural Resources Cabinet were taking samples for independent testing.

"The reason we are here is to investigate those allegations," Reed said. "This excavation is to determine if the area was contaminated to a level that corroborates the allegations in the complaint and also to determine if it could be detrimental to (the) safety of the people here in this community."

Reed, a former Paducah resident, said the investigation is a priority for his office and it's not being taken lightly.

It has become a monumental undertaking.

Reed said planning, digging the five trenches and testing the samples may cost $1 million. And officials said they decided on where to dig the first trench based on results from airborne ground-penetrating radar that scanned the site and detected a mass underneath.

"We have put the resources into it that we think it warrants, and we think those resources are quite a bit," Reed said.

At least four more trenches will be dug. Test results will guide federal officials on their next course of action, Reed said. "If it turns out the area is contaminated, then we'll take the appropriate, necessary action."

Reed declined to say when or how the probe could become a criminal investigation. He hopes to know by May whether the government would join the

lawsuit.

Yesterday, Reed appealed for anyone with information useful to the investigation to contact the U.S. attorney's office.

Filed under seal in June in U.S. District Court in Paducah by three plant workers and the Natural Resources Defense Council, the whistle-blower suit alleged a broad pattern of neglect and indifference to the safety of workers and the public.

The Energy Department is "fully cooperating" with the Justice Department and was "leading the effort as far as the dig itself," said Dale Jackson, the Energy Department's manager at the Paducah plant.

The trench is about 50 yards from where radioactive black ooze was found bubbling up in some tire tracks in late August. Asked if the Energy Department would have excavated the area without the Justice Department directing them to do so, Jackson said, the agency was "looking at it" and it "would have been one of the things we would have considered."

In an unrelated visit, Richard Meserve, chairman of the Nuclear Regulatory Commission, toured the plant and said at a press conference afterward that no timetable has been set to complete the remaining 25 percent of a costly $50 million project to strengthen the diffusion plant's giant buildings against an earthquake.

A meeting between the commission, which regulates commercial nuclear facilities, the Energy Department, which still controls parts of the Paducah plant, and the U.S. Enrichment Corporation, which leases the nuclear fuel production facilities, is set for Monday in Washington to discuss the project. One hold-up has been deciding how to dispose of piles of piles of Energy Department nuclear scrap and equipment within the production facilities.

Meserve also said under ideal conditions, he hoped the Nuclear Regulatory Commission could decide by the end of the year whether to allow Paducah to enrich uranium to a 5 percent concentration, instead of the 2.75 percent cap now imposed on it. Such a move would permit the Paducah plant to enrich fuel to reactor grade without having it to be further enriched at a sister plant near Portsmouth, Ohio.

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Problems at Paducah

Saturday, January 8, 2000; Page A18

The Dec. 23 front-page article by Joby Warrick about injustices done to workers at the Paducah Gaseous Diffusion Plant included no identification of the guilty contractor until the story jumped inside the paper. The phrase "company memo" was used instead. The continuation of the article was mostly about the behavior of Union Carbide, which was largely responsible for the situation characterized as "ghastly" in the Dec. 31 editorial "Nuclear Horror Tale."

That editorial, however, never identified Union Carbide, although it referred to "superiors" who induced a "whistle-blower" to retire. A reader in a hurry might have assumed the most frequently mentioned possibility--the federal government.

Other bothersome questions about that editorial were:

* Why was equal acceptance accorded the claim of the "recent contractors" that "the harm was done before they took over," which was true, and the self-serving claim of the unnamed "prior" contractor that "the truth is impossible to reconstruct" after Mr. Warrick has been doing such a good job of reconstructing it?

* Why should redress have to come, as implied by the editorial, through legislation or government executive action? Apparently, Union Carbide withheld prudent safety measures and continued to expose its employees to known risks, directly causing grievous harm. So why no hint of redress through the courts?

* The editorial concluded, "Who trusts the government" is "the ultimate problem," yet it also mentions, "It's not clear to what extent senior officials at the Energy Department were aware of problems" and cites a "welcome sense of urgency" on the part of government. Apparently, the available evidence against the government is less damning than that against Union Carbide. Further, the government is undertaking an ethical response, in contrast with Union Carbide's continuing denials.

Surely the ultimate problem is less "Who trusts the government" than "Which large corporations can we trust."

DAVID ROGG

Annandale

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The Paducah Sun

January 7, 2000

DOE plant soil sampling to start today

By Joe Walker
Sun Business Editor

Soil sampling behind the Paducah Gaseous Diffusion Plant will begin today amid a Justice Department investigation into a false-claims lawsuit filed last June by three plant employees alleging the plant covertly contaminated workers and the public.

Also today, Nuclear Regulatory Commission Chairman Richard A. Meserve is scheduled to visit the plant.

U.S. Attorney Steve Reed is expected to speak with reporters about 2:30 p.m. after digging begins in a filled-in portion of what is known as the North-South Diversion Ditch, which flows northward from the plant. For decades, the ditch was a catchall for contaminant runoff from plant operations.

The lawsuit, which seeks Justice Department intervention, alleges the old ditch is highly contaminated with radiation and toxins. Expected to take about two weeks, soil sampling is designed to determine the nature and extent of contamination.

Contractors for the Department of Energy, which owns the plant, will dig and sample at a cost expected to exceed $1 million. As many as five trenches, each up to 30 feet long and 15 feet deep, will be dug perpendicular to the ditch's flow path.

The excavation is near where a tarlike roofing material was found last summer in the area of a closed landfill off Ogden Landing Road. Although hazardous material was not supposed to be in the landfill, the roofing debris was radioactive and believed to have come from the plant.

Reed said 10 soil samples will be taken, and if water is present, as many as two water samples will be taken. Samples will be used to support the investigations and shared with regulatory agencies, he said.

Excavated material will be stored in containers or returned to the ground, depending on results of chemical and radiological screening.

Test results will help the Justice Department determine if it should join the suit against past contractors, who have denied wrongdoing. Reed's office has asked for another six months to complete the investigation.

If the plaintiffs win, they could share in huge damages from the contractors, who allegedly concealed the contamination to collect millions of dollars in performance bonuses.

Government investigators have admitted that about 12 ounces of plutonium and slightly more than 40 pounds of neptunium arrived at the plant in the spent fuel rods.

Tests show that plutonium and neptunium, which are thousands of times more radioactive than uranium, are dispersed in small amounts around the plant's grounds.

A separate class-action lawsuit by past and present workers and their survivors allege that many were unwittingly exposed to radiation, making them high cancer risks.

DOE NEWS

Thursday, January 6, 2000

News Media Advisory

ENERGY AND JUSTICE DEPARTMENTS TO BEGIN PADUCAH DITCH CHARACTERIZATION

The U.S. Departments of Energy and Justice will hold a joint press conference Friday, January 7, 2000, at 2:30 p.m. to announce the beginning of characterization of portions of a filled-in ditch adjacent to landfills at the Paducah Gaseous Diffusion Plant.

"The Department of Energy is cooperating fully in this investigation. Our goal is to perform this important investigative work in a manner that protects both worker and public safety and ensures the protection of the environment," said J. Dale Jackson, Acting Paducah Site Manager for the Department of Energy.

"We have an obligation to investigate the veracity of the allegations contained in the qui tam complaint," said Steven S. Reed, U.S. Attorney for the western district of Kentucky. This excavation is merely a step in this process and we will work with DOE to complete our findings."

Excavation and sampling activities will take about two to three weeks. Up to five trenches will be dug at the excavation location, located along a portion of the old North-South Diversion Ditch.

The press conference will be held at the site of the excavation, located off of Ogden Landing Road west of the Paducah site. In addition to the press conference, the news media will be able obtain still photographs and video of the excavation.

For more information regarding this event, contact Steven Wyatt, DOE Public Affairs, at 270-441-6830.

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The Courier-Journal
Thursday, January 6, 2000 LOCAL NEWS

Need Insurance?

Excavation to start at uranium plant

Suit prompts U.S. to analyze past disposal

By JAMES MALONE, The Courier-Journal

PADUCAH, Ky. -- Excavations prompted by a whistle-blower lawsuit filed last summer will begin tomorrow in two areas near the Paducah Gaseous Diffusion Plant.

Officials at the Justice Department, the Energy Department and several government contractors met yesterday to complete plans for the excavations, which will cost more than $1 million and allow the Justice Department to obtain samples and analyze past disposal practices. Federal officials declined to let a reporter attend the meeting.

U.S. Attorney Steve Reed is tentatively set to hold a news conference tomorrow as the excavations begin.

Justice Department officials sought a state permit last month to dig near the 746-S landfill and said the excavation would open at least two pits in an area north of the plant near Ogden Landing Road. The area is in the path of an old open chemical sewer that removed plant drainage and effluent. The Natural Resources Cabinet approved the permit in late December.

Officials say the digging will start tomorrow and be finished late this month. It will be largely in an area where black radioactive ooze was discovered in August. The government later said the ooze appeared to be a combination of old oil and roofing material bubbling up in a closed sanitary landfill.

The whistle-blower lawsuit alleges that past operators of the uranium-enrichment plant concealed the nature and extent of pollution on and off the site so they could collect millions of dollars in performance bonuses. Past operators, units of Union Carbide and Lockheed Martin, have denied wrongdoing.

The U.S. attorney's office in Louisville has asked for six more months to complete an investigation of the whistle-blower claims before deciding whether to join the lawsuit. If the whistle-blowers prevail, federal law entitles them to share in any money recovered.

Excavation equipment was to begin assembling near the site of the 746-S landfill late yesterday, and plant security guards were alerted to begin patrolling the area. They were instructed to close Ogden Landing Road briefly in the afternoon to allow material samples to be hauled to a laboratory at the plant.

Now used for initial production stages of nuclear reactor fuel, the diffusion plant for much of its history was where production of weapons-grade uranium for bombs started. It also dismantled bombs and other equipment of the Cold War, melted

down some of the precious or rare metals, and buried the remnants.

But a sealed lawsuit (since opened) alleged last summer that plant operators have all but hidden the presence of highly radioactive elements such as plutonium and neptunium that escaped from an ill-fated process to enrich spent nuclear fuel rods and convert them into usable fuel.

Government investigators have admitted that about 12 ounces of plutonium and slightly more than 40 pounds of neptunium arrived at the plant in the spent fuel rods.

Tests have shown that plutonium and neptunium, which are thousands of times more radioactive than uranium, are dispersed in small amounts around the plant's grounds, in its equipment and in abandoned process buildings. Another class-action lawsuit, by current and former workers and their survivors, alleged that many workers were exposed to radiation without being informed of it, putting them at higher risk of cancer.

The Energy Department acknowledged last week that more than three miles of colored plastic rope has been strung to cordon off contaminated areas in the West Kentucky Wildlife Management Area, outside the plant's security fence.

Technicians have been stringing the rope to comply with directives from an Energy Department oversight team that criticized the plant for failing to properly mark areas accessible to the public.

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Paducah plant's woes region's biggest story

The other nine: *Sun staff members picked the 10 biggest stories of the year. The remaining nine can be found on pages 2-6.*

By Joe Walker
Sun Business Editor

The last year of the 20th century brought relentless scrutiny on a uranium enrichment plant that has been the backbone of Paducah area employment for nearly 50 years.

Like never before, the world peeled away the secrecy of the government-owned Paducah Gaseous Diffusion Plant and put it under a microscope to analyze its clouded business future and tainted environmental past.

A June decision by plant operator USEC Inc. to scuttle a promising laser technology after years of research cast serious doubts about the plant's ability to compete in a glutted world market. The process, known as AVLIS, had been studied for years and ballyhooed as the savior of 1,600 jobs at the Paducah plant.

AVLIS required only a fraction of the power of the gaseous diffusion process, which burns as much electricity as a major city and accounts for half the plant's production costs. AVLIS had been a key part of USEC's business strategy and a buzzword of federal lawmakers and civic leaders who campaigned for a laser plant in Paducah. But word began leaking that it was failing tests for commercial deployment.

As rumors swirled of AVLIS' demise, the company finished the last of 250 planned layoffs to cut costs. Coupled with a lackluster financial statement in May, Wall Street gossip drove down USEC's already slumping stock and had analysts wondering about long-term viability.

Two months later, the news went from bad to awful.

The Washington Post revealed a sealed federal lawsuit by three employees and a large nuclear activist group alleging that past plant contractors covertly poisoned workers and the public for decades. The first articles touched off an avalanche of international publicity that set the tone for the rest of the year and undoubtedly for years to come.

Senior U.S. Department of Energy officials came to town and promised in a public hearing to investigate if contamination hurt workers, their families and nearby residents. In an unprecedented move, they said they would take responsibility for past injustices. All along, DOE and regulatory agencies insisted that the plant work force and environment were now safe.

In early September, a $10 billion federal lawsuit was filed seeking to become a class action for as many as 10,000 workers, former workers and families. It alleged plant contractors exposed employees to radiation and toxins and covered it up.

DOE soon ordered Bechtel Jacobs, its lead environmental contractor, to stop work for a day to investigate and correct lax nuclear safety practices. Amid daunting publicity, DOE's longtime site manager retired, and the chief Bechtel Jacobs manager resigned, both saying it was for the best.

Energy Secretary Bill Richardson then visited Paducah, held a public meeting and pledged $20 million in federal aid for families of workers who got sick from exposure to radioactive materials. It was the first time compensation was offered to Paducah plant employees, and Richardson said, "The burden of proof will not be on the worker."

In three congressional hearings, regulators and whistle-blowers sparred about the safety of the plant, and lawmakers tried to sort out the truth. DOE released investigative findings, saying that there was a small chance of an uncontrolled nuclear accident's threatening workers and the public, and that environmental cleanup was too slow. Bodies of a few former workers were exhumed as suing attorneys sought evidence of radiation in the men's bones.

The focus shifted back to the plant's shaky business outlook as USEC unsuccessfully lobbied Congress and the Clinton administration for about $200 million in federal aid. USEC urged taxpayer help because under a nuclear disarmament agreement it was having to buy enough overpriced Russian uranium to equal the Paducah plant's production.

Supported by a USEC lobbyist's memo, federal lawmakers and the plant's largest labor union said USEC was planning to cut 850 more jobs at Paducah and its sister plant near Portsmouth, Ohio, starting in 2000. As the old year clock prepares to chime midnight, workers and their families wonder what the new century holds for them.

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Nuclear Horror Tale

Friday, December 31, 1999; Page A30

FOR FIVE months, staff writer Joby Warrick has been laying out the ghastly story of the workers at the Paducah Gaseous Diffusion Plant in western Kentucky, a government facility that, beginning in the 1950s, helped to produce the highly toxic materials used to create the nuclear arsenal that sustained this country through the Cold War.

It is a horrifying tale, in that these workers whom the politicians now hasten to acclaim as Cold War heroes were -- like their counterparts at other such plants -- systematically misled about the dangers of the work they were being paid to do, and that in some cases seems to have killed them. The plant, at least by today's standards, seems to have been almost casually designed and operated. The workers were not issued proper protective gear. The air was full of radioactive dust. They breathed it. It settled on their food at lunchtime. They took it home; some recount that they would find traces of it on their bed linen when they awoke in the morning.

Few records were kept of the workers' health, and no systematic studies have been done. But there is fragmentary evidence of a high incidence of some cancers and other diseases. The bones of one dead worker were disinterred. He had had a series of horrible ailments, including cancer, and had become what would now be called a whistle-blower. Superiors had induced him to retire in part with a promise of benefits then denied. At one point they went so far as to ascribe his ailments in part to eating too much country ham. His wife had the bones disinterred to vindicate him. "His body contained uranium at levels up to 133 times higher than is normally found in bones," Mr. Warrick reported.

Radioactive waste from the plant can be found in the surrounding community as well. "The situation is as close to a complete lack of health physics as I have observed outside of the former Soviet Union," a senior official in an environmental group has said.

How did it happen? The old Atomic Energy Commission, which ran the plant at the outset, was supposed to be a regulator of nuclear undertakings but too often acted as their cheerleader instead. The jobs

and income the plant provided were coveted in an area that didn't have enough of either. The workers felt, with cause, that they were performing a patriotic duty, and that it would be unmanly to complain. The contractors that were operating the plant for the government sought to prevent what one memo called an "outcry" over radiation, to say nothing of a possible union demand for higher pay as compensation for the hazardous conditions. The recent contractors say the harm was done before they took over; the prior one says the truth is impossible to reconstruct.

It's not clear to what extent senior officials at the Energy Department were aware of the problems at the plant before Mr. Warrick's work began to appear. They now profess a welcome sense of urgency, as do the committees of Congress with jurisdiction they previously neglected to exercise. Perhaps it goes without saying that insofar as possible the workers and their families should be made whole and the environment cleaned up. But the duty of the politicians goes beyond that. This is a story of people who were harmed by a government that they trusted and that lied to them. That's the ultimate problem. Who trusts the government next, and who among the current politicians can restore such trust?

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The Editorial Page

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The Paducah Sun

Letters and E-Mail From Our Readers

WRITE YOUR REPRESENTATIVES

Here are the addresses and phone numbers of your officials in Washington:

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Washington office: 202-224-4343

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U.S. SEN. PETER FITZGERALD
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Washington, D.C. 20510
Washington office: 202-224-2854

IN OUR OPINION

December 28, 1999

OVERLOOKED

TCE plumes local plant's worst problem

To us one of the more troubling aspects in a troubled year for Paducah's gaseous diffusion facility is that despite a sudden uproar and national scrutiny of contamination there, the site's longest-known and by far most serious environmental problem still receives short shrift.

Many in the media focused reporting on such matters as a small mountain of radioactive scrap that sits rusting at the site and spectacular claims in a lawsuit that uncertain amounts of potentially deadly materials such as plutonium or neptunium have been or still are present at the site.

Very serious matters, we grant. Our point is not to downplay them. However, a side of us can note that they seem to take center stage only because they are "sexier" to talk about than other problems at the site that going forward seem far more troubling.

No one takes lightly the fact that workers at the federal government's Paducah operation may have unwittingly and even callously been allowed to come in contact with materials that can easily be deadly if not handled properly. No one contends that workers who may have been harmed as a result, or their families, should not be justly compensated.

However, in terms of immediate health threats to the surrounding environment, radioactive elements such as neptunium and plutonium, which received the lion's share of the national publicity earlier this year,

are down the list. Such materials by and large are inert. They are heavy, not water soluble, and ergo tend to stay where they are.

Arguably the most dangerous material ever used at the plant, one that is leaching into the groundwater and moving toward the Ohio River at a troubling rate, is not a nuclear by-product at all. It is trichloroethylene, a chemical that was used in large amounts during the early years of the plant to degrease a wide variety of equipment.

Trichloroethylene (TCE) was widely used for such purposes in many industries during the latter part of this century. It also was heavily used in the dry-cleaning industry. And it had other common uses, including extracting caffeine from coffee to make "decaf."

But during the 1980s concern about the substance began to grow nationwide. It had a nasty way of seeping into the groundwater, and from there into wells. Animal studies put it on the danger list as a "probable human carcinogen." It appeared to cause liver cancer in some test animals at high doses, although studies conflicted in their results and scientists remain in disagreement. TCE also was alleged in some civil lawsuits to play a role in leukemia.

In the case of the Paducah plant, the problem is complicated by the fact that technetium-99, a radioactive enrichment by-product that is soluble and thus can move off site, appears to be doing so in combination with the plumes of TCE.

As recently as Sunday the Louisville Courier-Journal reported a study by a University of Kentucky research group indicating both these elements are present in the surface water of Little Bayou Creek, which flows through the West Kentucky Wildlife Management Area adjacent to the plant, and from

there into the Ohio River.

The Environmental Protection Agency adopted maximum allowable levels for TCE in drinking water in 1987. The Paducah Sun published a lengthy story by Joe Walker in 1986 about the discovery of the TCE problem at the Paducah plant by the Department of Energy's contractor. Specifically, the contractor discovered that TCE had been leaking into the ground from a storm sewer under one of the plant's busiest intersections, possibly for the past 30 years. The DOE and plant officials were aware of the EPA standard to be issued the following year on TCE, and were in a quandary about what to do.

The infuriating thing for Paducah residents is that two decades and $400 million worth of paperwork later, not much has changed. There is a pumping and treatment effort under way in one of the contaminated areas, but the UK findings now cast doubt on its effectiveness. Meanwhile, a second TCE plume was discovered heading off site last summer, approaching the river at an even faster rate than the one that has long been under study.

The truly outrageous aspect of this is that this is a government-owned and operated production site, which has been and continues to be administered by the Department of Energy. It has been polluting groundwater in violation of the government's own EPA standards for almost 20 years. The contamination now reportedly has been found in a heavily used state wildlife and recreation area, and allegedly is already reaching the Ohio River.

This is a far more serious health and environmental threat than any pile of mildly contaminated scrap metal sitting around on the plant's back forty. However, because the latter problem is more visible, has received more national attention, and frankly will be far less costly to clean up, the latter effort is the one on the fast track.

What penalty do you suppose Justice Department lawyers would exact from any private company that allowed a problem of this magnitude to fester 20 years, such that a public wildlife area was despoiled and drinking water contaminated? One shudders to think.

Ah, but as we so often point out, government generally refuses to abide by the same standards it imposes on its serfs.

Particularly insulting against this backdrop is the continued poor-mouthing by DOE about its inability to come up with the money to deal with the mess it has made here. This from an agency proposing next year to spend $1.5 billion at its Tennessee nuclear facilities; $2.8 billion in New Mexico, home of the current DOE chief; and a mere $49 million to deal with its problems here in Kentucky.

It is difficult to admit, but it is increasingly apparent DOE for decades now has played the people of this region for fools. To date we see little persuasive evidence that attitude has changed.

Jim Paxton

-Letter and E-Mail Guidelines-

The Paducah Sun welcomes letters and E-mail from readers. Published letters must include a phone number, signature and address for purposes of verification (we will not publish your phone number or street address, but we will call you to verify that the letter or message we received is yours). All are subject to editing for clarity and brevity. We try to give broad leeway to writers, but obviously we will not publish communications that strike us as possibly libelous, unduly personal, mean-spirited, or racially inflammatory. In addition, we ask that you adhere to the following guidelines:

First - sign your name on any written communication. Don't send a photocopy of a letter or of your signature.

Second - include your complete address and telephone number where we can reach you in the daytime.

Third, - be brief.

Fourth - except in unusual circumstances, don't ask us to withhold your name. The object of all this is to give readers a forum for full and fair discussion of public issues. Sometimes we have not enforced one or another of these rules where no harm seemed to result, but writers who adhere are those most likely to be published. Letters are published pretty much on a first-come, first-serve basis. We cannot guarantee publication dates.

The Courier-Journal

Tuesday, Dec. 28, 1999 LOCAL NEWS

U.S. wants to dig at uranium plant

Investigators seek soil samples from waste ditch

By JAMES MALONE, The Courier-Journal

PADUCAH, Ky. -- The U.S. Department of Justice plans to dig two large trenches and sample the soil from a drainage ditch where hazardous waste once leaked from the Paducah Gaseous Diffusion Plant.

The excavation is part of the Justice Department's investigation of whistle-blowers' allegations against private contractors that previously operated the uranium-enrichment plant for the federal government.

Radioactive and hazardous wastes, including PCBs, have been found in the ditch, which in the past drained surface runoff from the plant grounds.

Mark York, a spokesman for the state Natural Resources and Environmental Protection Cabinet, said the Justice Department is seeking a state permit to excavate two areas near the perimeter of a landfill outside the plant's northern security fence. State officials are expected to issue the permit this week and work could begin immediately after that, York said.

He said Justice officials discussed the excavation earlier this month with the Division of Waste Management and the Natural Resources Cabinet's lawyers. Federal officials did not specify what caused them to make the unusual request, York said, but "they were interested in finding materials in those specific sites."

The U.S. attorney's office in Louisville and FBI agents are investigating allegations in a whistle-blower lawsuit three plant employees filed last summer. The suit contends that former plant operators falsified records about the extent of radiation and pollution at the plant to collect millions of dollars in annual performance incentives in their contracts.

The U.S. attorney's office has been granted an extension of time to complete its investigation into whether the government should join the lawsuit to recover any money that may be owed to it.

Kent Wicker, an assistant U.S. attorney in Louisville, said it is premature to comment on details of the excavation, but he said the U.S. attorney's office cited the need for the excavation in asking for the extension.

Dennis Hill, a spokesman for Bechtel Jacobs, the government's environmental cleanup contractor for the site, said at least six subcontractors will be involved in the dig, which he said would involve "sampling and analysis." Hill said the Justice Department's involvement has to do with its investigation into the allegations.

Assistant U.S. Attorney Bill Campbell and a federal investigator attended a community advisory board meeting last month but would not discuss why they were there.

York said each of the trenches would be 25 feet long, 15 feet wide and 15 to 20 feet deep.

State technicians will conduct "split" sampling on materials taken from the dig, meaning the U.S. and state agencies will perform independent tests of the same material, York said. He was unsure whether the Division of Waste Management would have anyone on site to observe the dig.

The area generally encompasses the old north-south diversion ditch off Ogden Landing Road north of the plant. The ditch is no longer used for drainage and is not near any dwellings.

The Department of Energy, which owns the 47-year-old plant, declined to comment on the Justice Department's investigation.

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Contaminated groundwater seeping into creek, study says

The Paducah Sun
12/27/99 - P. 1A

Associated Press

A University of Kentucky study shows that contaminated groundwater trickling from under the Paducah Gaseous Diffusion Plant has leaked into a stream that flows into the Ohio River, according to a newspaper report published Sunday.

Researchers have discovered trichloroethylene, a degreasing solvent thought to cause cancer, and radioactive technetium-99 in Little Bayou Creek, a small stream that runs through a public wildlife and recreation area, The Courier-Journal of Louisville reported in Sunday's editions.

Alan Fryar, assistant professor in the University of Kentucky's Department of Geological Sciences, has been studying the groundwater's seeping from under the government-owned plant's property for 3½ years and found the leak.

Technetium-99, a byproduct of uranium processing, and trichloroethylene are trickling into the creek in high enough amounts that a device that pumps the polluted water and treats it is not catching all the contaminants, Fryar said.

The shallow creek, which flows through the West Kentucky Wildlife Management Area east of the Paducah plant and is open to the public, is not used for drinking water. The fish in the creek, which in many places is only 6 inches deep, are very small.

But deer and raccoon footprints seen recently in the soil along the creek beds testify to the critical role Little Bayou Creek plays in supporting a variety of wildlife, including game birds. And a vast array of plant life grows up to the edge of the creek.

Quail, deer and rabbit hunting is permitted in the wildlife area, and national hunting dog trials are held there every year.

"I think it's fairly safe to say that exposure to either compound is not wise," said Tom FitzGerald, director of the Kentucky Natural Resources Council. "To the extent you've got this stuff in Little Bayou Creek or any surface water, you've got a potential pathway to the public, and that needs to be addressed."

Fryar's researchers found that the plume had reached the surface water last year. His team's findings are to be published in a scientific journal in May.

The discovery was noted in a state Department for Environmental Protection newsletter in the fall of 1998, but the contamination has not been common knowledge.

Neither the Department of Energy, which controls the plant site; nor the United States Enrichment Corp., which leases and operates the uranium enrichment facilities; nor state officials, have said that contaminants are reaching surface water.

A copy of the 63-page study was given to the newspaper under the condition that it not quote from the report directly. The study was supported by the United States Geological Survey and by the Energy Department and the Commonwealth of Kentucky.

Based on water samples taken from all around the plant site, researchers have determined that the so-called northwest plume is emptying the chemicals through underground springs into the creek.

The results were based on water samples taken monthly from wells and the team's own borings from July 1996 through October 1997 and supplemented by measurements in July 1998. Samples were taken at 46 locations along and near Little Bayou Creek and Big Bayou Creek.

Gov. Paul Patton's office has tried to persuade the U.S. Department of Energy and the Clinton administration to spend more money on investigating and cleaning up the plant and its surroundings but have had limited success.

"If they don't address this in short order, the problem is only going to get worse," said Jack Conway, who heads the governor's interagency task force on the Paducah plant. "The (Department of Energy) must address the source of that groundwater contamination. ... The best way to treat this is to identify it at the source. ... They have yet to do that."

The Courier-Journal
Sunday, Dec. 26, 1999 LOCAL NEWS

Paducah creek is polluted

Ground water seeping from uranium plant

By JAMES R. CARROLL, The Courier-Journal

PADUCAH, Ky. -- Contaminated ground water migrating from under the Paducah uranium plant site has leaked to the surface into nearby Little Bayou Creek, raising new concerns about public health risks.

Scientists have found trichloro-ethylene, a degreasing solvent suspected of causing cancer, and radioactive technetium-99 in the stream that flows through a public wildlife and recreation area, where fish swim and deer, raccoons and other wildlife drink its water.

"I think it's fairly safe to say that exposure to either compound is not wise," said Tom FitzGerald, director of the Kentucky Natural Resources Council. "To the extent you've got this stuff in Little Bayou Creek or any surface water, you've got a potential pathway to the public, and that needs to be addressed."

Technetium-99, a byproduct of uranium processing, and trichloroethylene, or TCE, are leaking into the creek in high enough concentrations that it is clear that an ongoing project that pumps the polluted ground water and treats it is not catching all the contaminants, said Alan Fryar, assistant professor in the University of Kentucky's Department of Geological Sciences.

Fryar has been studying two plumes of contaminated ground water flowing from under the Paducah Gaseous

Diffusion Plant property for three and a half years and discovered the leaking plume.

The contaminated creek, which flows into the Ohio River, is frustrating Gov. Paul Patton's office, where efforts to prod the U.S. Department of Energy and the Clinton administration to spend dramatically more money on investigating and cleaning up the plant and its surroundings have produced limited results.

"The federal government needs to immediately address this problem and increase funding for cleanup," said Jack Conway, who is heading up the governor's interagency task force on the Paducah plant. "They have to get this ground water plume under control and get it under control in short order."

THE ENERGY Department said it just received a copy of the UK study last Tuesday. "We're anxious to review its findings in detail," said department spokeswoman Lisa Cutler.

"The department takes the contaminated ground water problem in Paducah very seriously. We commissioned this report to help us better understand the nature of the contamination so we can tailor the cleanup plan to meet the problem."

The shallow creek, which traverses the West Kentucky Wildlife Management Area east of the Paducah plant and is open to the public, is not used for drinking water. The fish in the creek, in many places only six or eight inches deep, are very small. Signs warn against eating any fish from the creek.

But deer and racoon footprints spotted last week in the sand and clay soil along the creek beds testify to the critical role Little Bayou Creek plays in supporting a variety of wildlife, including game birds. And a vast array of plant life grows up to the edge of the creek.

Quail, deer and rabbit hunting is permitted in the wildlife area, and national hunting dog trials are held there every year.

Technetium has a half-life of 213,000 years -- meaning it will stay radioactive for at least that long -- and depending on soil conditions, it can be taken up by plants through their root systems. And, of course, animals eat the plants.

John Volpe, manager of the Radiation Health and Toxic Agents Branch under the Kentucky Department for Public Health, said that the levels of discovered technetium were well below what is considered harmful.

"It's hard for me to say there would be no risk, but based on the numbers, it would probably be low," he said.

He said his agency has not examined potential pathways by which technetium might be ingested by humans.

But, FitzGerald said, "if (technetium) is there and there's uptake through plants and in aquatic species, there's going to be ingestion by people -- eventually."

Mark Donham, an environmentalist who lives in Brookport, Ill., not far from the plant, said the contaminated ground water reaching the surface "points up the fact that (the Energy Department is) not doing anything to clean up the sources" of pollution.

The citizens' cleanup advisory board on which he serves has been urging the Energy Department to attack the sources of contamination, which are under plant grounds. But he said Energy Department officials told his group last July that going after the sources of the

pollution in some cases would mean shutting down critical plant operations.

DONHAM SAID the citizens group had not been told that ground water contaminants were discharging to the surface. Volpe, of the health department, said his agency "knew something was going on there" because of readings from the state's monitoring stations along the creek. Conway said the governor's office was "aware that ground water contamination may be having an effect on TCE levels in the creek."

Fryar's UK study team discovered that the plume had reached the surface water in 1998, and the findings are to be published in a scientific journal next May.

Although the discovery was noted briefly in a newsletter published by the state Department for Environmental Protection in the fall of 1998, the leaking plume has not been common knowledge.

Neither the Department of Energy, which controls the plant site; nor the United States Enrichment Corp., which leases and operates the uranium enrichment facilities; nor state officials, have said that contaminants are reaching surface water.

A copy of the 63-page study was given to The Courier-Journal under the condition that the newspaper not quote from the work directly.

Based on water samples taken from all around the plant site, the UK researchers have determined that the so-called northwest plume is emptying TCE and technetium through underground springs into Little Bayou Creek.

"It seems a significant portion of the plume is moving directly into Little Bayou Creek," Fryar said. The UK study was supported by the United States Geological

Survey and by the Energy Department and the Commonwealth of Kentucky.

THE FINDINGS were based on water samples taken monthly from wells and the study team's own borings from July 1996 through October 1997 and supplemented by measurements in July 1998. Samples were taken at 46 different locations along and near Little Bayou Creek and Big Bayou Creek.

The study did not look for signs of plutonium, uranium, neptunium or other radioactive elements because previous studies did not suggest that those elements might be in underground flows leaving the plant, Fryar said. But he said he will now consult with state officials about expanding the sampling to look for additional contaminants.

Plutonium and other highly radioactive metals contaminated some uranium processed at the plant from the 1950s into the 1970s.

"I think it might be worthwhile to sample for radionuclides to nail that point down," said UK's Fryar.

Researchers found that contaminants discharged into Little Bayou Creek were diluted by uncontaminated ground water as they flowed downstream toward the Ohio. Some TCE also may be evaporating rather than breaking down into even more toxic compounds like vinyl chloride, Fryar said.

In addition, he said, the TCE and the technetium most likely are being "trapped" downstream by a number of natural processes.

He said it's possible that bacteria are immobilizing the technetium in the stream beds, or that the radioactive compound is being absorbed into stream beds.

"We are now trying to disentangle these processes" with additional studies, Fryar said.

The concentrations of TCE at one point on the west bank of Little Bayou Creek were measured as high as 220 micrograms per liter. That's more than 40 times the amount allowed in drinking water -- 5 micrograms per liter.

TWELVE OTHER measurements -- on different days but sometimes at the same site -- produced readings of between 10 and 46 micrograms per liter of TCE -- all well above drinking water standards. Four additional measurements found concentrations under the drinking water standard, and seven more readings found TCE amounts measuring less than 1 microgram per liter each.

The technetium concentrations found in 17 different measurements were all below the government's maximum contaminant limit of 900 picoCuries per liter. The highest measurements were at two separate sites: 51.1 picoCuries per liter (plus or minus 8.0) and 53.4 picoCuries per liter (plus or minus 5.8).

Samples for both TCE and technetium were filtered, meaning contaminants that may have adhered to particles and larger solid material were not part of the count.

As a result, Fryar said, the concentrations "may be skewed a bit to the low side for TCE and (technetium)."

Indeed, one unfiltered measurement for technetium taken on the creek's west bank measured 115 picoCuries per liter.

Fryar's team is now collecting unfiltered samples for both contaminants.

Donning rubber knee boots last week, Fryar slogged through the narrow creek on a sub-freezing day. He pointed out significant features that the untrained eye would otherwise miss: small rivulets of water trickling from midway up the bank, a muddy depression, a ripple indicating a new current -- all telltale evidence of springs.

AT ONE point, Fryar put his ear to a small hole under a root to confirm a gurgling sound: sure evidence of one of about nine underground springs emptying into the creek. He forced a four-foot-long metal temperature probe into the alluvial creek bottom. It showed that the water entering from the spring was substantially warmer than the freezing water flowing in the creek -- more confirmation of a discharge from ground water.

He said that once the research is finalized, it could provide some direction for future strategies to contain the underground plume. Among the options discussed is construction of an expensive, in-ground barrier between the leading edge of the plume and the Ohio River.

The plumes were discovered in 1988 after tests found TCE and technetium in residential drinking-water wells. The use of the wells was stopped and residents were connected to Paducah's water supply instead.

A pump-and-treat system was set up to tap into the contaminated plumes, pull the polluted ground water to the surface for treatment, then return the treated water underground.

Now the old residential wells are used to help federal and state officials monitor the underground movement of the plumes.

But tracking the plumes has proved difficult. The

Natural Resource Council's FitzGerald likened the task to a game of "Battleship," in which players try to knock out each other's ships by guessing which squares the opponents' vessels are on.

With the plumes, they have to pass through wells serving as monitoring points for scientists to know the location of the contaminants. Where there are few monitoring points, the location of the plumes is less precise.

Still unanswered is whether any part of the northwest plume has reached the Ohio River. If and when it does, the Environmental Protection Agency has theorized that the plume's contaminants would be so diluted by the river's flow that they would cease to be a threat to public health or the environment.

Big Bayou Creek -- a different creek that flows by the west side of the plant grounds north to the Ohio River -- so far does not appear to be receiving contaminants from the northwest plume, Fryar said.

AS FOR THE other, northeast, plume, which is believed to be primarily polluted with TCE, it appears to be passing under Little Bayou Creek without discharging into it, he said. But he added that the plume is likely at some time in the future to be intercepted by Metropolis Lake.

FitzGerald said there is little scientific information about the possible health effects of exposure to low levels of radioactive contaminants in the environment.

"I think the real question is about how adequately this area has ever been characterized," he said. "If there's one thing that the past year has shown, it is that there needs to be a truly independent assessment by an entity that has the credibility that can engender and deserve public trust."

Conway, of the governor's interagency task force, said the plumes are one of the state's highest priorities when it talks to the Energy Department about environmental hazards at the Paducah plant.

"If they don't address this in short order, the problem is only going to get worse," he said. "The (Department of Energy) must address the source of that ground water contamination. . . . The best way to treat this is to identify it at the source. . . . They have yet to do that."

Staff writer James Malone contributed to this story.

Previous stories on the Paducah plant are online at *www.courier-journal.com/cjextra*

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List kept of cancer cases at gaseous diffusion plant

The Paducah Sun
12/24/99 - P. 1A

■ **The Paducah** *list of affected employees was secret. It is not known who kept the list or why.*

Associated Press

While operators claimed that Paducah Gaseous Diffusion Plant workers were safe, they secretly tracked employees' cancers that may have been caused by radiation, The Courier-Journal reported.

In the early 1980s, managers at the Department of Energy plant counted 13 current and former workers who suffered from leukemia and other cancers in the previous 27 years. Some names and some initials were listed on a sheet of paper marked "personal and confidential," The Courier-Journal reported Thursday.

The Washington Post also reported Thursday that its analysis of plant rosters listing more than 200 employees found that 10 died of blood and lymph system cancers, including six of leukemia. Government mortality rates show that only a single death would be expected in a group of adults that size.

At the time the cancer list was put together, DOE and plant officials allegedly hid information that highly radioactive metals such as plutonium and neptunium had contaminated some of the uranium processed at the plant for nuclear bombs and commercial power plants, federal lawsuits allege.

Government medical researchers saw the list when they visited the plant in 1992 and urged DOE to study the incidence of leukemia among workers. Later that year, the National Institute of Occupational Safety and Health pondered the study but declined, partly because it was doing similar work at Paducah's sister plant near Portsmouth, Ohio.

A preliminary study at Paducah found no startling links to disease and neither does a follow-up due out next year, the institute says. The first study revealed the same numbers as the DOE list: 13 leukemia cases among about 10,000 current and former workers.

The Courier-Journal obtained the list from the Energy Department through the Freedom of Information Act. It is not known why the plant operator — either Union Carbide or Martin Marietta, which took over operations in 1984 — kept the list.

Ten of the 13 workers were dead by 1984, about the time the undated list was apparently made. Most worked in a uranium-processing building, in maintenance or in laboratories that could have exposed them to radiation. One was a clerk.

The other employees were identified only by initials, and the newspaper could not determine whether they are alive.

Medical experts say that 13 cancers in more than 5,000 employees at the plant since it opened in 1953 may not be excessive. That number did not include people who died of lung cancer and other radiation-linked cancers.

Joe Harding died of stomach cancer in 1980 after claiming he was poisoned by radiation. Tests after his death showed high levels of radioactive uranium in his bones.

Retired plant health physicist Charles Turok, whose name appears at the bottom of the document indicating he had received a copy, said he did not recall seeing it and was never told there were excessive cancer deaths. Retired health physicist Bruce McDougal, who also was listed as having received a copy, also said he had never seen it.

Steven Wyatt, a spokesman for the Energy Department's office in Oak Ridge, Tenn., said he showed copies of the list to department officials in Paducah and Oak Ridge, and "no one has a clue as to who kept it or why."

"Workers should have been told the list was being kept and why they were being tracked," said Jim Key, health and safety representative for the Paper, Allied Industrial, Chemical and Energy Workers Union, which represents the workers. "I was astounded they had been tracking this and never told us."

Survivors of some of the dead workers also want to know why they were never told.

"As Martin Luther King said, 'We just want to know the truth,'" said Sue Freeman, the widow of Challie Freeman. He worked as a security officer and in a maintenance job for 21 years before developing a rare cancer and dying in 1984.

The list shows that nine workers developed leukemia from 1956 to 1981. Two had lymphoma and two had forms of myeloma, a cancer of bone-marrow tissue.

Other documents show DOE has collected data on worker deaths at its nuclear plants. By the early 1990s, it had collected 700 death certificates of former Paducah workers and hundreds more of dead workers at other nuclear facilities.

Government records show that a study of Paducah workers was discussed in 1980 and that a study of workers' deaths was begun in 1983 but abandoned. By 1986, the Energy Department's priority had shifted from evaluating worker health to studying the risks of plant neighbors.

Without knowing how many workers were exposed to radiation, it is impossible to say if the Paducah plan leukemia rate was too high, said Tom Tucker, director of the Kentucky Cancer Registry. If there were 2,000 to 5,000 exposed workers, he said, nine leukemia cases in 25 years would not appear excessive. The same number of cases in a much lower pool — 400 to 500 — would be elevated, Tucker said.

To determine excessive rates, epidemiological studies compare disease rates in exposed and non-exposed populations. Tucker said one reason Paducah wasn't studied separately is that its workers are younger than those at some other DOE weapons plants. Also, the pool is smaller, making it hard to reach statistically significant conclusions, he said.

Such a study would be enormously complex and costly because Paducah workers may have also been exposed to hazardous waste, chemicals and strong electrical fields. Radiation exposure data quality also is suspect.

Earlier this year, three plant employees filed a federal false claims lawsuit alleging workers at the Paducah plant were unwittingly exposed to plutonium and other highly toxic substances from 1953 to 1976. Another federal suit followed, seeking to be a class action for as many as 10,000 workers and relatives.

A recent DOE investigation looking back to 1990 found that worker safety and environmental problems have persisted during federal efforts to clean up the plant.

That report, released in October, said plant workers had not been adequately informed of some risks. Energy Secretary Bill Richardson has apologized for the failure to disclose plant hazards and promised compensation for sick workers.

The Paducah Sun

December 23, 1999

DOE budget to fund worker tests

By Joe Walker
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A senior Department of Energy official says the agency has juggled its budget to find $7 million for worker health and related studies at Paducah and two other uranium enrichment plants.

Speaking on condition of anonymity, the official said the money includes $3 million for medical testing of current and former uranium workers, and the rest will study the historical movement of harmful materials at the plants.

"For this fiscal year, ... by reallocating money that DOE already has, we've set aside money for health studies," the official said. "The amount is $3 million to get started."

The official asked not to be identified because the development had not been approved for public release. The Sun learned of the move Wednesday, two weeks after the $7 million had been pulled from the budget approved by Congress in November. The money is needed to expand the program to include 6,000 current and former workers annually.

Congress told DOE to change priorities and use other funds to pay for the expansion of testing. After starting last year, it had only enough funds to test about 400 former workers yearly at each plant - Paducah; Portsmouth, Ohio, and a closed facility in Oak Ridge, Tenn. The money had been insufficient to test current workers.

In September, after news stories and lawsuits alleged that workers at the Paducah plant may have been exposed to cancer-causing radioactive materials, Energy Secretary Bill Richardson proposed expanding the program to test more former workers and begin testing current workers. One of the main goals of the expanded program is to test current workers for early signs of lung cancer.

"The secretary committed to provide the funding, but it took us a while to decide how to cover these costs after the budget amendment didn't go through," the official said. "It wasn't something we decided to do this week."

Funding was removed from the energy appropriations bill at the last minute. Federal lawmakers representing the Paducah area did not learn of the move until several days after the budget was approved.

In the budget, Congress told DOE to "reprioritize" funding for the health studies and seek more funds for fiscal year 2001 to fund the expanded program fully. The senior official said that in talks with the Office of Management and Budget, the department has identified funding in the 2001 budget for the expansion.

The official said the juggling of funds was coincidental to a letter sent Wednesday by U.S. Sens. Jim Bunning and Mitch McConnell imploring the OMB to set aside more than $162 million for environmental cleanup, worker health testing and job preservation efforts at the Paducah plant. The senators wrote OMB Director Jacob Lew, who is developing the Clinton administration's fiscal 2001 budget, strongly urging Lew to include the funding in his list of priorities.

Funding to expand health testing for current and former workers was one of four points stressed by McConnell and Bunning. Richardson promised to "find the money for the work," the letter said.

"Unfortunately, this funding has not materialized."

The senators attached a report included in the Energy and Water Bill signed by Clinton. The report said Congress provided nearly $49 million for health studies of enrichment workers at the three plants and urged DOE to seek ample funds in 2001 to test current and former workers not yet screened.

"We hope we can count on the cooperation of this administration to clean up the Department of Energy's environmental legacy and provide health screenings for the workers," McConnell said in a news release.

The letter outlined three other "imperative" budget matters concerning the plant:

--At least $60 million to ensure conversion of 57,000 cylinders of depleted uranium hexafluoride. The senators reminded Lew of Richardson's recent promise to provide $24 million toward converting the toxic, mildly radioactive material to something safer. They also said Congress fully funded Clinton's request for $5 million in fiscal 2000 for the project.

"While we are pleased to provide this initial down payment, we realize that significantly more funding must be appropriated before a single ounce of waste will be rendered safe," the letter said.

--$100 million for DOE to meet plant cleanup needs as identified by state environmental protection officials. It is apparent that DOE "has failed to identify all sites of contamination, let alone achieve any significant cleanup, despite spending $400 million in the past 10 years," the senators wrote.

--At least $2 million to help the Paducah Area Community Reuse Organization attract new business opportunities for the region and develop job options for displaced plant workers. The DOE-funded group received $6 million of its $8 million grant request this year.

The senators said PACRO needs more business recruitment money to offset image problems stemming from inadequate oversight and poor radiation control at the plant. The plant also faces "potential job losses" from decreased production because of a glut of enriched uranium imported from Russia as part of nuclear disarmament, the senators' letter said.

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The Courier-Journal

Thursday, Dec. 23, 1999 LOCAL NEWS

Paducah plant kept cancer list

Secret file tracked 13 with disease

By JAMES MALONE, The Courier-Journal

PADUCAH, Ky. -- The Paducah Gaseous Diffusion Plant was secretly compiling cases of cancers that may have been caused by radiation at a time when its operators and the federal government were insisting that workers were safe.

MORE ON THIS STORY

RADIATION:
A federal agency says that workplace radiation limits are too high and should be reduced.

ARCHIVE:
Previous stories on the Paducah plant are online in C-J Extra

On a single sheet of paper marked "personal and confidential," plant managers in the early 1980s counted 13 current and former workers who'd suffered leukemia and allied cancers in the previous 27 years.

The list was prepared at a time the government and the plant also were concealing from workers the information that plutonium and neptunium -- highly radioactive metals that can cause cancer when ingested or inhaled -- had contaminated some of the uranium processed at the plant for nuclear bombs and commercial power plants.

The document was among items government medical researchers saw when they visited the plant in 1992 and recommended that the U.S. Department of Energy study the incidence of leukemia among workers. That study was never done.

The Courier-Journal obtained the list from the Energy Department through the Freedom of Information Act.

Told of the list, survivors of some of the dead workers said they now wonder whether their cancers -- including leukemia, lymphoma and multiple myeloma -- were caused by the radiation that workers have said was as much a part of their jobs as a lunch bucket.

"We just want to know the truth," said Sue Freeman, widow of Challie Freeman, who worked at the plant 21 years and died of cancer.
BY JIM ROSHAI
SPECIAL TO THE C-J

"As Martin Luther King said, 'We just want to know the truth,' " said Sue Freeman, the widow of Challie Freeman, who worked as a security officer and in a maintenance job for 21 years before developing myelofibrosis, an unusual cancer. He died in 1984.

TEN OF THE 13 workers had died by 1984, which is about when the undated list was apparently prepared. Most had jobs in the uranium-processing building, in maintenance or in laboratories that could have exposed them to radiation. One was a clerk.

The other three employees on the list were identified only by initials, and the

newspaper could not determine whether they are alive.

Medical experts say that 13 cancers over nearly 30 years may not be excessive, given that more than 5,000 people have worked at the government-owned uranium-processing facility since it opened in 1953. But the tally didn't include people who died of lung cancer and other radiation-linked cancers -- including Joe Harding, who died of stomach cancer in 1980 after claiming he was poisoned by radiation. Tests after his death showed high levels of radioactive uranium in his bones.

It's not known why the plant operator -- Union Carbide or Martin Marietta, which took over in 1984 -- kept the list.

Retired plant health physicist Charles Turok -- whose name appears at the bottom of the document indicating he had received a copy -- said he doesn't recall seeing it. Energy Department officials in Oak Ridge, Tenn., periodically requested information about certain diseases and asked for death records of all current and former workers, he said.

"I was middle management, but I sat at the table sometimes with top management, and I never was told by anyone that there was an excessive number of cancer deaths," he said.

RETIRED HEALTH physicist Bruce McDougal of Lone Oak, who also was listed as having received a copy of the memo, said he had never seen it but declined to be interviewed.

The Oak Ridge Institute for Science and Education or ORISE, an academic consortium funded by the Energy Department, has collected data and studied the health of nuclear workers. Donna Cragle, its director of epedemiological research, said she did not know about the list, either.

But if a contractor had workers potentially exposed to radiation, it would seem logical for them to look at things related to radiation, Cragle said in a telephone interview.

Steven Wyatt, a spokesman for the Energy Department's office in Oak Ridge, said he showed copies of the cancer list to department personnel in Paducah and Oak Ridge, and "no one has a clue as to who kept it or why."

"Workers should have been told the list was being kept and why they were being tracked," said Jim Key, health and safety representative for Local 5-550 of the Paper, Allied Industrial, Chemical and Energy Workers Union, which represents the workers. "I was astounded they had been tracking this and never told us."

The Energy Department has been collecting its own data on worker deaths at its nuclear plants, other agency documents indicate. By the early 1990s, it had collected 700 death certificates of former Paducah workers and hundreds more of dead workers at other nuclear facilities.

The Energy Department has collected the death certificates "because there is an issue" about links to radiation exposure, said Pam Bonee, an ORISE spokeswoman.

THOUGH THE Energy Department and plant management have gathered data on workers' illnesses, there has never been a study of Paducah workers' health since the plant opened in 1952.

Government records show that a study of Paducah workers was discussed in 1980

and that a study of worker deaths was begun in 1983 but abandoned. By 1986, the Energy Department's priority had shifted to evaluating health risks for people living around the plant "and not to workers," according to a department memo about a proposed health study of plant neighbors.

A study of leukemia deaths among Paducah workers was considered in 1992 by the National Institute of Occupational Safety and Health, because of concerns about possible exposure to radiation and electromagnetic fields. But it was never done, partly because the institute was already studying worker health at a sister plant in Portsmouth, Ohio.

A preliminary study at that plant did not find any startling links to disease, and neither does a follow-up due out next year, the institute says. The original study found 13 leukemia cases among about 10,000 current and former workers.

The Paducah list shows that nine workers developed leukemia between 1956 and 1981, two lymphoma and two more forms of myeloma, a cancer of bone-marrow tissue.

But it doesn't include other workers whose deaths may have been related to radiation exposure -- including that of Talmadge Davis.

His daughter Lynette Brown said Davis had cancer in his bones and lung and liver and it spread throughout his body before he died in 1975 at 47.

BROWN SAID she is "150 percent sure" her father's cancer was caused by his job. She said his medical records show her father was exposed to uranium dust and gas and was repeatedly burned by chemicals and hot ash in his almost 25 years at the plant. He worked part of that time in a job that workers say was one of the dirtiest and dustiest at the plant.

"He was in a lot of pain," Brown said. "He died a torturous death."

Without knowing the number of workers who may have been exposed to radiation, however, it would be impossible to say whether the leukemia rate among Paducah workers was excessive, said Tom Tucker, director of the Kentucky Cancer Registry.

Tucker said that if the pool of exposed workers was in the 2,000-5,000 range, then the nine leukemia cases over 25 years would not appear excessive. But if the pool were much lower, say 400-500, "then that would be a high number of cases," Tucker said.

Experts say the key to establishing whether cancer rates were excessive is to study the pool of workers exposed to radiation against a group of people not exposed.

Cragle said one reason Paducah wasn't studied separately was that its workers are younger than those at some other Energy Department weapons plants, and the pool of workers is smaller, making it difficult to reach statistically significant conclusions.

Such a study would be enormously complex and costly because workers at Paducah may have been exposed to hazardous wastes and chemicals and strong electrical fields as well as to radiation, experts say. The quality of data on how much radiation each worker was exposed to also is suspect, making a study difficult.

In a 1991 letter to Cragle, Fred Mynatt, vice president for compliance, evaluations and policy for former plant operator Lockheed Martin, wrote that much of the

historical worker radiation-exposure data "may not totally or accurately reflect the actual exposure of the individual." And Mynatt said that other historical data appeared inadequate for calculating the actual dose workers received.

Survivors of some of the workers on the cancer list -- including Sue Freeman -- are among the hundreds of people who have joined a $10 billion lawsuit on behalf of workers and their families that alleges exposure to harmful radiation.

Andy Stahr, whose father, David Stahr, died of myeloma in 1972, also has joined the lawsuit.

His father's death has "always been in the back of my mind," said Stahr, who was 13 when his father died in 1972, leaving eight children. David Stahr was a lab technician at the plant for almost 20 years.

BUT NOT everyone who was on the list has sued. Paducah lawyer Jim Lindblad, whose father, Leon, died in 1978 of leukemia, said he always thought there may be a link to radiation. "But they (the company) were awful good to him," and proving a link to workplace radiation exposure would be expensive and mean going up against the government and a large corporation, he said.

Indeed, Clara Harding, who decided to sue Union Carbide over Joe Harding's alleged radiation exposure, waged a costly 18-year legal battle before accepting a $12,500 settlement last year.

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The Courier-Journal

Thursday, Dec. 23, 1999 LOCAL NEWS

Study suggests radiation limit too high

By JAMES R. CARROLL and JAMES MALONE, The Courier-Journal

Some medical studies show that workers exposed to low levels of radiation over many years have an increased risk of developing leukemia, and a government agency is urging that workplace radiation limits be reduced.

Research shows that exposure to 20 rems of radiation over a lifetime -- only four times the U.S. Department of Energy's yearly maximum for nuclear workers -- can increase a worker's chance of developing leukemia by about 20 percent, said Donna Cragle, director of epidemiological research for ORISE, an academic consortium in Oak Ridge, Tenn., funded by the Energy Department.

A 1995 study of 95,673 deaths among nuclear workers, done by French researcher Elizabeth Cardis for the World Health Organization, found "mortality from leukemia was significantly associated with a cumulative external radiation dose."

The Cardis study "is strong evidence that there is presently excess risk of leukemia at currently legal exposures," Thurman Wenzl, the leader of a leukemia study of nuclear workers being done by the National Institute of Occupational Safety and Health, said last year at a conference in New York. Wenzl, whose study excludes workers at the Paducah Gaseous Diffusion Plant, declined to be interviewed.

The nuclear industry disputes findings linking radiation to leukemia and cites studies to support its view. But the national institute has begun to question whether the current limits on radiation exposure in the workplace are too high.

"Recent occupational studies . . . have shown evidence that the current 5 rem per year occupational limit may not provide adequate protection to workers exposed to chronic, low-level radiation," states a February 1999 report by the institute.

Senators seek $160 million for cleanup, health tests

BY JAMES R. CARROLL, The Courier-Journal

WASHINGTON -- Kentucky's two U.S. senators are asking the Clinton administration to include more than $160 million in the fiscal 2001 federal budget for environmental cleanup and health testing at the Paducah uranium plant.

Republican Sens. Mitch McConnell and Jim Bunning wrote yesterday to Jacob Lew, director of the White House's Office of Management and Budget, urging him to make the Paducah money part of President Clinton's budget proposal to Congress at the start of next year.

The senators said there were four key areas they want covered in the budget:

· $100 million is needed for a variety of cleanup projects at the plant, the senators said.

"It is apparent from the results of (a) study conducted by (the Department of Energy) that it has failed to identify all sites of contamination, let alone achieve any significant cleanup, despite spending $400 million over the past 10 years," McConnell and Bunning wrote.

· $60 million to pay for a contract to convert 57,000

report by the institute.

"Most estimates of risk for occupational exposure to ionizing radiation have been based on the atomic bomb survivor data from World War II or on doses administered to medical patients in treatment programs," the report points out. "These were relatively high doses delivered over a short time period. Radiation workers are typically exposed to low levels of radiation over decades."

The report concludes: "A new 'Gold Standard' for occupational radiation risk assessment is needed."

But the health screenings of former employees at Energy Department plants in Paducah, Portsmouth, Ohio, and Oak Ridge begun this year do not check for leukemia or related cancers such as lymphomas or myeloma. That's because there are no tests for those diseases in their early stages, unlike for cancers of the breast, prostate and colon, researchers say.

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contract to convert 57,000 cylinders of depleted uranium hexafluoride into a more stable form for permanent storage.

· At least $2 million to help the Paducah Area Community Reuse Organization attract new businesses to the region.

· Additional spending to include current workers at the Paducah plant in a health testing program. Former workers currently are the only people being examined for work-related illnesses. The administration promised to find money to include current workers, but so far "this funding has not materialized," the senators said.

The senators' requests are similar to those Gov. Paul Patton made to Clinton at a luncheon of Democratic governors in Washington last week and again yesterday in a telephone conversation with Vice President Al Gore.

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Plant Hid Risk From Workers

Paducah Bosses Knew Some Had High Radiation Levels

By Joby Warrick
Washington Post Staff Writer
Thursday, December 23, 1999; Page A01

PADUCAH, Ky.—One worker collapsed on the factory floor, his body ravaged by lymphoma. Two others died within 105 days of different forms of leukemia. By the time Challie Freeman came down with a rare bone disease in the fall of 1979, questions had morphed into suspicions:

Was something at the U.S. government's uranium plant making workers sick?

One possible answer--radiation exposure--seemed persuasive to Freeman's doctor. He fired off a letter to the Paducah Gaseous Diffusion Plant. "It is imperative," he wrote, "that we learn as soon as possible the extent, nature and type of radiation to which he was exposed."

The reply--"no significant internal exposure"--was brief and emphatic. It was also false.

While the plant was denying knowledge of significant hazards to Freeman's doctors, confidential records showed the opposite: Freeman had tested positive multiple times for exposure to radioactive uranium and had even been restricted from working around uranium, an internal company memo shows.

In August, The Washington Post reported that Paducah workers were unwittingly exposed to highly radioactive plutonium and neptunium on the job from the 1950s to the 1970s. A subsequent four-month Post investigation has found additional evidence that plant officials kept employees uninformed about chemical and radiation hazards. In some cases, such as Freeman's, the plant withheld accurate medical information on radiation exposure--even while it privately tracked cancer deaths among workers.

A limited review of Paducah employee death records also turned up rates of leukemia among workers that appear higher than normal, based on government mortality statistics. Epidemiologists who reviewed the findings described the data as intriguing but cautioned that a much more intensive scientific study was needed, involving investigators with full access to employee records and medical histories, to establish whether a pattern existed. Such a study has not been done at Paducah.

The 48-year-old uranium plant is the subject of an Energy Department

investigation into worker health and safety practices. Union Carbide Corp., which allowed its operating contract to expire in 1984, declines to comment, saying its Paducah managers are long gone from the company. Energy Secretary Bill Richardson, whose agency owns the facility, has apologized for the failure to disclose plant hazards and has promised compensation for sick workers.

Any outside attempt to review medical issues at Paducah is complicated by a lack of complete information. The Energy Department, citing privacy laws, declined to release lists of workers and their assignments. But The Post obtained company rosters listing more than 200 Paducah employees who were hired to work in some of the plant's most dangerous uranium-handling areas between 1951 and 1971. Scores of death certificates were examined and more than 120 surviving employees who worked in those areas were interviewed.

Professional help was retained to categorize deaths, and a software program developed by the National Institute for Occupational Safety and Health was used to compare incidences of cancer to national rates.

The result: The incidence of leukemia at Paducah appeared elevated, according to epidemiologists who reviewed the data. Of the 211 people on the lists who could be located--about 13 percent of the plant's work force in an average year--10 died of cancers of the blood and lymphatic system, including six of leukemia. By comparison, government mortality statistics suggest that only a single leukemia death would be expected in a group of adults of that size.

Cancer clusters are difficult to document, and cancers are not necessarily caused by radiation. Some studies at other Energy Department plants have suggested links between workplace hazards and cancers; others have not. Whether chronic exposure to low doses of radiation causes cancer has been hotly debated for decades.

Still, several epidemiologists who reviewed the results said the unusual incidence of leukemia and other rare diseases suggests the need for a closer look.

"The findings are interesting and noteworthy and are grounds for a more complete study of the question," said David Richardson, an epidemiologist who is researching radiation health effects for the World Health Organization.

Senior Energy Department officials said the findings highlight a major policy dilemma for the agency: whether to pursue more studies or to expand pilot programs to directly compensate workers who get sick. Yesterday, the department announced that it had shifted spending priorities in its fiscal 2000 budget to increase money for health studies and medical monitoring at Paducah. However, officials worry that studies may not be the right approach.

"Epidemiology is not going to answer the questions precisely enough," said David Michaels, an epidemiologist and the assistant energy secretary for environment, safety and health.

Energy Secretary Richardson said he has proposed legislation to change the way his agency deals with its sick workers.

"Instead of fighting claims, we're actually helping workers without the debate about the rates of illness," he said. "The legislation we sent to Congress takes the burden of proof off those who are sick."

Documents obtained in October under the Freedom of Information Act show that Union Carbide began tracking the repeated cancer cases in its work force in the 1970s.

The first to die was Wade McNabb, a 20-year veteran who succumbed to chronic leukemia in 1972. That same fall, another worker died of multiple myeloma, a bone marrow disease.

Alton Henson died of leukemia in 1976. Two years later, three workers--Arvil Bean, Leonard Lindblad and David Wilson--died of leukemia or bone marrow diseases within a span of six months.

By 1982, the company had counted 13 fatal cancers of the blood or lymphatic system out of a relatively stable work force that ranged from 1,200 to 2,000 people. The list appears on a single sheet of paper--stamped "confidential" and copied to senior plant officials--identifying workers sometimes by initials. How Union Carbide intended to use the list is unclear, but the plant's records show no attempt by contractors to investigate possible links between the deaths and workplace hazards.

Meanwhile, plant workers were told everything was fine. When Challie Freeman fell ill with his deadly bone marrow disease at 59, plant officials offered a lot of sympathy but little truth, family members say.

Responding to a hematologist's queries about possible radiation exposure, a plant physician in a letter described Freeman as a "very fine man" whose exposure to hazardous materials had been near zero. Medical records produced by the plant showed "no significant internal exposure," based on years of weekly urine tests for uranium.

Not until 15 years after his death in 1984 did family members obtain his medical records from the Energy Department and learn the full story: Company tests had indeed found high levels of uranium in his body in the 1950s--so much, in fact, that Freeman once had to be moved to a different work area. His widow, Sue, recalls that he was transferred to a different job in the 1950s after being told simply that his urine was "hot."

Freeman's physician, Nashville hematologist John Flexner, remembered that the company's response "downplayed the exposures."

"They made you think there was no way this could be a case of cause-and-effect," Flexner said. "I guess I was naive to think they were telling the truth."

Union Carbide said that it did not have the ability to respond in the Freeman case because of the 20-year passage of time.

Plant policies required that workers exposed to certain amounts of radiation be moved to other, less hazardous jobs. But new records show this was ignored in some cases in which workers received up to twice the maximum dosage.

One who never got the word was A.B. Burris, a 74-year-old retiree who learned of his past exposures when he asked the Energy Department for his medical files this fall.

"They say I was put on 'strict restriction,' but I never found out about it until weeks ago," he said. "I can tell you they never changed my job or said anything to me about it."

Workers knew even less about potentially deadly plutonium and neptunium that spread through the plant in shipments of recycled nuclear reactor uranium fuel from the 1950s to the 1970s, plant documents show.

Confidential, 40-year-old memos released by the Energy Department in September showed that Union Carbide officials had decided against testing workers for exposure to the radioactive metals because of fears that workers would "use it . . . as an excuse for hazardous-duty pay."

Newly released memos show that senior managers were aware of the plutonium and neptunium problem as early as 1959 but concluded in classified studies that contaminants were not a health hazard because the amounts in each shipment were small--a maximum of 10 parts per billion of plutonium in each uranium shipment.

But over the years, the two metals began accumulating in soil and waste materials.

In a survey of Paducah plant buildings conducted in the early 1990s, more than half of the work areas sampled exceeded the plant's safety limits for plutonium and neptunium--in some cases by a factor of 10. A survey of a men's locker room found high levels in shower stalls and even on toilet seats.

Workers did know enough about radiation hazards to formally request additional safeguards.

When Union Carbide decided to stop providing mechanics with coveralls, the plant's union demanded in 1986 that the company take responsibility for "radiation carried into our homes, autos and other areas." Union Carbide denied the request, although in 1975 the union negotiated the right to protective clothing on demand.

The union was less successful in efforts to secure workers' rights to take regular breaks in a radiation-free lunchroom. In a written grievance in 1979, the union said workers "should not have to eat in a contaminated area."

The company denied the request.

Ailing workers in the past have had difficulty proving harm because

they lacked accurate monitoring data, David Fuller, president of the Paducah chapter of the Paper, Allied-Industrial, Chemical & Energy Workers Union, testified at a Senate hearing on Paducah in October.

While applauding government promises to financially aid ailing Paducah workers, Fuller and other union officials called for a compensation program for all workers that "reverses the burden of proof onto the government" while expanding medical monitoring for those most at risk.

"Monitoring is imperative," Fuller said, "but without any other remedy, monitoring is simply a process to watch people get sick and die."

Director of computer-assisted reporting Ira Chinoy, database editor Sarah Cohen, and staff researchers Alice Crites, Nathan Abse and Nancy Shiner contributed to this report.

Challie Freeman

Job: Cascade worker, security officer

Age at death: 64

Illness: Myelofibrosis

Did radioactive exposure on the job make Challie Freeman sick? His doctor suspected a link, but plant managers said no. Asked by doctors to provide details of Freeman's work history, a Union Carbide memo described light exposure to the skin but "no significant internal exposures."

Fifteen years after Freeman's death, the family obtained confidential plant memos that showed the opposite: Freeman had been restricted from uranium work in the 1950s because of "repeated positive urine samples" for radioactive uranium. The uranium remained high after weekends away from the job, the memo said.

Freeman became sick from a slowly progressing bone marrow disease in the 1970s and died in 1984. Near the end his weight plummeted from 190 pounds to 100 and he was in constant pain, said his wife, Sue, who quit her job to care for him. 'We always wondered if it was the plant that made him sick,' she said. 'Now I have no doubt.'

David R. Wilson

Job: Cascade operator

Age at death: 54

Illness: Lymphosarcoma

Like most Paducah workers, Wilson said little about his job, though sometimes he'd confide to his wife when he was exposed to unusually high levels of radiation. "He would say just he had been 'hot,'" remembers his widow, Winnie. One day in early 1978 he was rushed to the hospital after becoming ill at work. Tests confirmed he suffered

from a form of lymphoma, which ended his life just four months later.

Wade McNabb

Job: Cascade operator

Age at death: 55

Illness: Leukemia

The doctor's eyes spoke volumes. After breaking the awful news to McNabb -- a diagnosis of leukemia at age 40 -- he asked the ailing man where he worked. The reply, "Atomic Energy Plant, Paducah," prompted a nod and a knowing look. "Oh, yes," the hematologist said, "I'm treating several patients from Oak Ridge," Paducah's sister plant in Tennessee. McNabb began treatment and returned to the same job to preserve his salary and health benefits. "We didn't know what else to do," Dove, his widow, says. "You couldn't even talk about it at work, not if you wanted to keep your job."

Jack Owens

Job: Cascade operator, emergency crew

Age at death: 36

Illness: Rare blood/bone marrow disease

Owen's emergency crew job brought him into some of the most dangerous areas to clean up spills of chemicals and radioactive material. "Some days he'd come home with chemical burns at every orifice," remembers his widow, Norma Rebik. "Later, when his doctor asked what he had been exposed to, he said, 'Everything.'" In 1961, at 36, he died of a form of thrombocytopenia, a condition sometimes linked to environmental exposures. "He went from perfectly well to dead in a week," his widow said.

Leon Lindblad

Job: Cascade supervisor

Age at death: 62

Illness: Leukemia

An avowed believer in Paducah's "mission," Lindblad was ambivalent about whether the plant posed risks. "He'd say the radiation levels were not that high," remembers his widow, Virginia, and yet, he always "took his shoes off at the door because he didn't want to bring that stuff inside the house." Lindblad's suspicions multiplied after he became sick with leukemia. He drew up a list of accidents and dates. "If I die, you can sue them," Lindblad explained to his wife, "because they're the ones who did this to me." Virginia never got the chance: On a Friday in 1976, Linblad stashed the list in his desk, never suspecting that he would become gravely ill over the weekend. He never returned to work.

C. Arvil Bean

Job: Process maintenance

Age at death: 64

Illness: Leukemia

Bean's retirement plans included firing up the '49 Cadillac he was restoring and taking his wife on a trip to the Dakotas, where he was once stationed with the Army. Those ambitions faded the day he was diagnosed with acute leukemia at age 55. He replayed in his mind the times he had been exposed to radiation -- like the day he worked 16 hours cleaning up radioactive debris from a 1962 explosion. Despite his illness, Bean clung to his vacation dreams to the end. "Every few days he'd go out there and crank up that old car," daughter Nita said, "even in the snow."

Charles Edward Harris

Job: Machinist

Age at death: 62

Illness: Cancer, multiple organs

For 25 years, Harris worked in the plant's machine shop, grinding down and repairing the nickel-plated pipes and gear used to convert uranium powder to nuclear fuel. Unknown to Harris and most other workers at the time, the metals were contaminated with small amounts of plutonium and neptunium, radioactive elements far more dangerous than ordinary uranium. His son, David, may have been exposed to the same hazards during summer jobs at the plant: College students mowed grass and cleaned up pond sludge in areas now known to be contaminated with the highly radioactive metals. "At the time they told us point-blank there was nothing there but uranium," David said.

Eugene Ragland

Job: Chemical operator

Age at Death: 49

Illness: Lung cancer

The accident and Ragland's death will always be connected, at least in the mind of his widow, Marie. She still remembers his worried voice the night in March 1978 when he called to say he wouldn't be coming home from work. Ragland had been exposed to radiation during a mishap and had been asked to stay overnight for testing. Four months later, a separate medical test found "something wrong" with his blood, she said -- a result that led to the discovery of a rapidly spreading cancer in his lungs and chest. His death on Aug. 4 came so suddenly that Ragland had little time to ponder his illness, or the possible causes. "He always thought he was safe at the plant," Marie said. "They never let him know differently."

Plan to Recycle Nuclear Materials Runs Into Flak From Unions, Industry and Environmentalists

By JOHN J. FIALKA
Staff Reporter of THE WALL STREET JOURNAL

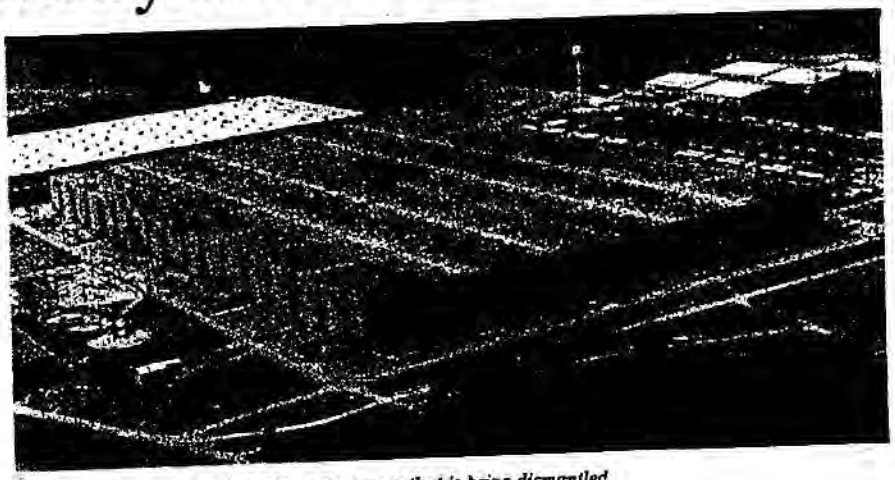
OAK RIDGE, Tenn.—One of the most unusual and tricky recycling projects in history is gearing up here. The goal: to recapture some of the billions of dollars the U.S. spent to make nuclear weapons during the Cold War by recycling used materials.

The old name of this sprawling industrial site was K-25 and what it once did was secret. The new name is the East Tennessee Technology Park, and it may soon produce products that could wind up in your home.

But while the Department of Energy-sponsored project has a lot going for it—Vice President Al Gore pushed it as part of his "reinventing government" policy—the idea of recycling material from nuclear facilities is running into flak. Democrats and Republicans in Congress are beginning to raise questions. Most of the nation's metal industry and related unions as well as environmental groups are arrayed in unusually unified opposition.

"I can't think of another time when the steel industry, the steelworkers union and the environmentalists have all been against a proposal by the government," marvels Michael J. Wright, a health-safety expert for the United Steelworkers of America.

The Nuclear Regulatory Commission has considered helping the project by setting an acceptable federal radiation standard for recycled materials. But after four hearings around the country that were filled with protests, the NRC is rethinking that idea. One option, says Mindy Landau, a commission spokeswoman, is: "We may not write a rule."



One of the plants *at Oak Ridge, Tennessee that is being dismantled*

Tricky Recycling Project

	Department of Energy	Department of Defense	Utilities
Total irradiated metal to be recycled	1.4 million tons	50 –100 thousand tons	730 thousand tons
Metal Source	Cleanup and scrapping of all facilities	Scrapping of Army tanks and Navy ships Operation and maintenance	Decommissioning of power plants

Source: DOE

DALE JACKSON
PADUCAH SITE
270-441-6801

And Energy Secretary Bill Richardson is rethinking the chain of decisions by the Clinton administration that put him in this ssy fight with political allies. "He has ed for options that would prevent unre-ricted, free release of these metals," says Brooke Anderson, the secretary's spokeswoman. The Metals Recycling Coalition, including trade groups representing the steel, zinc, copper, brass and nickel industries, recently informed Mr. Richardson that it would support the project only if the Energy Department uses all of the recycled material itself.

But James McAnally, an engineer who manages this project for BFNL Inc., a British government-owned company that has a $230 million contract with DOE to do the work, maintains that "this whole thing is a tempest in a teapot." Meantime, he says, the benefits are huge: This spring BFNL got a license from the state of Tennessee to recycle 6,000 tons of nickel. Such a move, BFNL estimates, will save the Energy Department about $50 million.

Mr. McAnally shows a visitor how his workers are starting to remove machinery from three cavernous gaseous diffusion plants here and cutting them apart to get at the recyclable metal. In all, there are 1.4 million tons of irradiated metals that the Energy Department would like to clean up and recycle from all of its nuclear facilities. They range from office furniture to mountains of nickel that were once used as a kind of exotic strainer to collect atoms of 5, the rare, unstable isotope of ura-, used for nuclear weapons.

The nickel presents Mr. McAnally with his biggest challenge. His crews can remove radioactive particles from most other metals by blasting the surface with metal grit. But DOE's rules of secrecy require that the nickel must first be melted into ingots so its shape is lost. That traps the radioactive contaminants inside it. BNFL, he explains, has an electrochemical process that dissolves the nickel and then removes most of the radioactive debris. In the three plants here, there are 40,000 tons of nickel, which could fetch about $250 million if recycled.

Using a Geiger counter, Mr. McAnally demonstrates that the recycled ingots emerge cleaner than some store-bought products, such as bananas, which have a slight degree of natural radiation. The Energy Department and the nuclear power industry would like to see the NRC set a national standard for recycled products, similar to the one millirem-per-year dose level recently established by the European Union. According to the NRC, that is a tiny fraction of the earth's natural radiation backround.

But in a letter to Secretary Richardson, John Wittenborn, counsel to the Metals Industry Recycling Coalition, says his group wants no irradiated materials released from the department: "Because the public perception is that any level or type of radioactivity is unsafe, this policy could adversely affect the marketability of metal products made from recycled scrap and, more broadly, the marketability of all metal products."

Vincent Adams, a chemist who runs the department's two-year-old recycling effort, says the public perception is wrong. About 30,000 tons of formerly irradiated scrap, half from the U.S. and half from the nuclear-power industry, currently is being recycled every year without harming the public, Dr. Adams says. "This is a political issue. We don't know of any technical reason not to proceed."

One of the players that has helped set the public's perception is the Paper, Allied-Industrial, Chemical & Energy Workers International Union, known as PACE. The union lost several hundred jobs here in 1996 when BNFL elected to hire workers from rival building and construction trades unions for the recycling project. The union sued the Energy Department and began rallying support from the metals industry, environmental groups and the media.

Environmental groups have launched a campaign aimed at stopping recycling. "It doesn't matter that the radiation here is less than some household items. It matters that it's additional to what you're exposed to," says Wenonah Hauter of Public Citizen, who sent a protest letter on behalf of 187 environmental groups to Mr. Gore. "This stuff could show up in zippers and IUDs [intrauterine devices] and baby toys."

Finally, the nation's scrap metal industry—vital to any recycling effort—has its own reason for paranoia. Lead-shielded radioactive isotopes, used by industry as measuring devices and for other uses, are finding their way into scrap-metal dumps and evading radiation detectors. When they are melted, sometimes they contaminate an entire plant, requiring expensive cleanups.

In this atmosphere, Ray Turner, an engineer from Cincinnati-based David J. Joseph Co., one of the world's largest scrap dealers, told the NRC that proposing a federal rule for an acceptable level of radiation is the political equivalent of "burying an atheist in a new suit: it's all dressed up and no place to go."

The Paducah Sun

December 22, 1999

Comment period opens on removal of drum pile

By Joe Walker
Sun Business Editor

The U.S. Department of Energy's pledged 2000 cleanup of a contaminated pile of scrap called "drum mountain" at the Paducah Gaseous Diffusion Plant has moved a step closer.

On Tuesday, DOE opened a 30-day public comment period on a plan to remove the pile and place the scrap in drums for shipment in 2001 to an approved disposal facility. Comments will be received through Jan. 20.

The draft plan was submitted for regulatory review in early November and conditionally approved by the Kentucky Department for Environmental Protection. State recommendations were built into the version now out for public comment.

Drum mountain is a 6,500-ton heap of empty, crushed drums once containing a mildly radioactive material called "greensalt" that was used decades ago to make uranium hexafluoride, which the plant enriches for use in nuclear fuel. Although the site was scheduled for cleanup, it came under intense scrutiny earlier this year after two federal lawsuits were filed alleging the plant poisoned workers and the public.

DOE launched an investigation into current and past safety practices and promised to clean up drum mountain next year. That decision, combined with a prior acceleration of the scrap removal, means that drum mountain will be excavated more than two years ahead of schedule, said DOE spokesman John Sheppard.

"The primary commitment is to have the material off the ground, if you will, and in disposal containers," Sheppard said. "I'm confident that not all of the material will be shipped off-site by that time frame (2000), but at least it will be off the ground, in suitable containers and prepared for shipment for ultimate disposal."

Pending public approval, Bechtel Jacobs, DOE's lead contractor, expects to have a removal firm hired by March, working by May and completing the packing of scrap by October. Sheppard expects shipment and disposal elsewhere to be completed by April 2001.

The anticipated regulatory and public approval of the plan is faster than many other cleanup plans undertaken by the plant. Sheppard said the approach for drum mountain is to plan for approved removal and disposal processes while trying to accommodate regulatory and public comments.

"There may well be a comment that expresses concerns about transportation issues" for example, he said. "What we'll do is prepare it to be fully compliant with Department of Transportation regulations and characterized in advance to meet waste acceptance criteria of whatever disposal site it is destined for."

Drum mountain, at the northwest corner of the fenced area of the plant, is a potential source of groundwater and surface water contamination. Despite its size, it accounts for only about 10 percent of the scrap metal at the plant.

The pile rests atop an old burial area that also is believed to be contaminated. A plan to clean up the burial ground will be prepared next year.

The draft plan is at the DOE Environmental Information Center in the West Kentucky Technology Park on U.S. 60 at Kevil, and at the Paducah Public Library. Comments should be addressed to Myrna Redfield, U.S. Department of Energy, Paducah Site Office, Box 1410, Paducah, KY 42001. Her phone number is 441-6801.

Copies may be requested by calling Bechtel Jacobs at 441-5023.

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Letters try to cut red tape for plant

The Paducah Sun
12/19/99 - P. 1A

■ **Tom Osborne** *is writing to Clinton and DOE Secretary Bill Richardson to find out where plant funding is and speed it up.*

By Bill Bartleman
The Paducah Sun

Calling one top federal official "as lost as an Easter egg" and another "an example of the problem," Tom Osborne is asking President Clinton and Energy Secretary Bill Richardson to help cut through the bureaucracy and fund two special projects for the Paducah Gaseous Diffusion Plant.

Osborne was part of a delegation led by Gov. Paul Patton that visited Washington last week to find out why an expanded worker medical testing program and construction of a uranium hexafluoride recycling plant have not been funded.

"The meetings we had were highly positive in terms of support from the president, the vice president's staff and John Podesta (the president's chief of staff)," Osborne said. "They were ready to take action. But there seemed to be problems with some assistant administrators who are supposed to see that these programs are carried out."

Osborne is so irritated by the attitudes of two officials that he is sending strongly worded letters to Clinton and Richardson asking them to "encourage" their appointees to be cooperative.

His targets are Elgie Holstein Jr., associate director of the Office of Management and Budget, and Carolyn Huntoon, assistant secretary of environmental management for the U.S. Department of Energy.

In the letter that will be sent to Clinton this week, Osborne restated some of the environmental problems and reminded Clinton of past conversations they have had about the Paducah plant.

Osborne said he talked to Clinton about the plant during campaign appearances in Paducah in 1992 and 1996, and at a meeting in Lexington about two years ago.

"Even though you understand this problem clearly and are committed to making government work for the people, your staff is not," Osborne said in the letter.

"Unfortunately, Associate Director of OMB Elgie Holstein Jr. was totally unfamiliar with our problems ... (in a meeting last month) with Gov. Patton." In a meeting on Thursday, Osborne said, Holstein "was again lost as an Easter egg ... (he) did not know the status of the $7 million in medical monitoring funds for these plant workers."

Osborne also told Clinton that Holstein did not know the status of $60 million in funds that are needed to begin construction of a plant to recycle 37,000 cylinders of depleted uranium hexafluoride.

"Moreover, he would not even find out the status and report back to Gov. Patton and myself," Osborne said. "Perhaps your staff could encourage Elgie Holstein Jr. to review OMB's budget and show Kentucky where these funds are located."

U.S. Sen. Mitch McConnell and U.S. Rep. Ed Whitfield said the budget that was approved by Congress last month included language that instructs the administration to spend $7 million for medical testing of current and former workers. Also, the initial funding for the recycling plant has been approved by Congress.

In the letter to Richardson, Osborne praises him for his commitment to help workers and speed the cleanup of contamination. During a visit to Paducah in September, Richardson apologized for problems at the plant, promised current and former workers they would be tested for health problems, and promised more funds for cleanup.

However, none of those promises have been kept, and Osborne said the "bureaucrats" in DOE and other agencies are to blame.

"Frankly, Mr. Secretary, Deputy Secretary Carolyn Huntoon does not share your deep concern for the people of this region," Osborne said in a draft of the letter to Richardson. "Nor does she share your zeal to make government work for the people, instead of against the people. Unfortunately, Deputy Secretary Huntoon is an example of the problem, not the solution."

Osborne asks Richardson to use his influence to clear up confusion over whether the medical testing funding and recycling plant funding are in the budget.

Osborne said he anticipates that the meetings last week and the letters will result in some action. "I am assuming we will get the answers to some of our questions about the budget by the end of the week," Osborne said.

Also during the meetings last week, the delegation led by Patton asked for an emergency appropriation early next year of $100 million that will allow for more cleanup work at the plant.

And, the visitors asked for an additional $100 million annually to keep the cleanup on a pace that would allow for all of the work to be completed by 2010.

In addition to 37,000 cylinders of depleted uranium, there are thousands of tons of contaminated materials in a scrap yard, contaminated groundwater and contaminated soil.

Officials estimate the cleanup will cost at least $1 billion and possible as much as $2 billion.

The Paducah Sun

December 18, 1999

Patton lobbies Clinton on cleanup

By Bill Bartleman
The Paducah Sun

Gov. Paul Patton thinks he has made significant progress in convincing the Clinton administration that funding to clean up the Paducah Gaseous Diffusion Plant should be increased by at least $100 million a year.

After meeting with top officials in the U.S. Department of Energy and the Office of Budget and Management on Thursday, Patton discussed the situation with President Clinton on Friday during a 25-minute private meeting.

"He had already been briefed about our concerns ... and said, 'We needed to address the issue,'" Patton said after the White House meeting. "I think we now have the attention of the administration at the very highest levels. Now we just have to wait and see if they recommended the funding" to Congress.

Patton told Clinton and other administration officials that the state will force the federal government to meet its written commitment to remove all the radioactive and chemical contamination at the plant by 2010. The cleanup will cost at least $1 billion - perhaps as much as $2 billion - and Patton said current funding levels of about $40 million annually aren't sufficient to meet the deadline.

Patton asked for an emergency appropriation of $100 million early next year, at least $100 million in the 2001 budget and at least $40 million to help design and build a plant to recycle more than 37,000 cylinders of depleted uranium hexafluoride, the waste from the enrichment process.

Chemical and radioactive contamination at the plant where uranium is enriched into a nuclear fuel has been accumulating since production began in 1952. The contamination is in buildings, soil, groundwater, cylinders, drums and a scrap yard. Some current and former workers have sued, claiming they became ill because of the contamination.

Patton said Clinton appeared genuinely interested in the problems.

"I had a one-page summary explaining the problems and told him I would give it to a member of his staff," Patton said. "But he wanted it himself so that he could look it over. He said he had already talked with John Podesta (Clinton's chief of staff) about the issue."

Patton began his lobbying effort Thursday by meeting with top Department of Energy officials and the executive branch Office of Budget and Management. He was joined by Paducah leader Tom Osborne, a lawyer who is vice chairman of the Kentucky Democratic Executive Committee; Paducah Bank Chief Executive Officer Joe Framptom, who is also president of the Greater Paducah Economic Development Council, and McCracken County Judge-Executive Danny Orazine.

The governor also met privately with Podesta on Thursday.

The delegation visiting Washington also included Paducah businessman Bruce Pope and Paducah Sun Publisher Fred Paxton. They held separate meetings with members of Kentucky's congressional delegation.

Even if Clinton recommends more funding, Patton said, it will have to be approved by Congress.

It was the third time in three months that Patton has met with top Clinton aides to ask for additional funds for the Paducah plant, which since August has been in the national spotlight because of worker lawsuits and acknowledgements by Energy Secretary Bill Richardson that workers were unknowingly exposed to plutonium and neptunium.

Friday was the first time the governor had talked directly with Clinton. Patton also has discussed the issue with Vice President Al Gore.

While no commitments were made Thursday or Friday, Patton said he felt good about the meetings. "These were breakthrough meetings," he said. "We've been up here before and made our requests in very strong terms, but if you don't keep coming back, they won't understand the urgency.

"We finally have gotten their attention that this is a problem that we take seriously and that we will not be happy with a no answer," Patton said.

The governor said he also warned of political implications, meaning possible damage to the chances of Democrats in Kentucky elections next year, if there aren't more cleanup funds for Paducah.

"I told them in no uncertain terms that this issue is very important to the people of Kentucky, and that if they didn't take some action, this administration would be blamed for the continuation of the problems," Patton said. "I made it a point that when I introduced Tom Osborne to make sure they knew he was vice chairman of the state Democratic Party."

Patton said that in each meeting, he hammered on the theme that contamination cleanup is just as important in the public sector as the private sector.

"It was a very frank discussion," Patton said. "This is a very environmentally conscious administration when it comes to enforcing environmental rules on private individuals and companies in Kentucky. They have done that with the tobacco industry and the coal industry. I told them they should be equally aggressive when it is their contamination and their responsibility for bearing the cost."

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The Paducah Sun

January 16, 2000

Salvage snarled, jobs in jeopardy

Funding shortage could endanger Paducah plant's conversion project

By Joe Walker
Sun Business Editor

Despite a $373 million special fund, a congressional mandate and what U.S. Sen. Jim Bunning of Kentucky calls an "ironclad promise" from the secretary of energy, there are signs that a job-saving project for the Paducah Gaseous Diffusion Plant is mired in bureaucracy.

Labor union officials, civic leaders and congressional sources fear there is too little "earnest money" in the Department of Energy's budget to hire a contractor to start building a facility to convert thousands of cylinders of uranium hexafluoride waste into something safer with potential commercial use.

DOE officials won't say how much money is available for the next fiscal year, but they confirm that a final request for proposals to hire a contractor is on hold. Delayed at least twice last year, the request was to have gone out Dec. 15.

"We are confident we have enough money in the budget to keep this project moving forward," said Lisa Cutler, a DOE spokesperson in Washington. "We will issue a formal request for proposals later this year."

Cutler said the DOE budget is embargoed as part of the presidential budget, and Energy Secretary Bill Richardson is the only person who might disclose the amount for the conversion project. The Sun made requests three days last week to interview Richardson. She said Friday that Richardson was in Utah and unavailable to talk about the issue.

"We will be able to discuss all this more when the president submits his 2001 budget request in February," Cutler said.

The project is integral to Paducah for environmental and financial reasons. Conversion would reduce a swelling, hazardous, outdoor inventory of more than 40,000 cylinders, some rusted and nearly 50 years old. It also would create jobs to partly offset the anticipated layoff of hundreds more employees this year as the plant struggles to compete in a glutted world market.

Various informed sources say the holdup is partly because DOE has no assurance of enough funding to keep the work moving. They also say that considering severe budget cuts within the agency, some high-level DOE bureaucrats are reluctant to spend the money.

The $373 million was set aside by 1998 legislation written by U.S. Sen. Mitch McConnell and strongly backed by Bunning and U.S. Rep. Ed Whitfield. Although the money is in a special interest-bearing Treasury fund, it must be appropriated by February 2002 or be lost to the general fund unless the deadline is extended. Adequate funding reportedly did not survive cuts by the Office of Management and Budget, which reviews funds of administrative agencies like DOE.

Richard Miller, Washington policy analyst for the plant's atomic workers' union, met Thursday night with Vice President Al Gore's staff to discuss the status of funding. He was unable to find out how much conversion money, if any, is budgeted.

"They said the appeals process between DOE and OMB respecting the budget is not over yet," Miller said. "The logjam, as I perceive it, is with OMB officials. They don't believe this is a priority."

Legislation clearly requires the administration to implement the plan by building conversion plants at Paducah and Portsmouth, Ohio, and having them running by 2004, Miller said. But OMB officials maintain their only mandate is to prepare a plan, he said.

Miller said the only spendable money available is $29 million - $24 million in DOE funds promised by Richardson and $5 million appropriated by Congress last year - and the project realistically needs $60 million to $80 million more.

"No one will bid on a contract and start work if Congress has not appropriated those funds and made them available in the event that for some reason somebody pulls the plug on this project," Miller said.

Congressional language provides for a contractor to build and operate the plant, and be paid based on units of converted material.

Lack of firm information about money has many people trying to find answers to keep the long-awaited project moving. Among those watching are aides of Bunning, McConnell, Whitfield and Gov. Paul Patton.

Bunning and McConnell declined to speculate on the status of funding, saying they are waiting to see what the Clinton budget shows.

"Last year, after intense negotiations, I secured from Secretary (Bill) Richardson an ironclad promise that he would provide funding for the conversion project," Bunning said through a statement issued by his office. "I fully expect him to keep that promise when the administration presents its budget to Congress in February."

McConnell responded similarly.

"These cylinders pose a serious health threat to the workers and community and must be cleaned up immediately," he said. "Secretary Bill Richardson promised to fund the conversion, and I expect this administration to honor its promise and provide the money to keep this project on track."

Just before Christmas, leaders from Washington, Frankfort and Paducah pressed the Clinton administration hard for the money.

The senators wrote OMB chief Jacob Lew, saying at least $60 million was needed for the next fiscal year to get the work started.

Patton flew to Washington, met with Clinton and returned encouraged. The governor said again last week that he is confident the president's budget will have plenty of money for conversion.

Miller said Gore's assistants told him Patton was "on their radar screen." If the Clinton administration doesn't produce enough money, the governor holds a trump card by having the power to declare the cylinders a hazardous waste site and fining DOE for each day it doesn't clean them up, he said.

"If the president stiffs Kentucky, the ball then shifts into the governor's court to make his counter move," Miller said.

Paducah attorney Tom Osborne was frustrated after a December visit to Washington. Immediately after the trip, he said Lew's chief assistant, Elgie Holstein Jr., was "totally unfamiliar with our

problems" and reluctant to check the status of the $60 million.

Osborne wrote Clinton asking for help. He said Thursday that he had not received a formal response, but understands that the budgeted money "is only about half what we need. The Patton administration is working on this diligently."

Jack Conway, a top Patton aide, said DOE is trying to decide whether to build one or two conversion plants. He said he believes one plant will be built, in Paducah, because that would cut the cost in half to about $200 million.

Various sources said DOE has given other reasons for the delay, including budget caps and environmental concerns. Neither is a valid excuse, Miller said.

"The front page of The Washington Post says the president is abandoning budget caps in his budget requests," Miller said Friday.

DOE reportedly wants more testing of the cylinders because some may contain traces of plutonium and other highly radioactive contaminants. That shouldn't delay startup because those contaminants would be in cylinders filled before 1980, Miller said, and the department could proceed with converting thousands of newer cylinders.

Cutler would not discuss reasons for the delay or say how much money is needed to keep conversion moving beyond this year. She said private firms expressed strong interest last year and DOE needs more time to refine the project.

"The Department of Energy and Secretary Richardson remain committed to this project," she said.

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The Paducah Sun

January 15, 2000

Digging ditched for now at DOE

By Bill Bartleman
The Paducah Sun

After just two of five trenches at the Paducah Gaseous Diffusion Plant have been dug, the U.S. Department of Justice has halted its investigation into contamination there.

The order to stop was issued Friday, the day after a fire had damaged a building containing materials used in the trenching operation. Officials said there was no connection between the fire and the delay in the investigation.

Seven agents of the federal Bureau of Alcohol, Tobacco and Firearms investigated the fire, which occurred in a metal storage building located outside the security fence and about a mile from the trenching operation.

Spokesman Don York said the cause was an electrical malfunction of a heater that ignited a nearby pile of plastic bags and cardboard boxes. "There was arcing and sparking, but ... it was completely accidental," York said Friday evening.

Bill Campbell, spokesman for U.S. Attorney Steve Reed, said the trenching was stopped for additional study to determine the best places to dig. The digging was being done around a U.S. Department of Energy landfill that was closed about five years ago.

While tests continue on material taken from the two trenches dug this week, there were indications that very little evidence was found to substantiate allegations in a lawsuit that former plant operators had falsified records about contamination and allegations about material dumped in the landfill.

The U.S. Department of Energy is paying for the trenching, which is costing about $1 million. The purpose is to decide if there is sufficient evidence of falsified records to warrant the federal government joining in the suit filed by current and former workers. The suit seeks to recover millions of dollars paid to the former operators based on performance in meeting certain levels of contamination. The former operators include Lockheed Martin Energy Systems.

A source with knowledge of the investigation said the Justice Department's decision to halt trenching was based on economics. "It is an expensive operation, and they weren't finding what they expected," the source said.

Campbell would not say what had happened between last week's start of the dig and Friday's decision to re-evaluate locations of the dig. He also would not comment when asked if the dig was yielding little useful information.

"We are going to dig five trenches in a fairly wide area, and we just want to make sure we are digging in the right place," he said. Recommendations from another geophysicist who has been hired to evaluate the site will help determine whether the digs will continue, he said.

The dig is just part of the Justice Department investigation. Officials also are reviewing plant records, interviewing current and former workers and testing contamination at other locations inside the plant.

Greg Cook - a spokesman for Bechtel Jacobs, the company hired to do the trenching - said the order to halt trenching came from Justice through the Department of Energy. "Our excavation team is on a stand-down," Cook said. "There will be no additional excavation unless we are directed to do so. We are told that (Justice) is re-evaluating what they want to do with the dig."

Cook said that in the first trench, investigators found roofing paper, metal flashing, a drum lid that appeared to come from a roofing material container, fly ash and a creek bed.

The second trench "yielded nothing but dirt and a creek bed. Based on these results, DOE asked us to stand down while (Justice) decides what to do."

Steve Wyatt, chief spokesman for DOE in Oak Ridge, Tenn., was out of the office Friday and unavailable for comment.

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The Paducah Sun

January 14, 2000

Trenching at plant to be delayed after storage facility fire

Staff report

A small fire in a storage facility at the Paducah Gaseous Diffusion Plant will briefly delay the U.S. Department of Justice's excavation of trenches north of the plant.

The fire, discovered at 6 a.m. Thursday in Building C-755-A, sent smoke that damaged sample bottles scheduled for use in the excavation, which will resume once the bottles are replaced. Five trenches are being dug around the plant so that soil samples can be taken and tested for the presence of radioactive and chemical contamination in the ground, as alleged in a lawsuit filed by three plant employees.

"Getting new sample bottles is going to create a small delay," said Greg Cook, a spokesman for Bechtel Jacobs Co. LLC, which handles the government's environmental cleanup there.

No one was in the building when the fire broke out. The United States Enrichment Corporation site fire department extinguished the fire.

"It wasn't a big fire," said Steven Wyatt, a spokesman in Oak Ridge, Tenn., for the Energy Department, which owns the 47-year-old plant. "No one was hurt. No samples were lost. But it does impact the trenching."

He said the cause was under investigation.

The fire burned a pallet of new plastic box liners and heat-warped some plastic covers on fluorescent lighting fixtures. Some plastic splash curtains were also melted, and some concrete pitting occurred. Smoke blackened most of the building's contents.

Building C-755-A, originally designed as a decontamination pad but now used as a storage facility, is located outside the plant security fence on the east side of the complex, about a mile from the trenches. The building is a permanent metal structure, similar to a two-car garage, and is used for temporary storage of various supplies and equipment.

Materials inside included a rented trailer that contained the empty sample bottles. The box liners are used to line low-level radioactive waste containers, such as those used in support of the Justice Department's excavation. To date, only two boxes have been needed for materials removed during the excavation, and loss of the box liners is not expected to cause additional delay.

A freezer containing ecological samples from routine site environmental monitoring, not related to the excavation, is also in the building. The ecological samples, including several raccoon carcasses, appeared to be unharmed, officials said.

The building also houses one large polyethylene tank of potentially contaminated water. The tank was not breached and swipe samples from the floor and other surfaces in the building were analyzed and showed no release of radioactive material.

Cook said such testing after a fire is routine at the plant, which enriches uranium for use in nuclear reactors.

Justice Department officials previously said the excavation would take two or three weeks. They

said test results should be complete by May.

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DOE decision on radioactive scrap criticized

The Paducah Sun
01/14/00 - P. 7A
Story # 2

By Duncan Mansfield
Associated Press

OAK RIDGE, Tenn.

U.S. Rep. Zach Wamp said Thursday that U.S. Energy Secretary Bill Richardson's decision to halt commercial sales of recycled metals will add years and millions of dollars to the cleanup of Oak Ridge.

"They have invested millions and millions and millions of dollars in this program, and what'd they do? They just pulled the plug on it, basically," Wamp said during a visit to the Y-12 nuclear weapons plant.

The Chattanooga Republican said Richardson, a friend and former Democratic House colleague, "caved to pressure from people who do not rely on science to make public policy decisions."

Richardson said Wednesday that he is blocking about 6,000 tons of nickel with embedded radiation from being sold as scrap from the former K-25 uranium enrichment plant in Oak Ridge, as well as about 10,000 tons of scrap at other DOE sites.

The energy secretary said he wants to wait for the Nuclear Regulatory Commission to create national safety standards for such recycled metal.

This also would give "the public an opportunity to weigh in on the development of a national policy," Richardson said, while allowing DOE time to "examine alternatives to free release."

Wamp, whose district includes the Oak Ridge complex, claimed there is no "logic, science or hard data" to support fears by environmentalists, labor unions and others about recycling Oak Ridge's radiated nickel into such consumer products as tableware and children's braces.

"If you want to measure radiation, it is in the world," Wamp said. "You cannot eliminate it no matter how hard you want to. So the question is, what is the difference between this radiation and that radiation. And the answer is, there is no difference."

Wamp estimated it will take at least 2½ years to develop national radiation recycling standards. A DOE spokesman in Washington agreed it probably will take that long.

There was no immediate impact from Richardson's announcement on the continuing cleanup of three huge buildings at the former K-25 site, which is being converted into a commercial industrial park.

British Nuclear Fuels Ltd. signed a six-year $238 million contract with DOE in 1997 to decontaminate and decommission the buildings, which together represent about half of the 13 million square feet of space at the K-25 site.

A key feature of the novel contract was giving BNFL ownership of all metals that could be recycled from the huge machines that enriched uranium for bombs and commercial reactors until the plant was shuttered in 1987.

The estimated $41 million in nickel at K-25 represented BNFL's profit.

Now BNFL and DOE will be renegotiating the contract. More compensation for BNFL seems likely.

Although none of the nickel yet has been recycled, BNFL has invested in a subsidiary, Manufacturing Sciences Corp., to do the work and sell the scrap.

"Right now there is no impact as far as job loss," BNFL spokesman Norman Hammit said of the 600 people working on the project. "We are still working out here. We are still doing what we signed a contract to do."

The Paducah Sun

January 13, 2000

Impact felt in Paducah

Conflict of interest tables plan to sell radioactive nickel

By Joe Walker
Sun Business Editor

A controversial plan to sell radioactive nickel stored at Department of Energy plants here and elsewhere is on indefinite hold after a DOE contractor was found to have a conflict of interest for helping shape safety regulations for the work while also consulting with a metals recycler.

Energy Secretary Bill Richardson announced Tuesday that no radioactive metals will be released from DOE plants until the department evaluates alternatives and the Nuclear Regulatory Commission decides whether to set national safety standards.

The decision has huge implications for the Paducah Gaseous Diffusion Plant, which has at least $37 million in scrap nickel alone. Although selling the nickel would roughly recoup an entire year's environmental cleanup costs, the state of Kentucky and citizens' groups have raised safety concerns.

Richardson's news release did not disclose that the NRC ordered Science Application International Corp. to stop work Dec. 17 because it violated conflict-of-interest guidelines while doing research to help the commission consider regulations for recycling decontaminated materials from nuclear cleanup projects.

The conflict arose from SAIC's working on a large metals recycling project by British Nuclear Fuel Inc., a DOE contractor that is cleaning up several buildings at DOE's closed uranium enrichment plant in Oak Ridge, Tenn. British Nuclear is removing equipment containing large amounts of nickel and had the option to melt and decontaminate the nickel for sale under a state of Tennessee license.

The NRC has traditionally regulated consumer products to which radiation had been intentionally and beneficially added, but in the case of scrap metal - irradiated without beneficial effect - it has deferred the safety issue to the states.

The NRC's stop-work order said SAIC had "failed to provide immediate and full disclosure" of commercial dose assessment and metal recycling work with British Nuclear. "As a result, SAIC has conflicting roles which may bias its judgment in relation to its work for the NRC," the commission said.

SAIC, a large environmental contractor with offices near the Paducah plant and many other DOE sites, has said it disputes the NRC ruling. It met a commission request to disclose any similar work regarding other NRC-licensed facilities.

The NRC has not determined if the conflict of interest will mean scrapping SAIC's work and rewriting the rules for recycling contaminated metal.

DOE announced in August 1997 that it planned to sell 6,000 tons of contaminated nickel - left over from making nuclear weapons - this year for $41 million. But there was no safety standard for the radioactive metal.

Metal and scrap industry officials fought the plan, saying they could not guarantee consumer safety. Congressional critics feared there was no way to track the metal and it could wind up in children's dental braces, silverware, auto parts and other products. Special interest groups criticized DOE for not holding public hearings or doing an environmental impact study.

In announcing the project hold, Richardson said DOE will change its contract with British Nuclear to bar selling Oak Ridge nickel.

"We also are establishing a new policy prohibiting the release of all volumetrically contaminated metals at other DOE facilities," he said.

Richardson said the action will give time for the NRC to develop standards and submit them for public comment, and for the Energy Department to look at alternatives.

Volumetric is a term that applies to contamination throughout the mass of metal rather than just surface contamination. Richardson said the policy affects about 16,000 tons of metal, including 10,000 tons at sites other than Oak Ridge. Much of the excess is at the Paducah plant, which has an estimated 9,700 tons of nickel ingots in a 25-acre scrap yard. Besides nickel that coated some of the enrichment processing equipment, the scrap includes 20 tons of stainless steel, 40 tons of copper, 3,200 tons of aluminum and 31,500 tons of iron.

The bulk of the scrap was salvaged from machinery once used to enrich uranium for use in nuclear power plants and weapons. A DOE report estimates that all the nickel can be recycled, 86 percent of the stainless steel, 66 percent of the copper, 6 percent of the iron and only six to seven tons of aluminum.

But the project has come under intense scrutiny locally as well as nationally.

Last year, the plant's citizens' advisory board passed a resolution opposing the sale of the metal, which has traces of radioactive plutonium and technetium. After state regulators questioned the project, DOE split it from a plan to clean up the "mountain" of rusted waste drums at the plant.

Among the chief critics in Congress has been Rep. John Dingell, ranking member of the House Commerce Committee. He wrote NRC Chairman Richard Meserve in December, accusing the commission of shirking its duty by deferring the scrap-metal safety issue to states instead of developing national safety standards.

Last week, Dingell sent another letter to Meserve, saying "the seriousness of this conflict of interest cannot be overstated, particularly given SAIC's interest in promulgating a rule permitting this recycling."

The letter said SAIC has sought in recent years to become "a major player" in recycling contaminated metals, and "a huge potential market" for SAIC and British Nuclear could follow the development of safety regulations.

Richardson's ban on the sale of the metal was the "correct, common-sense decision," Dingell said Wednesday in a news release. "Now the Nuclear Regulatory Commission must finally do its job or lose whatever meager credibility it has left."

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Cooperate or keep quiet? Piketon workers confused

Wednesday, January 12, 2000

Jonathan Riskind
Dispatch Washington Bureau

As federal investigators dig into allegations of health and safety problems at southern Ohio's uranium-enrichment plant, any chill in the air isn't coming just from January winds.

It stems from a pair of meetings called last Wednesday by Bechtel Jacobs, the company in charge of cleaning up the grounds at the Portsmouth Gaseous Diffusion Plant in Piketon.

About 150 employees attended, and the message many took away was to "look busy and shut your mouth," said Dan Minter, president of the Paper-Allied Chemical and Energy Workers union, which represents many of them.

Bechtel Jacobs called more meetings Friday to assure employees that they should cooperate with the investigation, and company officials said yesterday that the earlier comments were misinterpreted.

Nevertheless, some employees say the damage already has been done.

The fallout: Workers are wondering whether they should keep silent about past and current safety problems, and an outraged U.S. secretary of energy is vowing to wage an independent and credible investigation.

Minter -- who was not at the meetings but received reports from workers -- and a person who attended one of the meetings said employees were told to discuss with investigators only matters they could document or of which they had firsthand knowledge.

They also were told to inform company management about the type of information sought by investigators -- a request Bechtel Jacobs has since rescinded.

The message was delivered five days before Energy Department investigators arrived to look into whether Cold War-era plant conditions endangered workers and whether cleanup efforts are being run safely. Department officials hope to interview nearly 200 current or former employees.

The investigation will help determine whether workers exposed to radioactive contaminants such as plutonium and highly toxic chemicals such as hydrofluoric acid will be compensated for any cancers or other diseases.

Joseph Nemec, Bechtel Jacobs' president, acknowledged the concerns raised by Energy Department officials and Piketon workers, but denied any attempt to obstruct the investigation.

"Clearly, there appears to be some people involved in the first meeting that came away from it with the impression we were trying to dictate what they could do and not do," Nemec said. "That was not our intent. It was not intended to stifle employees from cooperating fully."

Jim King, the company's Portsmouth site manager, said that comments he made to workers about not speculating or going outside their areas of expertise might have been misunderstood. He said he told employees to be cooperative.

Many who attended the meetings, however, left thinking that cooperation wasn't the theme of the day, said the employee who was present, who asked not to be identified.

"I don't know how you de-chill something that's been chilled," the worker said. "Workers know what's been said. I don't know how you're going to retract it."

Secretary of Energy Bill Richardson, described as furious at Bechtel's conduct, fired off a letter to Nemec on Monday.

"I am writing to express my deep concern that . . . Bechtel Jacobs management may have discouraged workers' full and free participation in an investigation by the department's oversight team," the letter said.

"It is the department's policy, and my belief, that the independence and credibility of a comprehensive investigation are essential to the safe conduct of operations and to the protection of workers, the public and the environment."

G. Leah Dever, who oversees the plant for the Energy Department, sent a letter to Nemec and King on Monday, chiding them about the meetings. Dever also sent a memo to employees -- dated Sunday -- asking for their full cooperation.

"Workers should feel free to participate in these interviews openly," she wrote. "Any attempt to limit or restrict the conduct of these interviews will not be tolerated and will have serious consequences."

Of the about 2,400 workers at the plant, which produces commercial- grade enriched uranium for use as fuel for nuclear-power plants, Bechtel employs about 85 of its own people and about 100 subcontractors in the effort to clean up contaminated soil and buildings no longer used on the 3,700-acre grounds. The other employees work for USEC, the plant operator.

About 70 USEC employees are on temporary assignment to help with the cleanup, and some of them might have attended the meetings.

"We have encouraged our employees to be cooperative with the Department of Energy," said Elizabeth Stuckle, spokeswoman for USEC, the privatized federal corporation formerly called United States Enrichment Corp. that took over enrichment operations in 1993.

During the Cold War, the plant produced highly enriched weapons-grade uranium. In addition to reportedly shoddy working conditions that for years regularly exposed workers to uranium and highly toxic chemicals, deadly plutonium and related highly radioactive materials were introduced into the plant -- apparently during the 1950s, '60s and '70s as part of a government attempt to recycle spent nuclear-reactor fuel.

Many of the current Bechtel Jacobs workers worked in the enrichment plant 20-30 years ago, said Minter, the union chief. Their institutional knowledge can be culled to help determine what happened back then, he said.

The investigation also is meant to scrutinize the safety of Bechtel Jacobs' cleanup effort. The company's cleanup operations at a sister plant in Paducah, Ky., were criticized during a similar Energy Department investigation of that facility.

Bechtel Jacobs officials told The Dispatch recently that they were confident the Piketon investigation would reveal no significant problems. King, the company's site manager, said he stressed to workers that anything they say about past events at the plant is between them and the investigators.

But Richard Miller, a Washington-based analyst for Minter's union, said Bechtel has sent the wrong signals just as the Energy Department is trying to rectify past misdeeds.

"You hope it doesn't chill people's willingness to be candid because the signal had been sent up to this point that it's OK to talk about what had historically been forbidden," Miller said. "And the information that's going to be developed in this investigation is so central to whether or not there will be a fair and equitable remedy for the workers that you hate to see defensive managers try to cover up sins of the past."

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The Paducah Sun

January 8, 2000

Justice officials dig for DOE truth

By Bill Bartleman
The Paducah Sun

U.S. Department of Justice officials hope to decide by May if they will join in a federal lawsuit alleging fraud by past operators of the Paducah Gaseous Diffusion Plant.

Steve Reed, U.S. attorney for Kentucky's Western District, visited the plant Friday to watch as employees of Bechtel Jacobs Co. began digging a trench just a few yards from a landfill that was leaking "black ooze" last summer.

Reed said five trenches will be dug around the perimeter so soil samples can be taken and tested for the presence of radioactive and chemical contamination.

Reed said he wants to determine if any previously unreported waste and contamination was placed in the U.S. Department of Energy landfill that closed five years ago.

A whistle-blower's lawsuit filed by current and former employees alleges that contaminated material was illegally placed in the landfill by former operators, and the operators lied about contamination to earn performance bonuses worth millions of dollars.

The suit claims the contamination has caused illnesses for workers and nearby residents, and that the contamination is spreading from the plant in groundwater, air and the soil.

If the Justice Department determines from the tests that the suit has merit, it would become a plaintiff and seek millions of dollars in refunds from former operators, including Lockheed Martin Corp. The current and former employees who filed the original action would receive up to 30 percent of the amount awarded in the suit.

"What you see here is digging for the truth," Reed said just moments after the digging began at 2:31 p.m. "We will take the truth ... and evidence and go wherever it requires us to go."

He promised a thorough investigation. U.S. District Judge Thomas Russell has given the Department of Justice until May to determine if it will get involved. Reed said he hopes that testing and other aspects of the investigation are completed by then. If not, he said, they'll ask Russell for more time.

Digging the five trenches is a slow process that will take at least three weeks. Workers will test each bucket of dirt removed from the trench.

After digging down 10 to 15 feet, they will take soil samples that Department of Justice officials will share with DOE, the state Natural Resources Cabinet and Lockheed Martin. The samples will then be tested at different labs and compared. Reed said he didn't know how long it would take to get the test results.

The cost of the dig and testing is estimated at $1 million and is being paid by the U.S. Department of Energy from a special fund. DOE officials said it was not being diverted from cleanup funds allocated for the Paducah plant.

DOE officials last summer investigated the source of the leaking black ooze and said it appeared to

be a combination of roofing materials and old oil.

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The Paducah Sun

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NRC not expanding controls

By Joe Walker
Sun Business Editor

Calling the Paducah Gaseous Diffusion Plant safe, Nuclear Regulatory Commission Chairman Richard Meserve says his agency is ready to regulate historically contaminated areas of the plant but isn't asking for the job.

"We have not been talking with Congress about the issue," said Meserve, who became chairman of the NRC in October. "We do have a close and cooperative relationship with the Department of Energy."

Meserve spoke with reporters after a plant tour that lasted more than three hours. The plant has drawn massive publicity since two federal lawsuits were filed last year alleging that past DOE contractors covertly poisoned workers and the public.

He said his visit was coincidental to U.S. Attorney Steven Reed's trip to the plant to oversee the start of soil sampling for a Justice Department probe into the lawsuit allegations. Meserve said his trip had been planned for months as part of an effort to see NRC-regulated facilities.

On Thursday, Meserve visited the Honeywell (formerly Allied Signal) plant in Metropolis, Ill. Honeywell makes uranium hexafluoride, which the Paducah plant enriches for use in nuclear fuel.

The regulatory framework at Paducah is complex because DOE owns the huge plant and regulates areas of past contamination. Active production areas of the facility, leased and operated by USEC Inc., are overseen by NRC.

Two months ago, NRC Commissioner Jeffrey Merrifield toured the plant and said NRC inspectors stationed there were frustrated at having authority over worker safety issues in some areas, but not others. He said his agency could regulate DOE parts of the plant cost-efficiently, but that would require an act of Congress.

Meserve said Friday that although NRC has undertaken "pilot projects" to better understand the job of regulating DOE areas, it is not pushing the issue because DOE has said it wants to continue as environmental regulator.

Overlapping of DOE and NRC jurisdiction came to a head by stalling a project to increase the earthquake resistance of production buildings whose piping systems are too stiff. USEC wrote NRC saying it was slow to finish the last 25 percent of the work because it conflicted with some DOE radioactive waste storage areas.

"Each task implicates the other," Meserve said of the problem, noting that USEC is preparing a schedule to complete the work, which is an NRC nuclear safety issue. "We intend for it to get done with all deliberate speed."

USEC also is planning to get the plant certified by NRC to enrich uranium to a level suitable for use as nuclear fuel. That would make Paducah independent of its sister plant near Portsmouth, Ohio, where Paducah sends product for completed enrichment to nuclear fuel standards. Because of market trends and having a glut of uranium from Russian nuclear warheads, USEC is selling enough product to justify keeping only one plant open, critics say.

Meserve said USEC's push to complete the increased enrichment certification and the seismic upgrade are unrelated because the first is business-driven and the second is compliance-driven.

Although NRC has issued more than 100 violations against USEC since 1993, many of those were relatively minor and suggest progress, Merrifield said during his earlier visit. Since then, the agency proposed an $88,000 fine after finding that USEC discriminated against a manager by demoting him in August 1998 because he raised safety issues at the plant.

Although USEC claimed the transfer was based on job performance, an investigation and subsequent information led the NRC to determine that the transfer was based partly on the man's raising concerns about quality assurance. USEC told the NRC in October that it was taking extensive corrective action to help managers address employee safety concerns and encourage a "nuclear safety conscious" work environment, the NRC said.

USEC has until Jan. 19 to pay the fine or challenge it. Meserve said the firm has not told the NRC of its decision.

The action followed, but was unrelated to, an NRC investigation last fall into radiation protection programs at the plant. The NRC probe was in response to a so-called whistle-blower's lawsuit by three employees alleging, among other things, unsafe working conditions.

Despite the more than 100 violations, Meserve said Friday that the plant is run safely and "generally in accordance" with NRC guidelines.

"We have found that there is a good radiation-control program at this site," he said. "It is sufficient to protect the workers and the public."

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