

# 1961 tests at Paducah plant indicated workers exposed to neptunium

Continued from Page One

to workers who may have been exposed to dangerous radiation and acknowledged the government hadn't been forthcoming about the threat.

### Questioning Baker

The exchanges between Baker and McMurry during the deposition frequently grew testy, and attorneys for the defendants regularly objected to questions McMurry posed to Baker.

Early in the questioning, McMurry asked Baker whether Richardson's apology and the conclusions of government investigators about radiation exposure at Paducah were a fair criticism of him, as the person responsible for radiation protection.

"No," Baker responded. "Can you tell me why, sir, just generally?" McMurry asked. "Generally, they were not based on fact," Baker said.

"You think that these investigators... made up the facts?" McMurry asked.

"No, I don't believe they made up the facts. I believe they were greatly influenced in the way that they presented their case by the directions they had received from their management," Baker said.

David Fuller, a 33-year Paducah plant worker who retired Oct. 1, said he understood why Baker's answers were defensive, given his former position. "But without a doubt, protections at the plant — radioactive and otherwise — in those days were not what they should have been," said Fuller, who headed PACE — the Paper, Allied-Industrial, Chemical, Energy workers' union at the Paducah plant — until he retired.

Richardson's apology and a new federal law to compensate Paducah workers and their families are "recognition of the damage" that was done to them, Fuller said in a telephone interview. "They were not monitored properly. They were not protected properly.... It was a time in our nation's history when expedi-

ence took the place of good judgment," he said.

McMurry also said the procedures in place during Baker's tenure failed to protect workers. "If they had recognized that their processing of uranium was exposing their workers to neptunium and plutonium to the degree it was, they would have been required to redesign the plant to keep the workers from breathing in these substances," he said.

"That plant was designed to process uranium. It was never designed to protect workers from the most dangerous substances known to man," he said.

But Robert Tait, the Columbus, Ohio, attorney representing some of the companies being sued, described Baker as "a hero of the Cold War."

"We thought his testimony was clear and forthcoming," Tait said last week. "... At the time he was there, he was one of the top experts in the world. And he did everything possible through (the) years he was at the plant to ensure everyone who worked there, including himself, was protected."

Tait said the plant was in compliance with the law and applicable regulations "from the outset of operations through the present day."

### The lawsuit

McMurry filed the lawsuit last year against Union Carbide, which ran the plant until 1984; Lockheed Martin, whose predecessor Martin Marietta Corp. took over from Union Carbide; and uranium suppliers General Electric Co., E.I. du Pont de Nemours & Co., NLO Industries Inc. and NLO Inc. It is scheduled for trial in July 2003.

The lawsuit alleges workers were unknowingly exposed to dangerous levels of radiation and were "assaulted" by radioactive material brought to the plant from other facilities.

In April, a federal judge ruled that Kentucky's worker compensation law barred plant workers from suing their own employer, but plaintiffs



BY STEVE DURBIN, THE CJ

were allowed to proceed against defendants other than their employer. Whether workers were being adequately shielded from radioactive material was the crux of McMurry's questioning of Baker.

Those materials were principally plutonium and neptunium, both highly radioactive and dangerous to people since they can collect in the body and interfere with blood cell production. Plutonium and neptunium are often produced when uranium is enriched for use in nuclear weapons or nuclear reactor fuel.

During his videotaped deposition, Baker conceded he had little formal training on the health effects of radiation. He also said:

- He didn't recall readings found by the Department of Energy of extremely high levels of contamination from airborne uranium, neptunium and plutonium.

- Eating, drinking and smoking in contaminated areas "was not prohibited."

- He did not think it was unsafe for Paducah workers to not wash their hands before eating.

- People and equipment leaving the plant were never checked for contamination.

Baker, who early in his career

worked on the Manhattan Project that developed the atomic bomb, had a bachelor of science degree in electrical engineering from Louisiana Tech when he was hired in 1951 by Union Carbide to head the radiation protection program at Paducah.

He had been an instrument maintenance supervisor for the then-Atomic Energy Commission in Oak Ridge, Tenn., and worked for three years in the health physics department there. He also took graduate courses in molecular, atomic and nuclear physics at the University of Tennessee and, almost a decade after working at the Paducah facility, took leave for a nine-month program on industrial hygiene engineering at Harvard University.

Baker said he did not have formal training in the health effects of radiation but had "learned a lot about it" by the time he went to Paducah.

Tait said Baker's background was appropriate for the time.

"You have to understand that in 1945, no one had any background in radiation health effects," Tait said.

In 1964, Baker wrote a paper describing urinalysis results from tests conducted three years earlier on 21 workers who showed radiation counts in their urine. "These results could be indicative of more than the permissible body burden or as no significant exposure," Baker wrote.

At the deposition, he told McMurry he was not surprised to see such results because the men were tested after being in the plant, and the numbers would be consistent with exposure to acceptable levels of neptunium dust. Lung tests on 14 other men supported that conclusion, he said.

Urine tests were subsequently suspended at Paducah until 1989.

People who inhale neptunium will excrete much of it through urine in the first few days after exposure. But some neptunium stays in the body and is deposited in the bones.

McMurry said calculations based on accepted health physics practices point to the 21 men being exposed to

much higher than permissible levels of neptunium dust — 32 years' worth of dust in a facility that had been processing uranium for only about eight years at the time the men were tested.

### Testing of employees

Baker emphatically disagreed. He also disagreed with the 1993 findings of the National Institute of Occupational Safety and Health, which called the system that replaced urine tests "unreliable and erratic."

That system, which monitored lung intake, used machinery that wasn't always on site and was sometimes being repaired, NIOSH found. The inability to make "on demand" examinations of workers "was a serious deficiency," the agency said.

An Energy Department investigation conducted about four years after Baker left the plant also found the lung-testing program deficient, and urine tests were reinstated.

Baker said the NIOSH investigators "may not know what they are talking about." When he was at the plant, he said, the lung tests were "very efficient, not deficient."

Baker also disputed a February 2000 federal report that found widespread lapses and deficiencies in efforts to protect employees from harmful radiation levels.

"Contamination control practices were lax at Paducah from the beginning of operations until the mid-'80s," the Department of Energy concluded. As a result, the report said, some workers probably were exposed to dangerous levels of radiation and contamination from hazardous chemicals.

In the 2000 report, the Energy Department found that during checks made in 1962, some measurements of airborne contamination from neptunium were as much as 100 times what the plant considered permissible.

And in 1980, according to the report, airborne radiation from uranium in one Paducah plant shop was 1,680 times the plant limits; from

neptunium 2,121 times; and from plutonium 2,483 times.

Baker said he didn't remember such readings. "And if they existed like this, they were probably very, very infrequent or of very short duration."

Many current and former plant workers have told of eating and smoking in contaminated areas. They said they were assured by supervisors they were not in danger of ingesting contamination.

The Energy Department report said "eating, drinking and smoking in contaminated work areas was common practice."

Asked about that, Baker said: "Where it says 'common practice,' it was not prohibited."

He also said that the plant's policy was to encourage hand-washing, but "there's no practical means of enforcing that" and that he did not think it was "an unsafe practice" for workers to not wash their hands before eating.

Contamination outside the plant also concerned Energy Department investigators. Lax practices "made clear the probability" that radioactive material left the plant on workers' clothes and equipment, they said.

The department found no records of monitoring people or machinery leaving the site until 1986. Asked whether he kept such records, Baker said: "Not of personnel, not so ever. Are they now?"

Tait, the attorney representing some of the defendants, said there is no indication that "substantial contamination ever left the plant through personnel."

Gregory Cook, spokesman for Bechtel Jacobs Co., the company handling environmental cleanup at the Paducah plant, said radiological monitoring records are kept of workers and equipment leaving the site.

People and machinery are scanned if they have been in a known contaminated area, and spot checks are carried out for contamination of vehicles regularly at the plant, Cook said.

## CJ 2001 PGDP tests p2

Clipped By:



bill9917

Sat, Jan 4, 2020