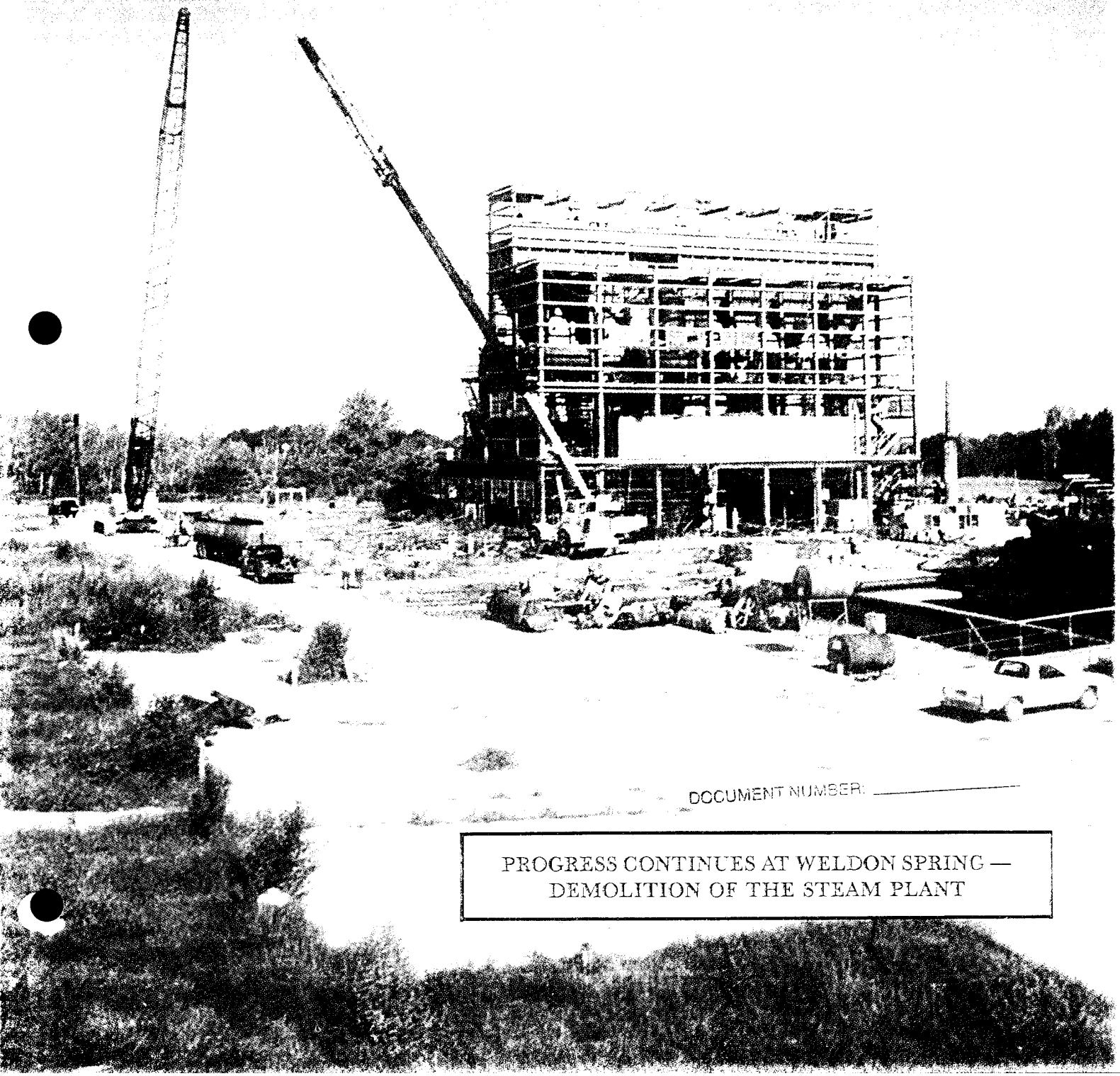
WSSRAP

WELDON SPRING SITE REMEDIAL ACTION PROJECT

UPDATE

January, 1990



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PROGRESS CONTINUES AT WELDON SPRING — DEMOLITION OF THE STEAM PLANT

Health and Safety for Francis Howell High School is a Major WSSRAP Responsibility

The top priority of the U. S. Department of Energy at the Weldon Spring Site Remedial Action Project is to protect public health and safety, particularly the Francis Howell High School and the administrative offices of the Francis Howell School District.

The district is the largest of five school districts in St. Charles County in terms of both enrollment and area served. The district has 13,000 students and encompasses 150 square miles. The high school — one of two in the district — has 2,000 students.

To check air quality from the Weldon Spring Site, the project maintains an extensive series of controls. These are three monitoring stations between the plant and school property. There are two airborne dust monitors at the north perimeter of the chemical plant site and one at the east perimeter.

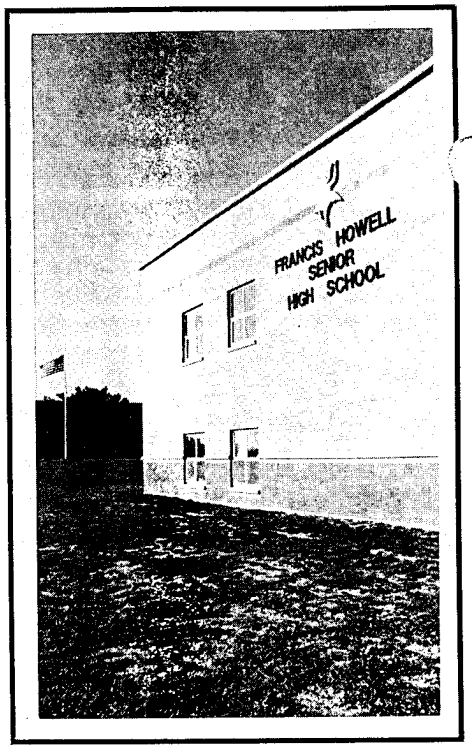
In addition, there are three radon gas monitors and gamma radiation detectors at the north perimeter of the chemical plant site. To date, nothing above normal background levels of radiation has been detected at these locations. Also, there is a monitoring station at the high school which continuously measures airborne particles of radon gas and gamma radiation. According to Steve Green, WSSRAP's Radiation Protection Manager, the instrumentation and analytical methods used are sensitive enough to measure any changes above natural background radiation levels.

"Water supplied to the high school from the St. Charles County wellfield is sampled monthly," Mr. Green says. "No measured radiation level or radionuclide concentration in air or water has ever exceeded natural normal background radioactivity at the school."

" . . . the school district has developed a good working relationship with the Project Management Contractor regarding the Weldon Spring site."

At the request of Dr. Wanda J. McDaniel, Superintendent of Schools, the Department of Energy provided funds to allow the school district to hire a technical consultant for independent overview and assessment of activities at the Weldon Spring Site.

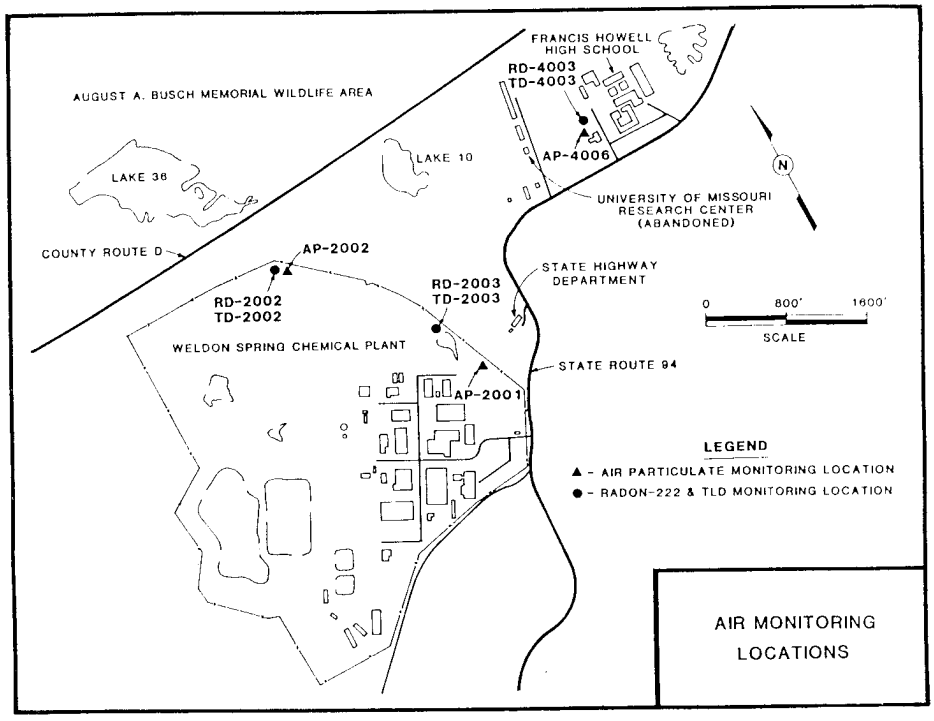
The school's independent consultant provides continuous oversight and independent assessment of monitoring procedures and results, reviews site safety and health procedures, environmental monitoring plans and reports, emergency plans and communicates technical information to the school district.



The technical consultant contract was awarded to John Mathes & Associates, Inc., which identified Bill R. Thomas to serve as principal reviewer. Mr. Thomas is the Director of Corporate Health and Safety Department for Mathes. He has previous experience evaluating specific projects being performed by the Department of Energy. He is currently a member of the Advisory Safety Committee for Martin Marietta Energy Systems, which is responsible for the operation of the gaseous diffusion process used to enrich uranium.

Mr. Thomas has also served as a Task Manager during the remedial investigation at Fernald Feed Materials Production Center which is operated by Westinghouse Materials Company of Ohio for the Department of Energy. Fernald uses a process to manufacture uranium metals similar to the process previously used at Weldon Spring.

Mr. Thomas says evaluation for the school district began on June 2 with a review of the many reports issued previously. "These reports," he says, "described different aspects of the environmental monitoring program at WSSRAP, particularly the results of



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monitoring performed off-site near the school properties."

Mr. Thomas says the school district understands that the remedial activities at the Weldon Spring site are complex and involve the coordination of many departments and agencies to safely clean up contaminated areas and stabilize and dispose of the waste.

"The school district is kept up-to-date by the Department of Energy concerning the status of clean-up efforts, allowing them to make informed decisions," he says. "The use of an environmental consultant is one way that the school district can obtain an independent, third party opinion concerning the activities at WSSRAP and the impact to the school."

Dr. John R. Oldani, Deputy Superintendent of the Francis Howell School District, is closely involved with the environmental monitoring program. He says the school district has developed a good working relationship with the DOE and the Project Management Contractor regarding the Weldon Spring Site.

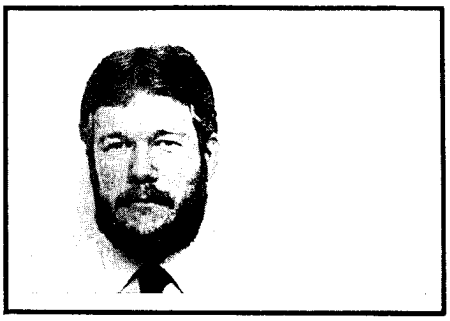
"The district's consultant Bill Thomas has been included in briefings at the Weldon Spring Site and has been given access to information regarding the site and its program," Dr. Oldani says. "MK-Ferguson specifically and the Weldon Spring Chemical site personnel in general — and the Department of Energy — have been cooperative with the district and its consultant."

Dr. Oldani adds, "To date, the working relationship has proven to be a positive one for the Francis Howell School District in that the district has been informed of activities at the site and a strong effort has been made to assure the safeguarding of district employees and students."

PIP Awards

Productivity Improvement Awards have been presented to 46 WSSRAP personnel. Their suggestions resulted in over $634,000 savings to the project.

Kenneth A. Meyer, Jr.



Kenneth A. Meyer, Jr., has been appointed Environmental Protection Section Manager according to an announcement by Project Director Robert Hlavacek.

A lifelong resident of western St. Charles County, Mr. Meyer is responsible for the routine monitoring and environmental protection activities performed at the Weldon Spring Site.

He has worked at the Site since 1986 and helped design and perform site characterization activities. Mr. Meyer's previous experience includes site investigations at five Superfund Sites and numerous other hazardous waste facilities.

Mr. Meyer received a B. S. degree in Geological Engineering from the University of Missouri-Rolla in 1984 and resides in Defiance.

New Radon Gas Monitors for Increased Protection

New radon gas monitors capable of measuring gas concentrations on a continuous basis have been ordered. They will be installed at the Francis Howell High School and at the Weldon Spring Site for increased monitoring protection.

Known as the RGA-40, the device is controlled by a computer which also records radon gas concentration measurements that can be taken as frequently as one reading per minute. The monitor has an internal time clock that accurately records the time a sample is taken. The new system will replace existing monitors that make less frequent readings and must be checked visually.

Status of Quarry Water Treatment Plant

The last issue of WSSRAP Update reported plans to treat contaminated water in the Weldon Spring quarry as the initial activity that will lead to the safe removal and proper disposal of the bulk waste dumped there years ago.

Public hearings on this proposal were held in February to obtain input from the public and special interest groups. Following these procedures, a subcontract was awarded to Hydro-Pure Systems Company of Denville, N.J., to design and construct the facility.

The Coalition for the Environment appealed the plan. Among the issues raised were requests for a warning sign near the treated water outflow on the bank of the Missouri River, additional samplings of sediment and water downstream from the outflow and suspension of discharge during high or low water periods.

Steve McCracken, DOE's Deputy Project Manager for WSSRAP, reports that informal meetings with the Coalition appear to have resolved most of the issues and the meetings are going well.

"No delay from these issues is expected," Mr. McCracken says. "Funds appropriated by Congress for fiscal year 1990 have not allowed us to begin construction of the water treatment plant this year. However, DOE is working to increase funds for this important project."

"The Site will continue the extensive monitoring program that is currently in place and which assures that the St. Charles County well field water is safe to drink."

Mr. McCracken adds, "the site will continue the extensive monitoring program that is currently in place and which assures that the St. Charles County well field water is safe to drink."

U. S. Department of Energy Five-Year Plan Gives High Priority to WSSRAP Funding

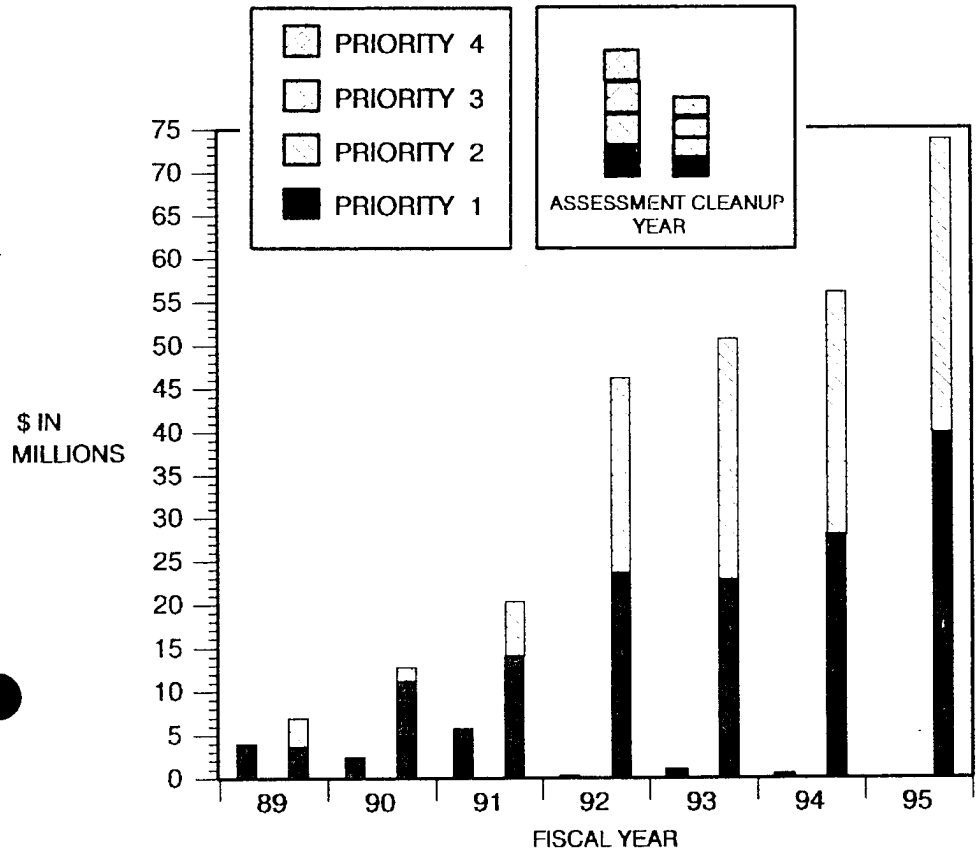
The United States Department of Energy (DOE) has released its Five Year Plan for Environmental Restoration and Waste Management for the entire country. DOE views the minimization, cleanup and management of waste materials generated from its operations to be one of its most challenging problems.

WSSRAP fares quite well in the Five Year Plan. For fiscal years 1991 through 1995, all funding for remedial action is slated for either priority level 1 or priority level 2 on a scale of 4 levels. Although funding must be set each year by the Congress, prioritizing for the Weldon Spring Site calls for increases each year in the priority 1 level with substantial increases planned for fiscal years 1992, 1993, 1994 and 1995.

The Plan's foreword states: "It is DOE's policy that full compliance with the letter and spirit of environmental laws, regulations and requirements is an integral part of operating DOE facilities. The fundamental goal is to ensure that risks to human health and safety and to the environment posed by the Department's past, present and future operations are either eliminated or reduced to prescribed, safe levels. DOE is committed to the goal of cleanup of all its sites within 30 years."

In describing the purpose and scope of the Five Year Plan, DOE pledges its commitment to an open and participatory process for developing a national priority system for expenditure of funds. "This system will be based on scientific principles and risk reduction in terms that are understandable to the public," the Plan asserts, adding that it will be revised annually with a five-year planning horizon.

DOE FUNDING BY PRIORITY LEVEL FOR WSSRAP



Pro

Two major buildings used by the Atomic Energy Commission from 1957 to 1966 to process uranium were dismantled during 1989.

The structures were the administration building, which was demolished during the spring and early summer, and the steam plant, which is scheduled to be completely dismantled shortly.

Office Building

Building 409, the two-story administration building, was designed to house 250 office workers. The framework consisted of structural steel and concrete with exterior walls of masonry blocks. The interior walls were constructed of sheet metal panels.

Prior to demolition, surveys for chemical and radiological contamination revealed detectable concentrations of polychlorinated biphenyls (PCBs) in some floor a[illegible] and low level radioactive reading[illegible] the administration building roof. In addition, there was an asbestos-related health hazard due to damage to protective coverings over asbestos insulation.

Because of the substantial deterioration of the building during the years of disuse, the U.S. Department of Energy, in cooperation with the State of Missouri and EPA, approved the dismantling of the building. As standard materials were used in the construction, most of the debris was removed for salvage and recycling.

Chemical Plant Site Manager Lacy Key was in charge of overseeing 409's demolition. "After removing the contamination inside and outside, the building came down quickly," he says. "We used a claw on a back hoe to tear out walls and panels. During demolition activities a fire hose was used to spray water on the operation to control dust."

gress Continues at Weldon Spring

ministration Building and Steam Plant Dismantled

uncontaminated building materials were disposed of off-site. PCB contaminated materials were shipped to an approved treatment/disposal facility where they were incinerated and roofing materials with low level radiological contamination were stored safely on site.

Steam Plant

The steam plant, known as Building 401, was a six-story structure, with two 125 foot steel stacks. The plant produced steam with three external coal-fired boilers as well as emergency electric power, refrigerated brine, soft water and compressed air.

Built of reinforced concrete and structural steel with corrugated asbestos cement siding, the building contained approximately 396,000 cubic feet of space. Yard structures included coal and ash handling equipment, an incinerator, jib crane hoist and other ve-ground structures.

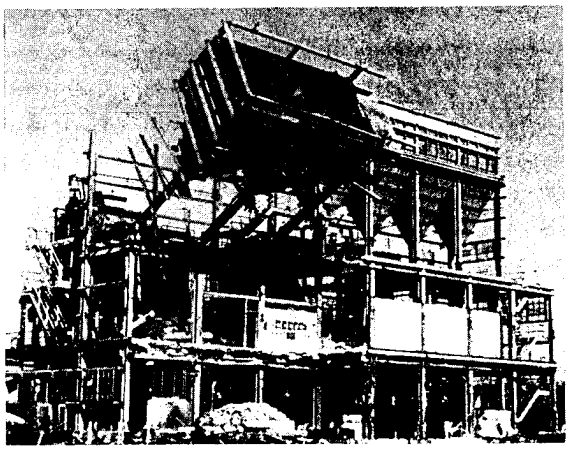
As with the administrative building, surveys revealed radioactive contaminants in the tar and gravel layer of the roof, requiring the roofing material to be safely stored on site.

Dismantling of both buildings was handled in full compliance with all applicable regulations and procedures and each truckload of material leaving the site was radiologically surveyed prior to release.

Ken Greenwell, Construction Management and Operations Manager, reports the steam plant was intact except for deterioration of asbestos insulation on some overhead piping.

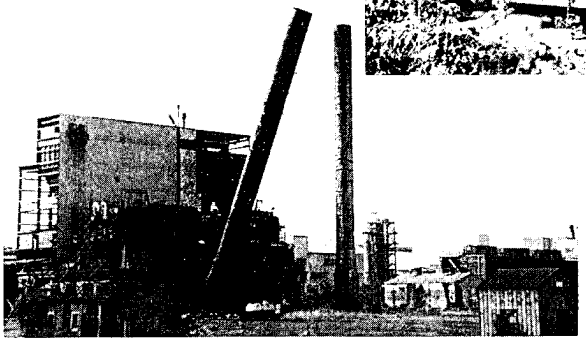
"Interior air monitoring told us that concentrations of asbestos fibers did not pose significant inhalation haz- " Mr. Greenwell says, "but further deterioration would present an increasing potential public health problem as long as the building stood there."

With the exception of the roofing material and some interior equipment, which will be stored safely on site, all materials from the steam plant are being removed from Weldon Spring for reclamation, salvage or disposal in permitted sanitary landfills.



Removing Coal Hoppers
Demolition of the Steam Plant—as with every building being removed—is in accordance with all safety requirements and practices.

Like Felling Trees
To remove the two 125 ft. steel stacks, large, wedge shaped cuts were made at the base, followed by a back cut.



Task Made Easy
The use of a claw on a back hoe made easy work of removing walls and panels of the Administration Building.

Weldon Spring "Outreach" Keeps Community Groups Informed

The United States Department of Energy (DOE) at the Weldon Spring Site Remedial Action Project is keeping the public and community organizations informed through a proactive program of briefings, tours and presentations.

Individuals and groups are invited to contact the Community Relations office for information, briefings, speakers and tours. Telephone: 441-8086

During the year, 27 scheduled meetings plus many unscheduled sessions were handled to acquaint the public with plans and progress underway at the site.

Scheduled meetings in 1989 include the following:

January 6, Congressman Harold Volkmer and staff-briefing and tour

February 2, Planning Consultants for Town of Weldon Spring-meeting

February 13/14, Public Meetings with Missouri Department of Natural Resources regarding plans to discharge treated water into the Missouri River

March 16, St. Charles County Commissioners-briefing

March 22, Missouri Public Interest Research Group (MOPIRG)-briefing

March 29, Francis Howell High School vocational agriculture students-discussion

May 3, U.S. Army-discussion

May 16, Fort Zumwalt High School students-briefing

May 18, Student volunteers of MOPIRG-briefing and tour

May 24, St. Charles Countians Against Hazardous Waste-presentation

May 26, Francis Howell High School chemistry class-discussion

June 6, Francis Howell High School American History class-presentation

June 6, EPA's Remedial Construction Subcontractors-briefing and tour

August 31, Coalition for the Environment-quarry tour and meeting

September 11, Weldon Spring Heights Homeowners' Association-briefing

September 18, St. Charles County members of Missouri Legislature-briefing and tour

September 22, University of Missouri at Rolla environmental engineering students-briefing and tour

October 6, Missouri Society for Professional Sanitarians Conference-presentation

October 7, St. Louis Chapter, Health Physics Society-briefing and tour

October 31, St. Charles Countians Against Hazardous Waste-presentation

November 1, Francis Howell School District administrators-presentation

November 8, University City Rotary Club-presentation

November 10, Geological Society of America-briefing and tour

November 29, Environmental Technologies Committee-presentation

November 30, Coalition for the Environment-meeting

December 12, Cogressional Aides-briefing

Site Familiarization for Cottleville Fire Department

On September 27, 28, and 29, officers and firefighters from the Cottleville Community Fire Protection District visited WSSRAP for training and site familiarization.

WSSRAP Safety Manager, John Langford, who conducted the briefings, says the Occupational Safety and Health Act (OSHA) governing safety and health at hazardous waste sites requires appropriate training for outside emergency services personnel.

"The visits by Cottleville fire fighters were the first in what will become regular training programs for our local emergency services," Mr. Langford says.

The attending crews were provided with a site familiarization tour, a discussion of the potential fire and rescue problems here, and a detailed pre-fire plan for buildings still in use.

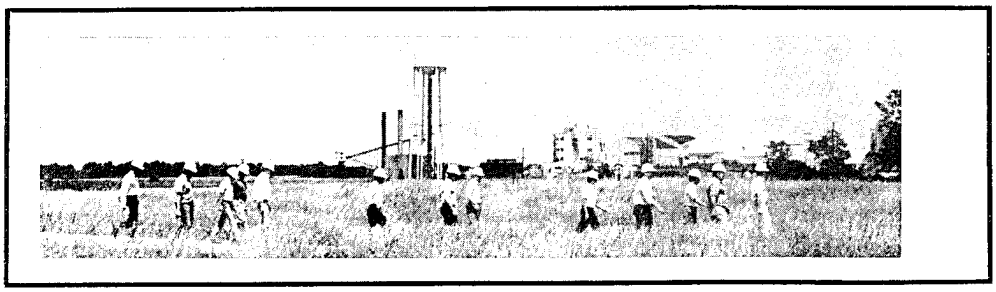
"We also discussed structural problems, such as holes in the roofs of some of the buildings," Mr. Langford says. "And we indicated where fire fighting water is available as well as what water should not be used."

Mr. Langford intends to invite the firefighters back for the National Fire Protection Association Hazardous Materials Spill Response Course.

The Department of Energy invites interested groups to contact the Community Relations office for information, briefings, speakers and tours. Telephone: 441-8086.

EPA Contractor Tour

Tour groups are welcome at WSSRAP. This group of EPA contractors visited the Site on June 6.



Project Substantially Reduces Uranium Concentrations in Surface Water Runoff

Construction of a diversion dike and channel system to divert surface water runoff around the site's Ash Pond has produced better than anticipated results in reducing uranium concentrations in surface water leaving the site.

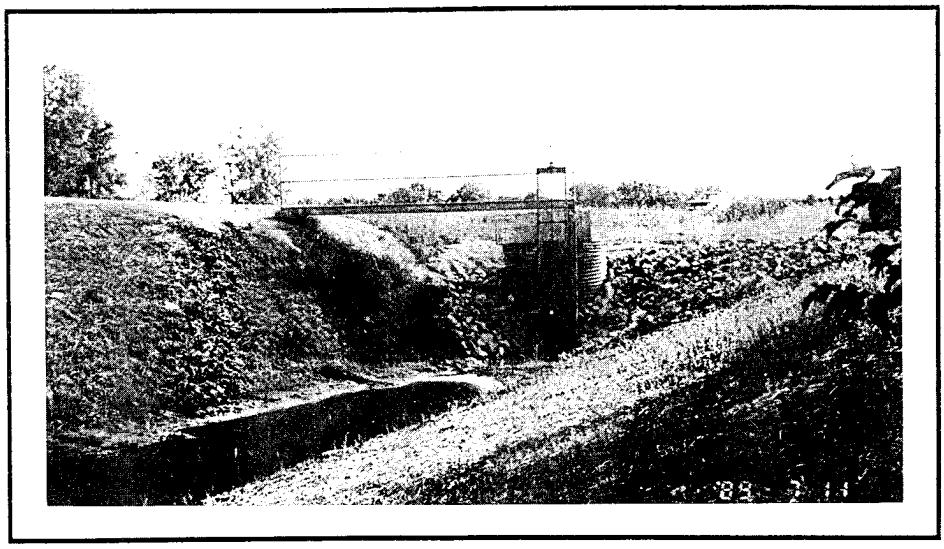
Completed this spring, the diversion project is designed to limit surface water flow over contaminated areas.

The main source of radioactive contamination in the Ash Pond is the South Dump in the pond's watershed where contaminated materials were burned and disposed of during the operation of the uranium processing plant and where the Army decontaminated materials after the plant had closed.

Mark Lusk, WSSRAP Environmental Scientist who evaluated the effectiveness of the Ash Pond project, says the dike has eliminated most of the contamination which previously left the site after flowing through the Ash Pond.

"Water quality monitoring before and after completion of the project shows average uranium concentrations in water leaving the site have dropped substantially," Mr. Lusk says. "The reduction is more than 90 percent."

Ash Pond Diversion Dike Reduces Contamination



As migration of radioactive and chemical contaminants from the Weldon Spring site is most likely to occur through rainwater and snow melt runoff, this dike was constructed to divert the flow around the contaminated Ash Pond. With limited runoff water entering the pond, chances of its overflowing are minimized.

QUARRY PIPELINE PLAN MAY PROTECT SIGNIFICANT ARCHAEOLOGICAL SITE

Plans to remove water from the Weldon Spring quarry so as to dispose of the bulk waste stored there may result in placing part of the quarry site on the National Register of Historic Places.

As part of the project assessment, Dr. Gary Rex Walters was retained by the Department of Energy to survey the area for significant archaeological material. The study verified that a series of Indian grave sites exist adjacent to the quarry.

Dr. Walters says these grave sites date to the Middle Woodland period (500 B.C. to 500 A.D.). "In spite of their once great numbers," he says, "these types of sites have not been studied extensively and the mortuary practices, therefore, are not well understood."

Placing the sites on the National Register will provide for their future protection and/or scientific excavation.

Ninety-One Wells Monitor Possible Exposure

Sampling and maintenance of 91 monitoring wells represent part of WSSRAP's continuing progress dedicated to protecting the public and environment from possible exposure to chemical and radioactive materials from the former national defense operations.

Fifty-nine wells at the chemical plant and raffinate pits are routinely sampled. Thirty-two monitoring wells at the Weldon Spring Quarry are sampled, as well as the production wells at the St. Charles County wellfield.

Ken Meyer, WSSRAP Environmental Protection Manager, says the wells were installed as a result of contamination assessments conducted since 1986.

In addition to groundwater monitoring, the environmental monitoring program includes surface water monitoring at 38 locations to check existing or potential contamination in streams, springs and seeps. Twenty-four locations around the plant pits plus 14 locations at the quarry are routinely monitored.

"We have located the contaminated areas and now monitor for changes or off-site migration of contamination," Mr. Meyer says.

Project Award for Support of Small Businesses

Robert Hlavacek, left, WSSRAP Project Director, received an award for Meritorious Support of the Small and Disadvantaged Business Program from Joe LaGrone, Oak Ridge Operations Manager for the Department of Energy.

MK-Ferguson, the Project Management Contractor, contracted 47 percent with small businesses and 21 percent with small, disadvantaged businesses during 1988.

OSHA Specialist Added to Doe Staff

Joe Enright

A new addition to the DOE personnel roster: Joseph Enright, Safety and Occupational Health Manager, will come to Weldon Spring in the near future from the St. Louis regional office of the Occupational Safety and Health Administration (OSHA). He has been a Safety Specialist with OSHA since 1977.

In addition to his OSHA responsibilities, Mr. Enright has been adjunct instructor at Central Missouri State University at Warrensburg where he teaches OSHA General Industrial Standards and Safety Technology to Fire and Safety personnel. Mr. Enright has a B. S. degree from Oklahoma State University at Stillwater and an M. S. degree from Central Missouri State.

Barbara Broomfield

The Regulatory Compliance Department has appointed Barbara Broomfield Manager of Remedial Investigation and Feasibility Studies. She is responsible for overall project planning, coordination of resources, technical and regulatory oversight specifically for the remedial investigation, risk assessment and feasibility study tasks. She came to Weldon Spring last year as the site feasibility study supervisor.

Ms. Broomfield began her career at Argonne National Laboratory where she worked for seven years, transferring in 1984 to the Academy of Natural Resources where she was Director of Research for the Environmental Assessment Council. In 1986 she joined Idaho National Engineering Laboratory as Senior Scientist.

Ms. Broomfield has a B.S. degree in physics, summa cum laude, from New York Institute of Technology and an M.S. degree in Environmental Science from Rensselaer Polytechnic Institute.

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