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Contaminated communities remain; [FINAL Edition]

Peter Eisler. **USA TODAY.** McLean, Va.: Sep 8, 2000. pg. 04.A

Subjects:	Series & special reports, Environmental cleanup, Pollution, Radioactive wastes, Environmental impact
Locations:	United States, US
Author(s):	Peter Eisler
Document types:	News
Section:	*NEWS*
Publication title:	USA TODAY. McLean, Va.: Sep 8, 2000. pg. 04.A
Source type:	Newspaper
ISSN/ISBN:	07347456
ProQuest document ID:	59735331
Text Word Count	4459
Document URL:	http://proquest.umi.com/pqdweb?did=59735331&sid=3&Fmt=3&clientId=72171&RQT=309&VName=PQD

Abstract (Document Summary)

GRAPHICS,b/w,USA TODAY(Maps); PHOTO,b/w,Robert Del Tredici; PHOTOS,b/ w,Jason Cohn for USA TODAY (3); PHOTO,b/w,[Joseph Krall]; Caption: Vitro Manufacturing: It took $40 million in state and federal funds to clean this site and nearby areas in Canonsburg, Pa., which were contaminated by radioactive wastes from uranium processing. Caution: Stan Luginski, left, Joseph Krall and [Ed Progar] at Vitro. Says Krall, "They used to do (water) samples from the creek . . . and they would tell us to make sure to take the samples upstream, above where they dumped everything." Cleanup: The federal government excavates 2 feet of soil from the yard of Joseph Krall, near the contaminated Vitro Manufacturing property. Workers also replaced Krall's garage roof because it had been built out of contaminated tank staves from Vitro uranium processing vats. Vitro worker: Bill Progar, who with his brother Ed worked at the site, holds his Vitro identification badge. Vitro processed thousands of tons a year of radioactive uranium compounds for the weapons program. Closed in December 1985: A stone marker notes that 266,000 tons of radioactive waste is buried inside the fenced Vitro property.

Full Text (4459 words)

Poisoned workers & poisoned places; Federal programs set up to deal with waste from nuclear arms production have not addressed all the damage

Private companies in dozens of communities across the country pumped radioactive and toxic waste into the local air, water and soil while doing secret work for the U.S. nuclear weapons program during the Cold War. In some cases, contamination risks persist even now, hidden from neighbors who ha've been left uninformed for 50 years about dangerous work done in their backyards.

The hundreds of commercial plants, mills and shops hired by the government to help build America's early nuclear arsenal in the 1940s and '50s often lacked the knowledge or ability to safely handle the poisonous byproducts of their work. Federal officials knew of the problems, but reports raising public health concerns were classified and buried in government vaults.

Some sites remain contaminated, the damage unpublicized and unaddressed by federal programs that were set up to deal with waste from nuclear arms production.

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"People have a right to be informed about what went on in their communities, to understand what the potential risks may be," says Susan Gordon of the Alliance for Nuclear Accountability, a coalition of citizen watchdog groups. "We need to know a lot more about these places in terms of monitoring (contamination), health concerns, etc."

A USA TODAY investigation found that private facilities used to process uranium, thorium, polonium, beryllium and other radioactive and toxic substances for the nuclear weapons program often caused serious and lasting environmental harm.

The contracting, which ran mainly from the early '40s to the mid- '50s, was done nationwide, but mostly in New England, New York, New Jersey, Pennsylvania, Ohio, Illinois and Michigan. Many of the companies did limited work and posed little if any ecological risk. But dozens of others handled vast amounts of hazardous material and caused substantial contamination.

USA TODAY visited 10 states, interviewed scores of people and reviewed more than 100,000 pages of declassified federal documents on the operations of companies secretly employed in nuclear weapons work. Thursday, the workers' stories were told. This story looks at the environmental consequences from the nuclear weapons work. Key findings:

* Long-classified safety studies done at dozens of private contracting sites show that dust and ash laced with radiation or toxins frequently drifted into adjacent neighborhoods from exhaust stacks and waste-burning pits. Similarly, contaminated sludge poured into waterways, lagoons and open trenches. In most cases, the government's incessant hunger for nuclear weapons left little time or money for safely disposing hazardous wastes.

* Contamination left at the sites by commercial facilities employed in weapons work often was not contained or cleaned up. In dozens of cases, environmental hazards persisted for decades before being cleaned up by federal programs set up in the '70s and '80s to remediate pollution from nuclear weapons production. Some sites remain contaminated; some have never been checked thoroughly for radioactive or toxic waste.

* Many communities were not told of the risky weapons work done by their local businesses. Federal reports that documented radioactive and toxic releases by private contractors were shared only with executives at the companies involved, even when operations were known to be putting neighbors at risk. The government has never provided a public accounting of commercial facilities hired for nuclear weapons work and the jobs they did.

Federal officials who oversaw the contracting "never really addressed the radioactive (and toxic) waste," says Arthur Piccot, 81, a health physicist with the weapons program in those days. "Now it's a tremendous problem at a lot of these places. But we didn't think too much about it then. We didn't know it would be such a problem."

As environmental threats at many sites became increasingly clear, the long-term risks were seen as subordinate to the immediate demand for expanding the nation's nuclear arsenal. "Health issues could be overridden by management," Piccot says. "There was a war on. That's the way they decided to do it, period."

Most weapons work at private facilities ended by the late '50s, when it moved to big, new government complexes. No one can say whether the radioactive and toxic waste that was left behind made people sick.

Virtually no medical study has been done on people who lived -- or still live -- near even the messiest of the old contracting operations.

Yet the government has sponsored all sorts of epidemiological research in communities around the federal plants that took over the work. In some cases, researchers found increased rates of cancer, kidney ailments and heart and lung disease among people in the surrounding areas.

"It could be very worthwhile to do some mortality and cancer- incidence studies" in places where private companies did nuclear weapons work, says Evelyn Talbott, a University of Pittsburgh professor who studies the health effects of radiation.

"You'd at least be able to get some information about what the (public) risk is," Talbott says. "You'd be able to tell people if they have a higher than normal risk of becoming ill."

Contamination questions

No one really knows how much radioactive waste remains at the site of the former Blockson Chemical Co. in Joliet, Ill., and that could be a problem.

In 1951, the Block brothers, who took over their father's business in the '30s and renamed it accordingly, signed a secret federal contract to set up a plant to extract uranium from phosphate ore that the company processed for commercial use. In the next decade the plant, bought along the way by Olin Mathieson Chemical Corp., produced about 2 million pounds of radioactive uranium concentrates for the nuclear weapons program.

Yet state officials had no record of the work until 1995 -- four decades after the fact. Even now, they know just enough to be concerned.

"It's unclear whether there's (still) any contamination there," says Richard Allen of the Illinois Department of Nuclear Safety.

A survey done in 1977 by the federal government's Formerly Utilized Sites Remedial Action Program (FUSRAP) found dozens of places where uranium and radium contamination in the Blockson plant and surrounding soil exceeded federal limits. But officials in the program, set up a few years earlier to examine environmental hazards at old weapons-making sites, deemed the site ineligible for federal cleanup. They cited a lack of congressional authority to deal with waste that could not be pegged specifically to arms production.

"It cannot be determined whether (contamination) was the result of uranium recovery activities or of the phosphate operations" run for commercial purposes, the FUSRAP report said. "Also, because of the type, location and configuration of the contamination, the potential for exposure and, consequently, the (health) risks associated with use of the site, (are) very low."

Eighteen years later, in 1995, the state received a copy of the report.

"They kind of dropped it in (our) lap," Allen says. "This is a federal responsibility, and a letter from them saying they don't think it's a federal responsibility just doesn't do any good."

It's possible, he says, that Olin might have cleaned up the site, but the state has not been able to find or obtain any documentation on it.

"With no disturbance of the area, we don't have a problem," says Clarence Smith of the state EPA, which was unaware that any weapons work was done at Blockson until informed by a reporter. "Once you start disturbing it, creating dust . . . it's possible people could have exposure to all kinds of . . . radiation. We need to know from a liability point of view, and from a future land use point of view, what's there."

During the 1970s and '80s, dozens of contracting sites were eliminated from FUSRAP, which was run by the Department of Energy (DOE), the modern-day steward of the nuclear weapons program, and has since been turned over to the Army Corps of Engineers. In most cases, officials concluded that the operations conducted at those sites posed little or no risk of environmental harm. However, USA TODAY found at least a dozen properties where officials walked away from obvious evidence of contamination.

At some, such as Blockson and several Florida sites also involved in large-scale efforts to extract uranium from phosphate, potential problems were passed over because it was unclear how much of the damage was tied to weapons work. At others, contamination was left untouched based on "hold harmless" clauses in companies' original contracts with the weapons program -- provisions that shielded the government from liability.

In 1985, FUSRAP officials used an old "hold harmless" clause as part of the basis for ruling out cleanup at the Cleveland site of the now-defunct Horizons Inc., which processed radioactive thorium for the weapons program in the '40s and '50s. A federal survey at the time found contamination "exceeded applicable guideline limits" for cleanup. General radiation readings were 10 times normal background levels in some buildings that were still in commercial use.

"In terms of the concern that sites have fallen through the cracks over the years, the (Energy) department is going to go back and actually has gone back at some sites to take another look at the activities that were conducted," says Ellen Livingston, a top environmental adviser at DOE.

At most private contracting sites where lingering contamination has not been cleaned up, the waste is "fixed," as it is at Blockson, so there's little threat of it migrating off-site by seeping into water supplies or becoming airborne. But some of those sites have faded from the government's institutional memory. So, there's no guarantee that future users would be warned about the risks of disturbing or redeveloping the property in ways that could "liberate" dangerous material.

Unsafe practices

During World War II, when the government began hiring contractors to help develop the atomic bomb, convenience was the driving factor in disposing of radioactive and toxic waste. Pollution concerns typically had more to do with public relations than public health.

"The main goal was to get (bombs built)," says James Maroncelli, an industrial historian who has been researching the contracting operations to write a "traveler's guide" to nuclear weapons-making sites. "If someone could get the work done, that's who they used."

After World War II ended, when the newly created Atomic Energy Commission (AEC) took over the weapons production effort, health and safety officials overseeing the program's contractors grew increasingly concerned about waste the companies' facilities generated.

"We should make careful appraisals of the type and extent of any hazard which does or may exist and develop ways and means of eliminating or minimizing these hazards," the AEC's top sanitary engineer wrote in 1948 in a memo sent to top commission officials.

"If long-lasting isotopes are discharged into the ground, the (AEC) has the responsibility of recording where they go and who might be affected," the memo said. "If (neighbors) may be affected by the contamination of the underground water supplies, we have a responsibility of warning those persons or critics and possibly making an equitable settlement."

The commission did document waste flows from many of the private facilities, but the studies often were aimed mainly at measuring the loss of valuable material that might be captured and reused. Reports at the time often noted that scientists had no long-term solution to the question of how to deal with the new and unique wastes spawned by weapons making -- wastes that would remain radioactive and toxic for hundreds or thousands of years.

"Whether local officials may be of great assistance is doubtful," one AEC engineer wrote in a secret memo in 1948. But "serious consideration should be given as to whether this problem should not be made public and lifted of its security veil."

Ultimately, though, the notion of slowing operations until the problem could be solved, or of informing affected communities and risking a public outcry for halting the work, was not seen as feasible. The burgeoning arms race with the Soviet Union began shortly after the AEC inherited the weapons program, spurring the same production-at-all-costs mentality that had prevailed during the war. Reports on waste problems at contracting sites were classified as a matter of policy and almost never shared with affected communities.

Examples of some contractors' pollution and its effects:

* Big uranium refineries, such as Mallinckrodt Chemical in St. Louis and the Linde Air Products and Electro Metallurgical plants near Buffalo, spewed thousands of pounds of radioactive dust from stacks each year. Weapons work at Cleveland's Harshaw Chemical from 1942 into 1953 vented up to 4,000 pounds of radioactive uranium-fluoride particles annually, making it a "major contributor" to local air pollution, AEC officials reported in 1949. When the city sought information, the report was heavily censored. AEC officials noted that the city was not given "any data over and beyond the immediate needs for public relations."

* Radioactive sludge poured into waterways at dozens of sites. Mallinckrodt pumped up to 3 million gallons a day of

uranium-laced waste into the Mississippi River, according to an AEC report from 1949, and surveyors with the weapons program later measured noticeable increases in radiation levels 15 miles downstream. Polonium plants run by Monsanto Chemical in Dayton, Ohio, released radioactive waste into the Miami River. "Contamination of the water at the outlet rises quickly after dumping but drops off again at a good rate," a federal memo in 1945 said. "The mud is highly contaminated all the time."

* Toxic chemical wastes also caused major environmental harm at contracting sites in New York, Pennsylvania, Ohio and other states. In 1949, a weapons program report noted at least 10 cases of chronic beryllium disease, an often-fatal lung ailment, among people living near the exhaust stacks of a Brush Beryllium plant in Lorain, Ohio. The plant produced the compound for arms work. In the mid-'50s, a zirconium-refining operation at Carborundum Metals in Akron, N.Y., pumped up to 12,000 gallons a day of poisonous thiocyanate wastes into a sewer that emptied into the Niagara River. Endorsed by officials in the weapons program as a short-term, "emergency" disposal measure, the dumping ran at least a year.

In summarizing pollution risks at various facilities during a meeting of the AEC's medical advisory board in 1949, one of the commission's health officials remarked, "All of these (contracting) units present a problem of the storage of contaminated materials (and) the disposal of contaminated materials."

How clean?

In 1967, when Vaughn Crile bought the old Vitro Manufacturing site in Canonsburg, Pa., with an eye toward building a small industrial park, AEC officials gave him a letter. Contamination from uranium processing the company did for the weapons program back in the '40s, the letter said, was all cleaned up. When federal officials got in touch again 12 years later, they wanted the property back so they could clean it up again.

It took five years of legal wrangling and a $40 million federal/ state cleanup before the Vitro land and 150 or so nearby homes and lots that had been contaminated by the radioactive wastes finally were made safe. The 15 businesses in Crile's industrial park never were allowed to return. "I had no control over what was going to happen, no control over my fate," he says now.

Crile, 68, wanted about $3 million to sell back the land, roughly the value if it hadn't been contaminated. The DOE, threatening to have it taken by eminent domain, argued for $650,000. Its argument was that the pollution killed the property's worth.

Ultimately, the courts split the difference. Crile got $1.4 million.

The AEC had every reason to suspect the Vitro site was a mess when Crile bought it. Through the late '40s and early '50s, when the company was processing thousands of tons a year of radioactive uranium compounds for the nuclear weapons program, the commission's safety staff documented enormous pollution.

In 1949, an AEC report noted that radium and uranium wastes were pumped daily into Chartiers Creek, where the banks emitted substantial radiation. In 1950, another weapons program survey noted that the plant's stacks pumped out about 200 grams of uranium dust an hour -- more than 1,000 pounds in a typical work year. A year later, officials reported that the emissions caused "an increase of background (radiation) by about 10 times" in the plant's immediate vicinity.

"They used to do (water) samples from the creek . . . and they would tell us to make sure to take the samples upstream, above where they dumped everything," says Joseph Krall, 79, who worked on Vitro's uranium operation in those years.

When the government came back to clean up the damage, much of the community was affected.

"People never worried about what we were doing up there, not until they put a fence around it; then we started worrying," says Albert Chesnik, 80, also a veteran of Vitro's weapons work. Not long after, a federal cleanup crew "came and replaced my workbench because it was built out of (contaminated) tank staves" from the giant uranium processing vats.

Many of the dozens of homes near the old plant had bigger problems. At Krall's house, workers replaced his

garage roof (also built from tank staves) and scrape the top few feet of soil off his lawn.

Today, the Vitro site is a grassy, fenced-off hill covering a specially designed pit holding thousands of cubic yards of radioactive waste.

The magnitude of the health risks faced by people who lived amid Vitro's waste for 40 years is tough to gauge, but many wonder.

"We used to play softball in that field" where Vitro dumped much of its waste, says Ed Progar, 72, whose 10 years as a Vitro employee spanned part of the time the company was doing weapons work. "We'd wrestle in the mud, get covered with it. They should have said something about that stuff they were messing with."

After the federal cleanup, Pennsylvania's health department did a crude study and found no obvious rise in cancer cases among people living in areas near the plant.

Two academic studies also were done: One found no increase in heart problems; the other showed that women had a higher than normal rate of thyroid abnormalities -- a problem that can be caused by low- level radiation exposure.

"For an environmental study involving so few people, that (thyroid anomaly) was very important," says Talbott, the University of Pittsburgh professor and the thyroid study's author. "We think it was from the shine from the plant, the gamma radiation."

The long-classified Vitro reports uncovered by USA TODAY showed that radiation levels around the site in the late '40s were three times or more above what Talbott assumed in her study. "That changes all the assumptions," she says. "It would be very worthwhile to update it. I think there was a low-level effect but a notable one."

Awaiting action

As the weapons work done at private facilities began winding down in the mid-1950s, the government typically did little to clean up leftover contamination before the properties were returned to commercial use.

The AEC had a mandate to ensure that all the contracting sites carried no public heath risk, but the standards were far less strict than those that came into play in later years. And records show that the commission's decontamination crews often did only the minimum work necessary to get sites clean enough for "release."

In many cases, considerable pollution remained for years, even decades, while the sites stayed in use, raising substantial public health risks. At the old Linde Air Products plant in Tonawanda, N.Y., now the site of a federal cleanup, workers who spent considerable time in contaminated buildings in the years after they were deemed safe by the AEC have long contended that their exposures caused health problems.

"The people who worked in that building (where weapons work was done), there's been a whole rash of cancers, just a tremendous number, but we could never prove it was from the contamination," says Joe Sebastian, 69, a longtime Linde worker and union official.

It wasn't until the early '70s, as leftover waste problems at many properties became increasingly evident, that the government created FUSRAP to assess and clean up the damage.

"There were a couple of embarrassing situations where sites identified as clean had not been cleaned up to (modern-day) standards," says Brian Quirke, a spokesman for the Energy Department's Chicago field office.

Today, FUSRAP remains the lead program for identifying and cleaning up contamination at sites where private facilities did nuclear weapons work. But the program has finished work at only 28 of the 46 sites it has deemed eligible for remedial action in its 25- year existence. What's more, some of the contamination assessments used to rule out cleanups in FUSRAP's early years have proved to be incomplete or inadequate.

Now, some sites that were deemed ineligible for the program are starting to be put back in, and more are likely.

For example, the Harshaw site, eliminated from FUSRAP in 1978, was put back into the program this summer. In the interim, it has sat idle, fenced off and plastered with radiation hazard signs.

The situation at other sites is murkier.

The Joslyn Manufacturing Co. in Fort Wayne, Ind., which rolled tons of uranium metal into rods and bars for the weapons program from 1944 through 1949, was declared safe by FUSRAP in 1987.

The decision was based on a partial survey, coupled with the fact that Joslyn did work similar to that performed at another steel mill, Simonds Saw and Steel in Lockport, N.Y., that had been eliminated from the program. But substantial contamination has since been discovered at Simonds -- cost estimates for cleanup range up to $80 million -- and no one has gone back to check for problems at Joslyn.

It's not entirely clear what agency would even be responsible for determining whether newly discovered weapons sites -- or those deemed ineligible for cleanup decades ago -- should be slated for federal action.

Congress gave FUSRAP to the U.S. Army Corps of Engineers in 1998, partly out of frustration over the slow pace of the program's cleanups. But the Corps' responsibility is to clean up sites already identified as needing action. The Department of Energy can recommend additional sites, but it lacks any authority to ensure that they will be added.

"I don't know what the motivation was for the people running FUSRAP back in the '70s and '80s when so many private sites were deemed ineligible for cleanup," says the DOE's Livingston. "Some of (the sites) probably have been forgotten . . . basically (FUSRAP officials) archived their documents and moved on.

"So it does take a fair amount of work to go back and reconstruct what happened at these places. We can do it, and we will. We just have to do it right."

Additional reporting: Scott Hillkirk in Pennsylvania; Debbie Howlett in Illinois; USA TODAY researchers Jean Simpson and Susan O'Brian.

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About this report

Wednesday

* In the 1940s and '50s, the government secretly hired hundreds of private companies to work on the nuclear weapons program -- and never told the workers or their communities of the dangers they might face from radiation and other hazards.

Thursday * The workers: Many of the surviving workers now have higher risks for cancer and other ailments, but there has been almost no effort to learn whether such problems have occurred. That oversight might cost those who have gotten sick a chance for compensation.

Today

* The environment: Radioactive and toxic contamination at many of the contracting sites lingered for years, sometimes with serious health risks. Some still are not cleaned up, ignored by federal programs meant to address pollution from nuclear weapons production.

For more

* See USATODAY.com for a complete look at this series, including a list of 150 sites around the USA where private companies did work for the nuclear weapons program as well as documents, video clips and charts.

Information hotline

* Former workers at the sites or others with concerns can call the Department of Energy toll free at 1-877-447-9756.

Thousands of pages of declassified material examined

USA TODAY investigative reporter Peter Eisler spent 10 months on this "Poisoned workers & poisoned places" project. Eisler:

* Examined more than 100,000 pages of declassified documents detailing the work that private companies did for the nuclear weapons program and the information that researchers gathered on the workers. The reporting took him to archives in Washington, D.C.; Atlanta; Albany, N.Y.; and College Park, Md. The records are mostly from the files of the Atomic Energy Commission and the Manhattan Project.

* Visited sites where the work was done, or directed other reporters to them, in 10 states. Eisler and the other reporters interviewed more than three dozen people who had worked at such plants or are relatives of such workers.

* Conducted scores of additional interviews with medical and scientific experts, current or former government officials, congressional staff, union officials and activists.

* Created an extensive computer database that catalogs information he uncovered about the sites where work was done.

* Filed a half-dozen Freedom of Information Act requests for documents not available at the archives.

In addition to that work, USA TODAY contracted with the Institute for Energy and Environmental Studies, a non-partisan public interest research group, to perform "dose reconstruction" studies. Those studies, based on the records Eisler uncovered, provide estimates of how much radiation workers absorbed when doing the weapons work.

The institute did similar research for workers and neighbors at the government-owned Fernald weapons production facility in Cincinnati. The federal government later settled lawsuits by the workers and neighbors, who alleged they were exposed to dangerous levels of radiation.

[Illustration]
GRAPHICS,b/w,USA TODAY(Maps); PHOTO,b/w,Robert Del Tredici; PHOTOS,b/ w,Jason Cohn for USA TODAY(3); PHOTO,b/w,Joseph Krall; Caption: Vitro Manufacturing: It took $40 million in state and federal funds to clean this site and nearby areas in Canonsburg, Pa., which were contaminated by radioactive wastes from uranium processing. Caution: Stan Luginski, left, Joseph Krall and Ed Progar at Vitro. Says Krall, "They used to do (water) samples from the creek . . . and they would tell us to make sure to take the samples upstream, above where they dumped everything." Cleanup: The federal government excavates 2 feet of soil from the yard of Joseph Krall, near the contaminated Vitro Manufacturing property. Workers also replaced Krall's garage roof because it had been built out of contaminated tank staves from Vitro uranium processing vats. Vitro worker: Bill Progar, who with his brother Ed worked at the site, holds his Vitro identification badge. Vitro processed thousands of tons a year of radioactive uranium compounds for the weapons program. Closed in December 1985: A stone marker notes that 266,000 tons of radioactive waste is buried inside the fenced Vitro property.